

# ‘Falls not a priority’: insights on discharging older people, admitted to hospital for a fall, back to the community

Claudia Meyer<sup>A,B,L</sup>, Emma Renehan<sup>A</sup>, Frances Batchelor<sup>C</sup>, Catherine Said<sup>D,E</sup>, Terry Haines<sup>F</sup>, Rohan Elliott<sup>G,H</sup> and Dianne Goeman<sup>A,I,J,K</sup>

<sup>A</sup>Bolton Clarke, 31 Alma Road, St Kilda, Vic. 3182, Australia.

<sup>B</sup>LaTrobe University, Centre for Health Communication and Participation, Bundoora, Vic. 3086, Australia.

<sup>C</sup>National Ageing Research Institute, 34–54 Poplar Road, Parkville, Vic. 3052, Australia.

<sup>D</sup>Department of Physiotherapy, Austin Health, 145 Studley Road, Heidelberg, Vic. 3084, Australia.

<sup>E</sup>Department of Physiotherapy, The University of Melbourne, Parkville, Vic. 3010, Australia.

<sup>F</sup>School of Primary and Allied Health Care, Monash University, Frankston, Vic. 3199, Australia.

<sup>G</sup>Austin Health, Heidelberg, Vic. 3184, Australia.

<sup>H</sup>Monash University, Centre for Medicine Use and Safety, Faculty of Pharmacy and Pharmaceutical Science, Parkville, Vic. 3052, Australia.

<sup>I</sup>University of Newcastle, School of Medicine and Public Health, Callaghan, NSW 2308, Australia.

<sup>J</sup>The University of Sydney, Kolling Institute of Medical Research, Northern Clinical School, St Leonards, NSW 2065, Australia.

<sup>K</sup>Monash University, Department of Nursing, Health Sciences and Medicine, Central Clinical School, Australia.

<sup>L</sup>Corresponding author. Email: [cmeyer@boltonclarke.com.au](mailto:cmeyer@boltonclarke.com.au)

**Abstract.** Falls are common among older people and a leading cause of injury-related hospitalisation. The immediate post-hospitalisation period is a risky time for further falls. This paper explores discharge strategies from the perspectives of older people hospitalised for a fall and liaison nurses assisting people to return home. Exploratory mixed methods were used. Semi-structured interviews with older people were conducted regarding their experience of the fall and discharge strategies. Quality of life, falls risk and functional capacity were measured by questionnaire. Liaison nurses were also interviewed. Interviews were audio-recorded, transcribed and thematically analysed. Mixed-method synthesis occurred using role-ordered matrix analysis. Older people ( $n = 13$ ) and liaison nurses ( $n = 6$ ) participated. Older persons' quality of life was average and falls risk high. Thematic analysis revealed three key themes: 'falls are not a priority', 'information not given, or given and not retained' and 'reduction in confidence and independence'. Role-ordered matrix analysis identified differences between acute and rehabilitative hospital stays. Older people hospitalised for a fall present a unique opportunity for implementation of falls prevention strategies. However, hospitalisation is often a time of crisis with competing priorities. Timing and relevance are crucial for optimal uptake of falls prevention strategies, with the primary care setting well-placed for their implementation.

**Additional keywords:** community health, falls prevention, hospital discharge, mixed methods, pilot study, quality of life.

Received 24 April 2017, accepted 7 September 2017, published online 14 November 2017

## Introduction

Falls among community-dwelling older people are a major public health concern. Hospitalisation resulting from a fall is a frequent occurrence, affecting both older people individually and the health system more broadly. In Australia, falls account for 70% of hospitalisations due to injury among people aged >65 years and 87% among people aged >85 years (Australian Institute of Health and Welfare 2014). Many advances in understanding causes of falls and effective management strategies have occurred, yet injury-related hospitalisation rates due to falls

continue to rise, evidenced by an age-standardised increase of 2% between 2000 and 2010 (Australian Institute of Health and Welfare 2014). Falls often result in serious injury (5–10%) and 92% of hip fractures are attributed to falls (McKay and Anderson 2010). Approximately half of community-dwelling older adults report a fear of falling, which for 40% results in a downward cycle of inactivity, decreased strength and balance (Zijlstra *et al.* 2007). Falls are often multi-factorial, whereas health systems tend to focus on episodic care of individual diseases (Tinetti *et al.* 2006); this leads to a system potentially

### What is known about the topic?

- Hospitalisation for a fall is a public health issue, with potential functional decline and post-discharge increase in falls risk.

### What does this paper add?

- Hospitalisation for a fall can be stressful; yet, it is imperative for falls prevention discharge information and strategies to be timely, informative and presented in various mediums.

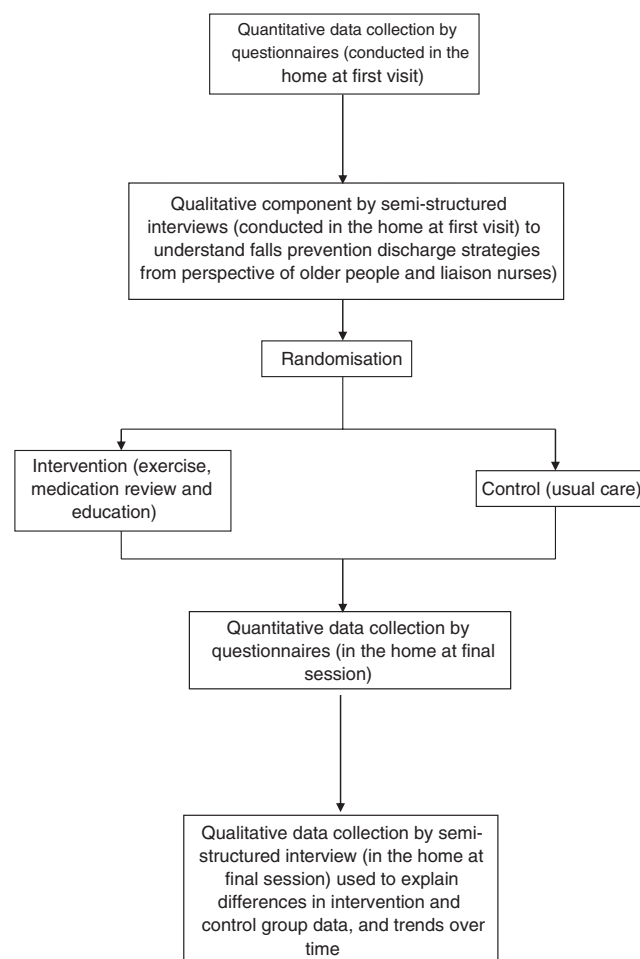
ill-equipped for multiple risk factors and the required range of health professionals.

One in three older people fall within a given year (Tinetti *et al.* 1988), with a three-fold risk of falling again in subsequent months (Rubenstein and Josephson 2006). The post-hospital discharge period (not necessarily related to a fall) poses an increased risk of falls. Falls rates are higher in the post-discharge period compared with the general older person population, with up to 40% falling within 6 months, and over 50% resulting in injury (Hill *et al.* 2011a). Thirty-four per cent of older people fall within 3 months of discharge from aged care inpatient rehabilitation (Sherrington *et al.* 2011). Higher risk of hospital re-admission may place stress on an already overburdened acute care health system.

Primary healthcare services are well placed to potentially ease the burden on acute care services, by implementing falls prevention guidelines. One study showed a large proportion of general practitioners (GPs), physiotherapists and occupational therapists believed that falls prevention guidelines are feasible to implement in practice (Milisen *et al.* 2006), but competing priorities and inadequate training potentially limited change in clinical practice (Goodwin *et al.* 2011). Peer-led programs, thought to be a cost-effective mechanism for falls prevention programs in the community, are currently limited by their lack of training in exercise provision, a key component of falls prevention (Goodwin *et al.* 2011).

Strong evidence for certain single intervention falls prevention strategies exist, such as provision of exercise (Sherrington *et al.* 2011) and withdrawal of psychotropic medications (Hill and Wee 2012). Effect of falls prevention education is inconclusive (Gillespie *et al.* 2012); delivery of an individualised education program reduced falls rates in hospital, but had no sustained effect post-discharge (Hill *et al.* 2011a). Multifactorial programs based on individual falls risk assessment also reduce fall rates (Gillespie *et al.* 2012). Participation in, and engagement with, falls prevention strategies by the older person is a critical component. Older people are largely unaware of effective falls prevention strategies they can pursue on their return home (Hill *et al.* 2011b). Falls risk may not be identified, or they may feel that their current activities are enough to prevent falls (Haines *et al.* 2014), which may be potentially an issue in the current climate of patient-initiated contact with the primary care sector.

A gap exists in the research related to post-hospital discharge falls prevention strategies, together with an understanding of how the primary healthcare sector can be of benefit. This paper



**Fig. 1.** Flowchart of complete study design (pre-randomisation interviews only reported in this paper).

explores relevant falls prevention discharge strategies from the perspective of older people who were hospitalised for a fall and the liaison nurses assisting people to return home.

## Methods

### Study design

This paper reports the initial component of a pilot randomised controlled trial (RCT). Fig. 1 outlines the sequential explanatory mixed-method design, with qualitative data used to assess and explain trends of quantitative baseline characteristics (Creswell and Plano Clark 2011). Briefly, the RCT intervention included an exercise program designed and modified by an exercise physiologist, medication review by a pharmacist and provision of falls prevention education, delivered in-home post-discharge. The control arm was usual post-discharge home nursing care provided by a not-for-profit community nursing organisation in metropolitan Melbourne.

Semi-structured interviews with older people occurred within 1–2 weeks of return home after hospitalisation for a fall, before randomisation. Questions focused on their perceptions of falls and provision of falls prevention information, and any resultant reduction in confidence and independence (Box 1).

Semi-structured interviews with liaison nurses (nurses based in hospitals facilitating transition from hospital to home with community nursing services) were conducted at their workplace following the recruitment phase. Categories of discussion included recruitment of older people, engaging with the research team and provision of information at time of discharge (Box 1).

Bolton Clarke Human Research Ethics Committee approval was granted (HREC number 150008).

### Participants

People hospitalised following a fall were identified as potential participants. Inclusion criteria were:

- Aged  $\geq 65$  years;
- Discharged home from an acute or sub-acute hospital;
- Deemed medically fit; and
- Requiring nursing care or support at home post-discharge.

Exclusion criteria were weight-bearing restrictions or terminal illness.

Potential participants were approached by liaison nurses and informed verbally of the study. If participants provided verbal consent, contact details were forwarded to the study team. Interested persons were telephoned within 1–2 weeks of discharge, with initial appointments subsequently made. Participant Information and Consent Forms were sent to participants before the initial visit. People with cognitive impairment may have coincidentally been part of the recruitment process. Informed consent for those with suspected cognitive impairment was sought by a member of the research team (CM, an experienced allied health clinician and researcher) judging competence

according to recommendations from the Dementia Collaborative Research Centre (<http://www.dementia.unsw.edu.au/>, accessed May 2017).

### Data collection

#### Qualitative data

Baseline interviews were conducted by one of the researchers (CM). All interviews were digitally audio-taped.

#### Quantitative data

- Demographic characteristics
  - Age, gender, education level, health conditions, falls history, length of hospitalisation.
- Health-related quality of life
  - Assessment of Quality of Life (AQoL) – 8D (Richardson *et al.* 2012), measured between 0 and 1 (high defined as  $\geq 0.84$ , low defined as  $< 0.84$ ).
- Fear of falling
  - Falls Efficacy Scale – International (Yardley *et al.* 2005), measured out of 64 (higher scores indicating greater fear of falling).
- Falls risk
  - Falls Risk for Older Person – Community (FROP-Com) (Russell *et al.* 2008) rated out of 60 (higher scores indicating higher risk).
- Functional ability
  - Katz Index of Independence in Activities of Daily Living Scale (Wallace and Shelkey 2008).
- Frailty
  - Fried Frailty Criteria (weight loss, grip strength, exhaustion, timed walk, activity level) (Fried *et al.* 2001).

### Data analysis

#### Qualitative data

Audio tapes were transcribed verbatim with transcripts reviewed (CM). Two independent reviewers (CM and ER) used open coding initially, guided by the interview questions, to identify recurring themes within the text (Strauss and Corbin 2008). A third reviewer (DG) analysed discrepancies as needed.

#### Quantitative data

Descriptive or frequency analysis was undertaken for all baseline data using SPSS Statistics (ver. 21, IBM Corp., Armonk, NY, USA).

#### Mixed-methods analysis

A role-ordered matrix approach was used to provide a synthesis of qualitative themes and baseline quantitative data. This approach allows for sorting data according to a certain set of criteria, reflecting the views of individuals within those criteria (Miles *et al.* 2014). The chosen criteria were acute v. rehabilitative hospital stay. The next stage was to consider bio-sociodemographic characteristics of support arrangements, injury level and quality of life.

#### Box 1. Baseline interview questions

##### Questions for older person interviews

Can you tell me a little bit about the fall that you had?

Were there any injuries as a result of the fall?

How long were you in hospital? Which hospital? When were you discharged?

Do you know why you fell?

Has your confidence or independence changed as a result of the fall?

Have you changed what you do because of the fall?

Did you receive any falls prevention information while in the hospital?

Were you provided with any falls prevention options on discharge, such as referral to other services?

##### Points to explore with liaison nurses

Identifying potential recruits through existing hospital records (i.e. falls not recorded as a primary diagnosis, but rather may be 'hidden' within the records).

Identifying the fall as the reason for admission when associated with co-morbidities.

Provision of information regarding the project at time of discharge (often coinciding with a busy and potentially stressful time for older people and their families).

Engaging with the research team when faced with competing priorities.

## Results

Approximately 60 people were approached by 1 of 10 liaison nurses across nine acute and rehabilitative hospitals. Thirty-seven people agreed to be telephoned, of whom 13 agreed to an initial appointment. Reasons for non-participation were: unable to make contact ( $n=6$ ); not interested ( $n=5$ ); carer declined ( $n=4$ ); too busy ( $n=2$ ); worsening condition ( $n=2$ ); ineligible ( $n=2$ ); and death ( $n=2$ ).

Thirteen people participated in baseline interviews (Table 1). Seven (53.8%) were female and six (46.2%) were male, and the average age was  $82.2 \pm 9.7$  years. Approximately 30% had completed junior high school (up to Year 10), identified as Australian ethnicity (84.6%) and were widowed (53.8%). All but one older person lived alone, and the average number of reported health conditions was  $5.6 \pm 2.7$ . Quality of life was rated average ( $0.5 \pm 0.1$ ), falls risk was high ( $22.2 \pm 3.5$ ) and fear of falling was average ( $32.5 \pm 6.6$ ). Frailty criteria indicated nine participants were frail and another four were intermediate. The Abbreviated Mental Test Score, as part of the FROP-Com, indicated four (30.8%) participants had cognitive impairment.

### Thematic analysis

Three themes emerged in relation to exploring falls-related discharge planning from the perspective of older people and liaison nurses; they were 'falls are not a priority', 'information not given, or given and not received' and 'reduction in confidence and independence'.

#### *'Falls are not a priority – for the older person or treating hospital health professionals'*

Admission to hospital precipitated multiple investigations and interventions related to the possible underlying medical reason for the fall. However, it appeared, from the older persons' perspective, that other potential falls risk factors were not always given due consideration, with the fall overlooked.

They haven't tested that leg any further...the rheumatology team came around... but they were more concerned about the heart attack [P7].

The liaison nurses stated that falls are not always given priority during the hospital admission, with reason for admission usually noted to be the medical condition preceding the fall, thus reducing likelihood of further investigation.

...it's not until you read right through their notes and they've got fall as a secondary or a third entry into why it was a part of their admission... they'll usually put functional decline or [not coping] or something like that. It's not always identified that they've had a fall [L4].

#### *'Information not given, or given and not retained'*

Many participants could not recall being spoken to about falls prevention, despite being admitted to hospital because of a fall.

I don't know, I can't remember. They might have but I don't remember [P8].

The liaison nurses' comments suggested that the fall and hospital experience may have been overwhelming for the older

**Table 1. Baseline demographic data**

Baseline assessment ( $n=13$ )
Age (years) $82.2 \pm 9.7$
Gender <ul style="list-style-type: none"> <li>• Female 53.8% (<math>n=7</math>)</li> <li>• Male 46.2% (<math>n=6</math>)</li> </ul>
Highest education level <ul style="list-style-type: none"> <li>• Junior secondary 30.8% (<math>n=4</math>)</li> <li>• Primary 15.4% (<math>n=2</math>)</li> <li>• Senior secondary 15.4%</li> <li>• Tertiary – Bachelor 15.4%</li> <li>• Tertiary – Post-graduate 15.4%</li> <li>• Tertiary – Certificate diploma level 7.7% (<math>n=1</math>)</li> </ul>
Identified ethnicity <ul style="list-style-type: none"> <li>• Australian 84.6% (<math>n=11</math>)</li> <li>• Indian 7.7% (<math>n=1</math>)</li> <li>• Aboriginal and Torres Strait Islander 7.7% (<math>n=1</math>)</li> </ul>
Marital status <ul style="list-style-type: none"> <li>• Widowed 53.8% (<math>n=7</math>)</li> <li>• Divorced or separated 23.1% (<math>n=3</math>)</li> <li>• Never married 15.4% (<math>n=2</math>)</li> <li>• Married 7.7% (<math>n=1</math>)</li> </ul>
Living arrangements <ul style="list-style-type: none"> <li>• Lives alone – community 76.9% (<math>n=10</math>)</li> <li>• Lives alone – retirement village 15.4% (<math>n=2</math>)</li> <li>• Lives with spouse – community 7.7% (<math>n=1</math>)</li> </ul>
Number of health conditions $5.6 \pm 2.7$
Length of hospital stay (days) $13.8 \pm 15.9$
Most common health conditions <ul style="list-style-type: none"> <li>• Arthritis 69.2% (<math>n=9</math>)</li> <li>• Back pain 69.2% (<math>n=9</math>)</li> <li>• Visual problems 69.2% (<math>n=9</math>)</li> <li>• Cardiac condition 53.8% (<math>n=7</math>)</li> <li>• Stroke and other neurological conditions 30.8% (<math>n=4</math>)</li> <li>• Dizziness 30.8% (<math>n=4</math>)</li> <li>• Respiratory condition 30.8% (<math>n=4</math>)</li> <li>• Osteoporosis 30.8% (<math>n=4</math>)</li> <li>• Joint replacement 15.4% (<math>n=2</math>)</li> <li>• Diabetes 15.4% (<math>n=2</math>)</li> <li>• Peripheral neuropathy 7.7% (<math>n=1</math>)</li> </ul>
Quality of Life (AQoL-8D) (0 = poor, 1 = excellent) $0.5 \pm 0.1$
Falls risk (FROP-Com) <sup>A</sup> $22.2 \pm 3.5$
Fear of falling (FES-I) <sup>B</sup> $32.5 \pm 6.6$
Presence of frailty (Frailty Index) <ul style="list-style-type: none"> <li>• Frail: 69.2%, <math>n=9</math></li> <li>• Intermediate: 30.8%, <math>n=4</math></li> <li>• Not frail: 0%, <math>n=0</math></li> </ul>
Functional capacity (Katz ADL) <sup>C</sup> <ul style="list-style-type: none"> <li>• Level A: 53.8%, <math>n=7</math></li> <li>• Level B: 23.1%, <math>n=3</math></li> <li>• Level C: 7.7%, <math>n=1</math></li> <li>• Other: 15.4%, <math>n=2</math></li> </ul>

<sup>A</sup>0–11 mild, 12–18 moderate, 19–60 high.

<sup>B</sup>Higher score represents greater fear of falling.

<sup>C</sup>Level A, fully independent; Level B, independent in all but one function; Level C, independent in all but bathing and one additional function.

person, potentially limiting the person's ability to retain falls prevention information.

It is all just too overwhelming . . . it's hard in the hospital situation when they have so many people coming at them from all directions . . . it is hard to process [L1].

Of importance to the older person was the inability to get up from a fall and how that made them feel. No information had been provided on getting up off the floor following a fall.

I was frantically trying to lift my arm to signal to her through the window, but she couldn't see me. I lay on the floor for half an hour [P2].

#### *'Reduction in confidence and independence'*

Being hospitalised for a fall provided impetus to contemplate feelings related to the fall and consequences of the fall, specifically a desire to remain confident in their abilities and independence.

At the moment I'm very tentative but I have gone for a walk each day . . . once you've started feeling that you're weak and you can't do this or that, well, it just – it affects how you face life and what you do every day [P1].

A lack of confidence was also felt to be linked to other factors, rather than only falls.

It's probably more because I have the virus [HIV] that I've lost confidence, not because of the fall [P11].

#### *Synthesis of data*

The role-ordered matrix approach allowed the views of individual participants to be analysed according to categories of acute v. rehabilitative hospital stay, cognisant of salient characteristics of living arrangements, injury level and quality of life (Miles *et al.* 2014). This method enabled important distinctions to be examined, relevant to falls prevention discharge strategies. The data synthesis can be seen in Table 2, and reflects the salient characteristics and supporting quotations. A summary of four examples is provided below.

##### *Case study 1*

Lived alone, with limited family support. He sustained a fractured forearm from a fall, which was undiagnosed for 2 weeks. On admission to an acute care hospital, he reflected that he would have sought assistance for the pain earlier if he had known the importance of falls reporting. Quality of life was low, as evidenced by the objective test.

##### *Case study 2*

Sustained a fractured wrist from a fall, with a lumbar spine fracture diagnosed several days after discharge from acute care. She lived alone but reported having a very supportive daughter, with quality of life rated as average. Again, there was no recollection of falls prevention information given, with falls seemingly not prioritised by the physiotherapist, just the rehabilitation of the wrist post fracture.

##### *Case study 3*

Sustained a fractured humerus and several spinal vertebrae from her fall, resulting in a rehabilitative hospital stay. The participant reported that little falls prevention information was provided despite the longer hospital stay, severe injuries and decreased confidence. Her quality of life was rated as being average. Referral was made to the osteoporosis clinic, but post-discharge physiotherapy focused on exercises for shoulder range of movement rather than balance impairment.

##### *Case study 4*

Lived alone, with no family support. Her fall resulted in a fractured ankle and rehabilitative hospital stay, she expressed that exercises were given during rehabilitation, whereas the admission to acute hospital focused only on her silent myocardial infarction. Her confidence deteriorated at home away from the supports of a rehabilitative hospital unit, with quality of life rated as low.

## **Discussion**

This mixed-methods study has explored the under-researched area of falls prevention discharge strategies for older people hospitalised for a fall. This study was strengthened by triangulation of data, revealing insights from the perspective of both the older person and liaison nurses assisting people to return home. Importantly, this study revealed that both groups felt falls prevention was not prioritised during hospital admission, despite being admitted following a fall. Caution should be applied, however, as treating health professionals were not interviewed for this study. This study group of older people were rated as having either an intermediate or high level of frailty, a high risk of falls and all, but one, were living alone, yet insufficient falls prevention information appeared to be given. On closer examination of the data through a role-ordered matrix synthesis, insights have shown some differences between acute and rehabilitative hospital sectors.

Falls prevention did not appear to be a priority for older people who had sustained a fall, or for health professionals in contact with older people in hospital post-fall. Falls prevention literature supports this finding, with older people stating falls prevention is for others, not themselves (Haines *et al.* 2014). Priority, particularly in the acute sector, seemed to be given to the acute medical condition on admission. No doubt these medical conditions warrant attention, but falls assessment, according to the American and British Geriatrics Society Falls Prevention Guidelines (Panel on Prevention of Falls in Older Persons *et al.* 2011), should be considered once pressing medical needs are met. A falls assessment is critical for any older person who has fallen to ensure appropriate strategies are implemented to mitigate further falls (Panel on Prevention of Falls in Older Persons *et al.* 2011). Sub-analysis of acute v. sub-acute data shows little emphasis on falls assessment in the acute sector, regardless of severity of injury. The rehabilitative sector, however, showed evidence of balance and mobility assessment, and referral to further services. Time and resources potentially differ between sectors, with rehabilitative sectors specifically designed to improve function. There is an imperative from both sectors to

**Table 2. Role-ordered matrix**

	Case study (with salient characteristics)	Supporting quotations
Acute hospital stay	Participant 11	No information received
	Lives alone, no family support	'No. They were rather remiss about a lot of things'
		Prioritising the fall
	Fall resulted in severe injury of fractured forearm	'[Remiss about] just mainly the advice to prevent falls and what to do when I do have a fall such as getting to a doctor as quickly as possible because had I gone to a doctor earlier, then I wouldn't be putting up with so much pain and six weeks of having my arm in a plaster'
	Quality of life measured as 0.3	Lack of confidence and independence
		'No. It's probably more because I have the virus that I've lost confidence, not because of the fall ... I do get out, but not very often ... I am my own worst enemy'
	Participant 13	No information received
	Lives alone, supportive daughter	'I can't really remember'
		Prioritising the fall
	Fall resulted in severe injury of fractured wrist and lumbar spinal vertebrae	'The only thing you got at the hospital was a physio told you to do exercises on your hand (daughter comment)'
	Quality of life measured as 0.5	Lack of confidence and independence
		'Maybe a little bit [of lost confidence] because I can walk up and down here and I'm alright. I take my walking stick, that sits there somewhere usually ... I'm not game [to go outside] ... I'm confident around here it doesn't worry me, but I didn't feel that I could go downstairs'
Rehabilitative hospital stay	Participant 6	No information received
	Lives alone, supportive daughter	'No one talked about prevent – oh yes, someone said to me don't wear bifocals. [Laughs] But no, everyone was interested as to how I had done it. It was just an accident'
		Prioritising the fall
	Fall resulted in severe injury of fractured humerus and spinal vertebrae	'Well the fall was very simple. I just tripped over a little'
	Quality of life measured as 0.45	I had a lot of tests at the physio department ... my balance was pretty good
		'I am going to the osteoporosis clinic ... my bones aren't good ... I'm severe osteoporosis'
		Lack of confidence and independence
		'I'm very careful. I've slowed down with what I'm doing. When I go out into the garden I hang on to things. So I'm being careful'
	Participant 7	No information received
	Lives alone, no family support	'No [falls information received]'
		Prioritising the fall
	Fall resulted in severe injury of fractured ankle	'But they haven't tested that leg any further. The rheumatology clinic team came around and they said they were concerned about the condition, but they were more concerned about the heart attack'
	Quality of life measured as 0.35	'[In rehab] physiotherapist involved both legs ... I was up and down, up and down'
		Lack of confidence and independence
		'Not because of the mobility or lack of it. I'm not a really overconfident person anyway. I've lost a lot of confidence about – I miss the company of being in hospital. I find it lonely at home. I don't have a lot of confidence about getting out'

ensure a fall triggers prioritised assessment, with simultaneous provision of falls prevention information. However, given the time and resource constraints in hospitals, the primary healthcare sector may be better placed to undertake post-discharge falls prevention. Victoria's Primary Care Partnerships, a collaboration of hospitals and community healthcare services among others, are well placed to support the co-ordination and integration of services required to assess and manage falls (Day *et al.* 2014). It is important to note, however, that primary healthcare services currently operate through an older person initiative model, rather than the healthcare provider being the initiator; this being problematic when older people are reluctant to acknowledge falls (Haines *et al.* 2014).

These data also suggest that falls prevention information was not given to the older person despite them being admitted for

a fall. However, it is possible that information was given but not retained. For the few participants with cognitive impairment, retention of the falls prevention message may have been affected due to memory loss, with the intervention component of the study specifically supported through written and verbal reminders. This study did not seek to exclude people with dementia, as many previous falls prevention studies have done (Shaw 2007), given that people with dementia seek to be included in research and have their voice heard (Beuscher and Grandio 2009). Liaison nurse data revealed a perception that older people in general may be overwhelmed with information during an acute stay, potentially affecting recall. Other studies have shown education to increase knowledge of falls prevention strategies, but carry-over of information from hospital to community is limited (Hill *et al.* 2011a). Adoption of recommended strategies does not always

occur (Russell *et al.* 2010), and people may identify falls prevention to be for others, not themselves (Haines *et al.* 2014). Timing, nature and delivery of falls prevention messages is crucial. Liaison nurses identified education to be potentially more effective on return to the community and routine activities. Most likely, this is more effective for the person with memory concerns, given that familiarity and consistent routines are hallmarks of Australian best practice dementia care (Guideline Adaptation Committee 2016). Appropriate systems are necessary to ensure falls prevention education occurs on discharge, again potentially in the primary healthcare sector once the initial shock of hospitalisation has subsided and the person has returned home.

A reduction in confidence and independence following the fall was evident; however, it was difficult to unpack from many other concerns facing the older person. Decreased confidence was related to co-morbidities, social isolation and unsafe living arrangements, and not necessarily to the fall itself. These findings indicate that interventions to improve confidence and independence on return to the community should be individually tailored for specific concerns and circumstances.

The main limitation of this study was few participants, restricting generalisability of findings. However, as no new themes emerged in later interviews, data saturation had been reached.

Further research related to falls prevention discharge strategies should include:

- A process for ensuring comprehensive assessment of falls risk factors in older people, before returning home from hospital or, alternatively, closer liaison with primary healthcare services as mandated through the Primary Care Partnerships.
- Critical evaluation of the type of falls prevention information (verbal and written) and the timing of information delivery to older people, including delivery of information in the post-discharge period through primary healthcare services.
- Increased awareness in older people and their families of the importance of falls and potential management strategies to reduce likelihood of future falls, including implementation of falls prevention guidelines by primary healthcare practitioners, noting the challenges of an older person-initiated model.

## Conclusion

Falls prevention discharge strategies have some crucial gaps. Falls commonly recur post-discharge, with quality of life and functional capacity also deteriorating. The ultimate aim of falls prevention in this context is to prevent recurrence of a fall or, at the very least, avert an injurious fall. Older people are often unaware of falls prevention strategies, or feel that suggested strategies are not for them. Primary healthcare services are critical players in ensuring the needs and preferences of older people related to post-discharge falls prevention are met.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

## Acknowledgements

This work was supported by Perpetual Trusts (Ian Rollo Currie Estate Foundation, Isobel Hill Brown and Ethel Herman Charitable Trusts).

## References

- Australian Institute of Health and Welfare (2014) Australia's health. Australia's health series number 14. Catalogue number AUS 178. AIHW, Canberra, ACT, Australia.
- Beuscher L, Grando V (2009) Challenges in conducting qualitative research with individuals with dementia. *Research in Gerontological Nursing* 2(1), 6–11. doi:10.3928/19404921-20090101-04
- Creswell J, Plano Clark V (2011) 'Designing and Conducting Mixed Methods Research.' (SAGE Publications: Thousand Oaks, CA, USA)
- Day L, Donaldson A, Thompson C, Thomas M (2014) Integrating proven falls prevention interventions into government programs. *Australian and New Zealand Journal of Public Health* 38, 122–127. doi:10.1111/1753-6405.12140
- Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J, Seeman T, Tracy R, Kop W, Burke G, Mcburnie MA (2001) Frailty in older adults: evidence for a phenotype. *Journal of Gerontology – A. Biological Sciences and Medical Sciences* 56(3), M146–M157. doi:10.1093/gerona/56.3.M146
- Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson L, Lamb SE (2012) Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews* 2012(9), CD007146.
- Goodwin V, Jones-Hughes T, Thompson-Coon J, Boddy K, Stein K (2011) Implementing the evidence for preventing falls among community-dwelling older people: a systematic review. *Journal of Safety Research* 42, 443–451. doi:10.1016/j.jsr.2011.07.008
- Guideline Adaptation Committee (2016) 'Clinical Practice Guidelines and Principles of Care for People with Dementia.' (Guideline Adaptation Committee: Sydney, NSW, Australia)
- Haines TP, Day L, Hill KD, Clemson L, Finch C (2014) 'Better for others than me': a belief that should shape our efforts to promote participation in falls prevention strategies. *Archives of Gerontology and Geriatrics* 59(1), 136–144. doi:10.1016/j.archger.2014.03.003
- Hill A-M, Hoffmann T, Mcphail S, Beer C, Hill K, Oliver D, Brauer S, Haines T (2011a) Evaluation of the sustained effect of inpatient falls prevention education and predictors of falls after hospital discharge—follow-up to a randomized controlled trial. *Journal of Gerontology – A. Biological Sciences and Medical Sciences* 66, 1001–1012. doi:10.1093/gerona/66.10.1001
- Hill A-M, Hoffmann T, Beer C, Mcphail S, Hill KD, Oliver D, Brauer SG, Haines TP (2011b) Falls after discharge from hospital: is there a gap between older peoples' knowledge about falls prevention strategies and the research evidence? *The Gerontologist* 51, 653–662. doi:10.1093/geront/gnr052
- Hill KD, Wee R (2012) Psychotropic drug-induced falls in older people: a review of interventions aimed at reducing the problem. *Drugs & Aging* 29(1), 15–30. doi:10.2165/11598420-000000000-00000
- McKay C, Anderson KE (2010) How to manage falls in community dwelling older adults: a review of the evidence. *Postgraduate Medical Journal* 86, 299–306. doi:10.1136/pgmj.2009.093468
- Miles M, Huberman A, Saldana J (2014) 'Qualitative Data Analysis: a Methods Sourcebook.' (SAGE Publications: Thousand Oaks, CA, USA)
- Milisen K, Dejaeger E, Braes T, Dierickx K, De Bondt K, Smeulders W, Teughels S, Pelemans W, Boonen S (2006) Process evaluation of a nurse-led multifactorial intervention protocol for risk screening and assessment of fall problems among community-dwelling older persons: a pilot-study. *The Journal of Nutrition, Health & Aging* 10(5), 446–452.
- Panel on Prevention of Falls in Older Persons American Geriatrics Society British Geriatrics Society (2011) Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. *Journal of the American Geriatrics Society* 59(1), 148–157. doi:10.1111/j.1532-5415.2010.03234.x
- Richardson J, Khan M, Chen G, Iezzi A, Maxwell A (2012) Population norms and Australian profile using the Assessment of Quality of Life (AQoL)

- 8D utility instrument. Centre for Health Economics Research Paper 2012 (72). (Monash University: Melbourne, Vic., Australia) Available at <http://www.aqol.com.au/documents/AQoL-8D/researchpaper72.pdf> [Verified October 2015]
- Rubenstein LZ, Josephson KR (2006) Falls and their prevention in elderly people: what does the evidence show? *The Medical Clinics of North America* **90**, 807–824. doi:10.1016/j.mcna.2006.05.013
- Russell MA, Hill KD, Blackberry I, Day LM, Dharmage SC (2008) The reliability and predictive accuracy of the falls risk for older people in the community assessment (FROP-Com) tool. *Age and Ageing* **37**, 634–639. doi:10.1093/ageing/afn129
- Russell MA, Hill KD, Day LM, Blackberry I, Schwartz J, Giummarra MJ, Dorevitch M, Ibrahim JE, Dalton AC, Dharmage SC (2010) A randomized controlled trial of a multifactorial falls prevention intervention for older fallers presenting to emergency departments. *Journal of the American Geriatrics Society* **58**(12), 2265–2274. doi:10.1111/j.1532-5415.2010.03191.x
- Shaw FE (2007) Prevention of falls in older people with dementia. *Journal of Neural Transmission* **114**, 1259–1264. doi:10.1007/s00702-007-0741-5
- Sherrington C, Tiedemann A, Fairhall N, Close JC, Lord SR (2011) Exercise to prevent falls in older adults: an updated meta-analysis and best practice recommendations. *NSW Public Health Bulletin* **22**(3–4), 78–83. doi:10.1071/NB10056
- Strauss A, Corbin J (2008) 'Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.' (SAGE Publishing; Thousand Oaks, CA, USA)
- Tinetti ME, Speechley KN, Ginter SF (1988) Risk factors for falls among elderly persons living in the community. *The New England Journal of Medicine* **319**, 1701–1707. doi:10.1056/NEJM198812293192604
- Tinetti ME, Gordon C, Sogolow E, Lapin P, Bradley EH (2006) Fall-risk evaluation and management: challenges in adopting geriatric care practices. *The Gerontologist* **46**, 717–725. doi:10.1093/geront/46.6.717
- Wallace M, Shelkey M (2008) Reliability and validity of Katz ADL Index. *The American Journal of Nursing* **108**(4). doi:10.1097/01.NAJ.0000315266.66521.e7
- Yardley L, Beyer N, Hauer K, Kempen G, Piot-Ziegler C, Todd C (2005) Development and initial validation of the Falls Efficacy Scale-International (FES-I). *Age and Ageing* **34**, 614–619. doi:10.1093/ageing/afi196
- Zijlstra GAR, Van Haastregt JCM, Van Rossum E, Van Eijk JTM, Yardley L, Kempen GIJM (2007) Interventions to reduce fear of falling in community-living older people: a systematic review. *Journal of the American Geriatrics Society* **55**(4), 603–615. doi:10.1111/j.1532-5415.2007.01148.x