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For Falls Sake: Older Carers' Perceptions of Falls and Falls Risk Factors

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Abstract

Purpose: Older carers play an important role in falls prevention through their influence over their dependent's actions and by their own behaviour. This study aimed to determine the perceptions of falls and fall-related risk factors by older carers in an Australian metropolitan community to inform the development of effective falls prevention strategies in this population. **Method:** A questionnaire was mailed to all members of a carers group in January 2003 and responses from carers aged 60 years or above were included in the study (n=121). **Results:** The majority of older carers (85%) understood that falls are a problem for their age group and that falls can be prevented (74%). Poor pavement maintenance and balance problems were rated as the most important risk factors for falls. The importance of unsafe behaviour as a falls risk was undervalued. The majority of respondents (74%) indicated they would talk to their doctor if they were concerned about falling. **Conclusions and Recommendations:** The results of this study indicate that older carers in a metropolitan community acknowledge falls are both important and preventable. The awareness of unsafe behaviour as a falls risk factor needs to be raised. Health professionals are trusted by older carers and should discuss falls prevention strategies with both the older patient and their carer. The next stage is to explore if older carers understand how they can reduce the risk of falling for themselves and their dependents, and how to effectively engage and enable older carers to do this successfully.

Introduction

Falls are a significant problem for aging communities. Approximately 1 in 3 people over the age of 65 years living in the community fall each year and nearly 50% of all fall injuries occur in elderly adults.^{1,2} Personal consequences of falls include physical injuries, psychological trauma, functional impairments, loss of independence, and death.³⁻⁵ In the western world, the cost of falls to the health care systems are large. The total Australian Health cost attributable to falls is estimated to increase to \$AUS1375 million per annum by the year 2051.⁶ Australia is not alone in this problem; published studies from other developed countries reflect similar ageing demographics and fall-related costs. In 1999, emergency and hospital care for fall related injuries among people aged over 60 cost the United

Kingdom almost £1 billion.⁷ The direct medical costs of falls for people aged over 65 in the United States in 2000 totalled \$(US)19.2 billion.⁸ While government and health sectors recognise the potential burden of falls there is little information in the literature about older peoples' perceptions of falls so that prevention strategies can be focused in an appropriate and effective manner to the target group.

Braun developed a self-administered questionnaire to measure the perception of factors most likely to contribute to a fall by an elderly respondent or in the general elderly population. She surveyed 120 older people living independently in a rural community in the USA and found that while older people did consider falls to be preventable

and did understand the importance of fall-related risk factors to the older population, they minimised their own susceptibility to falling.⁹ Braun reported that falls risk factors were rated of higher importance by older people who also considered falls to be an important health problem, compared to those who did not. While Braun's questionnaire was developed using focus groups of independent older adults, no further validity and reliability assessments have been reported. However, no further tools to specifically measure the perceptions of falls have been found by our research group.

Many older people are carers for others, often for disabled or frail-aged dependents who have a high falls risk. In 2003, more than 113,000 Australians aged 65 years or older were primary carers for a disabled or frail-aged person; most were caring for a spouse.¹⁰ The fear of a dependent person falling and the consequences if they do fall can have a major impact on the life of a carer; an increase in dependency may occur and the carer may become unwilling to leave the dependent alone.^{11,12} Carers of older people, through their caring role, have an important role to play in falls prevention because they are trusted sources of information and they are in a position to negotiate and engage the older person in risk reduction strategies or initiate methods of control to protect their dependents from harm.^{11,13,14} Older carers are also likely to be caring for older people with significant physical or mental impairments who are at a higher risk of falls, for example stroke and dementia.^{15,16} For this reason, it is important that the perceptions of falls and fall-risk factors by carers of the aged are known to effectively engage them in falls prevention actions for their dependents. So far this area has been sparsely researched.

Buri and Dawson conducted unstructured interviews with six carers of people with dementia to determine the meaning of the risk of falls in elderly persons with dementia from the view of the carer. They found that the carers viewed falls as important but unpredictable events and that their hypotheses and conclusions about the cause and prevention of falls were often in conflict with health professionals.¹¹ The carers of people with dementia sought to prevent falls by maintaining order and exercising control over all their dependent's actions, often increasing dependency and risks for the care recipient. The insight provided by Buri and Dawson's study is limited by the small sample they interviewed and low relevance to carers of people without cognitive impairment. Liddle and Gilleard investigated the emotional consequences of falls for 42 informal carers following hospitalisation of the person dependent on their care after a fall. Using semi-structured interviews, they measured carer distress associated with fall events to be high but did not explore perceptions of fall etiology and found no relationship between levels of carer distress and limitation of the care recipient's mobility at

home or into the community.^{11,17}

Not only do older carers look after people with high falls risk, they may be at risk of falling themselves. Older carers have been shown to have poorer physical health than non-caregivers of their age group and therefore are likely to be at greater falls risk.^{16,18} A fall-related injury to a person in a carer role has significant personal consequences not just for the injured carer but also for the person dependent on their care. As our population ages, the health care system will become increasingly reliant on older carers and their health care needs should be a concern for all health professionals and public health strategists.¹⁶ Health professionals in contact with care recipients are ideally situated to promote personal falls prevention behaviours to the person providing care.¹⁹ Yet, despite the significant problem of falls and the importance of targeting older carers in falls prevention strategies, we found the knowledge and perceptions of falls and falls risk factors by older carers in the community are unknown. This gap in knowledge limits the development of appropriate and focused interventions to prevent falls in this population. Therefore, in a group of older people who were carers, this study aimed to 1) assess their perceptions of falls, and 2) determine their perceived importance of fall-related risk factors.

Method

This study was approved by the Human Research Ethics Committees of the University of South Australia and the North Western Adelaide Health Service and conformed to the provisions of the Declaration of Helsinki (as revised in Edinburgh 2000).

Participants

The participants in this study were carers aged 60 years or over living in the western metropolitan region of Adelaide who were members of the local division of Carers SA, a non-profit incorporated community-based organisation representing carers living in the community. Participants received the questionnaire via a quarterly newsletter from the western metropolitan division of Carers SA. To restrict questionnaire return to the desired participant group a highlighted statement at the top of the questionnaire asked 'If you are over 60 years, please spend a couple of minutes answering these questions' (Appendix 1).

Procedure

This study was part of the Stay on Your Feet – Adelaide West project, a community demonstration project undertaken between March 2002 and March 2005, and funded by the Australian Government Department of Health and Ageing through the National Falls Prevention for Older People Initiative. The survey was conducted as a baseline measure of community perceptions prior to project intervention.

Six hundred questionnaires with reply paid envelopes were included as an insert in the quarterly newsletter of the Western Carers Association in January 2003. The survey was anonymous and voluntary.

The self-completed questionnaire used for the survey (Appendix I) was adapted from that used by Braun.⁹ Two experienced researchers in the area of falls and falls prevention reviewed Braun's questionnaire and excluded a number of the original questions to reduce the length of the questionnaire to two pages. This was done to make the questionnaire less daunting for older carers to complete and aimed to increase the potential response rate. Questions were also reviewed in light of meeting the aims of our study. Excluded questions were related to further demographic information, environmental conditions not relevant to this community e.g. snow, osteoporosis knowledge, and fear of falling. The questions that were retained included questions about participants falls history, the importance of falls as a health concern, the likely consequences of a fall, factors they considered most likely to cause a fall, if falls can be prevented and who they would talk to about their falls concern. Six weeks was allowed for survey return and all surveys returned within that time were accepted for analysis. Those who returned their questionnaire within the allocated time were given the option of being entered into a draw for a prize. To be eligible for the prize draw, respondents included a separate slip with their name and address in the return envelope

with the questionnaire. An administration officer opened all the returned envelopes and removed the identifying slips before forwarding the questionnaires to our project team for analysis.

Data analysis

Returned questionnaires were excluded if the respondent was less than 60 years of age. As the distributions of data from the rating scales were highly skewed, nonparametric statistical tests (chi square and Mann-Whitney U) were employed for group analyses. In all analyses, a significance level of $p \leq 0.05$ was used. All data management and analyses were performed using SPSS version 10.0.

Results

A response rate of 20% was achieved (121 returned from older carers, 600 questionnaires sent out). It should be noted that we were unable to target older carers when we sent out the questionnaire so many questionnaires may have gone to people were younger and therefore ineligible to participate in the study. All questionnaires were included in the analysis irrespective of number of questions answered. Therefore, there were a number of questions that had missing data, particularly the question, "Who would you talk to if you were concerned about falling?" (15/121 or 12.3% "no responses"). There were no more than 6% "no responses" on any other question.

Table 1: Summary of responses to questionnaire items relating to personal characteristics and falls as a health concern (n = number of valid responses)

Median age (years), (25 th - 75 th percentiles)	75 (65-80) n = 119
Gender, female	70%, 83/119
Falls in past 6 months (yes)	42%, 50/119
Injury from fall in past 6 months (yes)	24%, 28/119
Medical condition that may contribute to falls (yes)	34%, 40/117
Falls are a concern for age group (yes)	85%, 100/117
Importance of falls for respondent compared to their other health concerns* median (25 th - 75 th percentiles)	7.0 (5.0-10.0) n = 118
Likelihood of serious injury to respondent if fell hard** median (25 th - 75 th percentiles)	7.0 (5.0-9.0) n = 117
Likelihood of respondent returning to current dwelling if fell hard**, median (25 th - 75 th percentiles)	7.0 (5.0-10.0) n = 115
Can falls be prevented? (yes)	74%, 84/114

*rating on a 10 item scale of importance, where 0 = "not at all important" to 10 = "most important"

**rating on a 10 item scale of likelihood, where 0 = "not at all likely" to 10 = "most likely"

The median age of carers who responded to the survey was 75 years and the majority were female (Table 1). Alarming, nearly half the respondents had fallen in the previous 6 months with a quarter of these falls resulting in injury (Table 1). It was not surprising that the respondents who indicated they had a medical condition that may

increase their risk of falling reported a significantly greater number of falls in the previous six months compared to those who reported no contributing medical condition (χ^2 , $p = 0.02$).

Most carers who responded (85%) considered falls a

concern for their age group (Table 1), with the proportion who indicated falls were a major concern significantly associated with age (χ^2 , $p = 0.01$). Younger carers were less likely to consider falls a major concern. Respondents rated the importance of falls compared with other health concerns a median of 7/10, where 0 meant "not at all important" and 10 meant "most important" (Table 1). It was encouraging to note that 74% of the surveyed carers indicated that falls can be prevented (Table 1).

Surveyed carers understood that falls may result in serious

injury and that this may impact on living arrangements. The likelihood of a serious injury should the respondent "fall hard" was rated a median of 7/10 where 0 meant "not at all likely" and 10 meant "most likely." The likelihood of being able to return to their current living situation after a serious fall and injury was also rated a median of 7/10 by respondents. There was a significant association between the likelihood of returning to current living situation and age (χ^2 , $p = 0.05$). Those carers who had higher ratings for likelihood to return to their current living situation were more likely to be younger.

Table 2: Respondents' rating of the importance of different factors in causing falls among people their age on a 10 item scale of importance from 0 = "not at all important" to 10 = "most important."

Falls Risk factors	Mean rating (range)
Environmental factors	
rugs, furniture, and stairs (range 0-10, n=119)	8.0 (5.0-10.0)
streets and pavements are poorly maintained (range 0-10, n=120)	9.0 (8.0-10.0)
Combined "Environmental factors" (range 0-20)	16.0 (14.0-20.0)
Sensory motor	
a coordination or balance problem (range 0-10, n=120)	9.0 (6.0-10.0)
not enough muscle strength or endurance (range 0-10, n=119)	8.0 (5.0-10.0)
poor vision (range 0-10, n=120)	8.0 (5.0-10.0)
Combined "Sensory motor factors" (range 0-30)	23.0 (18.0-30.0)
Psychological (behavioural) factors	
doing unsafe or risky things (range 0-10, n=120)	6.5 (5.0-9.0)
not paying attention (range 0-10, n=120)	7.0 (5.0-9.0)
confused or mentally impaired (range 0-10, n=117)	7.0 (5.0-10.0)
Combined "Psychological factors" (range 0-30)	20.0 (14.0-26.0)

Surveyed carers also appreciated that a number of factors may increase the risk of falls, with "streets and pavements are poorly maintained" and "a coordination or balance problem" rated as the most important risk factors among people of their own age group (Table 2). Female respondents rated "streets and pavements are poorly maintained" of higher importance compared to male respondents (MWU, $p = 0.04$). "Doing unsafe or risky things" was rated least important for falls risk. All other falls risk factors were rated of moderate importance. When the perceived risk factors were grouped into three categories

"Environmental factors," "Sensory motor factors," and "Psychological factors" (Table 2), to determine discrete ratings of perceived importance as suggested by Braun, carers who considered falls to be an important concern for their age group rated the risk factor categories of "Sensory motor" and "Psychological" significantly more important than those carers who did not consider falls a major concern (Table 3). It is noted that this comparison of risk factor categories involved respondent groups of different size and, as such, the results should be interpreted with caution.

Table 3: Differences in Risk Factor rating, on a 10 item scale of importance, between respondents who thought falls were a concern for their age group and respondents who did not think falls were a major concern.

	Falls a concern $n = 100$ Median (25 th /75 th percentiles)	Falls not a concern $n = 17$ Median (25 th /75 th percentiles)	MWU U value	p
Environmental factors (range 0-20)	16.0 (14.0/20.0)	15.5 (6.5/17.75)	592.5	0.10
Sensory motor factors (range 0-30)	25.0 (19.0/30.0)	16.0 (8.5/19.0)	282.5	0.00*
Psychological factors (range 0-30)	20.0 (15.0/27.0)	15.0 (12.0/20.0)	445.0	0.01*

A doctor was nominated, by the majority of responding carers (74%, n=121), as the person they would talk to if they were concerned about falling. Health workers (12.4%), family/carer/friends (14.9%), and others (4.1%) were also nominated. "Others" included the Western Carers Association, Independent Living Centre, Red Cross, and the local council.

Discussion

It was pleasing that the majority of carers who were surveyed recognised falls as a problem for their age group (85%) and most (74%) believed that falls could be prevented. This level of awareness of the issue of falls is comparable to the results of Braun's American community study (falls are a problem 87%, falls can be prevented 81%) and a small study of American community dwellers and long-term care residents (falls can be prevented 77%).^{9, 20} The survey results can be used by planners of falls prevention initiatives to focus their strategies for older carers towards building on existing falls awareness and initiating action. Despite the good awareness shown, the incidence of falls in the preceding six months among the respondent older carers (42%) was greater than the widely reported 30% over 12 months and may be explained by at least 34% of our respondents reporting medical conditions contributing to falls. This level of frailty was expected given that older carers have been shown to have poorer physical health than non-caregivers of their age group.^{16, 18} The significantly higher proportion of fallers among those carers who indicated they had a medical condition that may increase their risk of falling is consistent with Gill et al's finding that older people who rated their health as fair or poor were more likely to have fallen.²¹ These results confirm that falls are a significant health issue for this population and that older carers with existing medical conditions known to contribute to falls should be considered an "at risk" group and prioritised in falls prevention interventions.

Respondents rated the level of importance of all the nominated risks factors for falling above 6/10, suggesting the older carers understood that a range of environmental, sensorimotor or psychological factors may contribute to themselves or their dependent falling. In particular, "streets and pavements are poorly maintained" rated as an important factor in causing falls among older people (Table 2). Braun, using the same question, also found this factor to rate highly.⁹ A number of other studies have reported uneven pavements or public areas to be frequently cited extrinsic precipitators of falls.^{4, 13, 22, 23} Given the frequency of identification of this issue by older people, it warrants greater attention in falls prevention interventions to both validate the concerns of older people and to include planners of the built environment, and those involved in its

maintenance, in developing strategies to prevent falls in the community.^{22, 24}

As well as pavement maintenance, "a coordination or balance problem" was rated an important risk factor for falls by older carers. This concurs with previous falls research, indicating that it is difficult to attribute falls to any one factor and that falls may result from an interaction between environmental hazards and physical limitations.^{12, 16} The recognition by older carers of the importance of balance in fall etiology suggests that balance program interventions conducted at home or within a clinic setting may be an acceptable falls intervention for this population. It was interesting to note that the surveyed carers underrated the role of behaviour as a cause of falls, with "doing unsafe or risky things" rated the least important of the nominated risk factors. This reluctance to personalise falls risk has also been reported in the general elderly population.⁴ For carers, the reluctance to prioritise behavioural risk factors may relate to their experience of caring for an older person where environmental and physical risks are easier to identify and control than challenging behaviours. It may also reflect a self-belief by older carers that they would not be unsafe in their actions or allow their dependent to be unsafe. This is an interesting finding and highlights an area of falls risk that warrants further investigation in this population. Falls intervention strategies for older carers should address the understanding and acceptance of unsafe behaviour as a falls risk factor by carers.

Survey results showed that carers who are aware that falls are a problem rate sensory motor and psychological risk factors more highly than those carers who did not consider falls a major concern. It may be that if people are aware that falls are a problem, they are also aware of the multitude of factors that may cause a fall, either because the carers have had an experience of falls by themselves or their dependant, or that these carers have assimilated public education messages or the advice of health professionals concerning falls. It highlights the importance of not only raising the issue of falls as a priority concern for all older carers, but ensuring comprehensive risk factor and prevention information is also communicated.

As with other studies of the elderly, older carers were most likely to talk to their local doctor about falls.^{4, 12, 25} This fact reinforces the need for community falls prevention strategies to actively engage medical practitioners in identifying older carers and their dependents at risk of falling, providing information to all older carers about reducing falls risk, and referring high risk fallers to appropriate services. Preliminary evidence supports that health promotion messages given by general practitioners results in behaviour change.³ Other health professionals and family members were also nominated in this survey as

people for older carers to talk to, and their role in supporting an older carer to take falls prevention action should not be underestimated. Buri and Dawson suggest health professionals should initiate a collaborative approach when advising carers about coping with falls risk.¹¹

There were a number of limitations to this study. The response rate was only 20%. Snodgrass and Rivett reported a similar response rate (24%) when surveying community-dwelling older people about their perceptions of falls prevention services and O'Connell et al reported a 36% response rate to a postal survey of carers when only carers in the correct age range were targeted.^{16,25} It was not possible to specifically select people on the local Carers SA organisation's mailing list who were carers, because while the majority of members are individual care givers living in the community, service providers or organisations with an interest in supporting carers also receive the Carers SA newsletters. Nor was it possible to specifically select people over 60 years of age, and so an unknown percentage of people would not have responded because they were not a carer or not in the requested age range. In addition, carers have busy and stressful lives, and it is likely that potential respondents failed to return the questionnaire simply because of time constraints.^{16,26,27} It is possible that those who responded had a particular interest in falls, either because they had fallen personally or the

person they were caring for had fallen, and so the respondent group may not be representative of all older carers.

Conclusion

Older carers play an important role in falls prevention due to their relationship with often frail, older dependents and as older people at risk themselves. The results of this study indicate that older carers in a metropolitan community acknowledge falls are both important and preventable. The high reported falls rate suggests falls prevention strategies for older carers need to be focused towards building on existing falls awareness, including the recognition of unsafe behaviour as a falls risk, and initiating action. Prioritising older carers with existing medical conditions in falls prevention interventions and addressing the safety of public areas are suggested strategies. As trusted sources of information, doctors and other health professionals should be encouraged to provide comprehensive falls prevention information in waiting rooms and to discuss falls prevention strategies with both the older patient and their carer.

The next stage is to explore if older carers understand how they can reduce the risk of falling for themselves and their dependent, and how health and aged care workers can most effectively engage and enable older carers to do this successfully.

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Appendix I Self-completed questionnaire adapted from that used by Braun (1998).

If you are over 60 years, please spend a couple of minutes answering these questions.

1. Please indicate your age

- 60-65 65-70 70-75 75-80 80-85 85-90 90+

2. Are you:

- male or female ?

3. Have you fallen within the last 6 months?

- Yes No

4. If Yes, did you injure yourself in a fall in the past 6 months?

- Yes No

5. Do you have a medical condition that makes you more likely to fall than others your age?

- Yes No

6. Is falling a major concern for people in your age group?

- Yes No

7. On a scale from 0 to 10, where 0 means "not at all important" and 10 means "most important"

How important is falling compared with your other health concerns?

- 0 1 2 3 4 5 6 7 8 9 10

8. On a scale of 0 to 10, where 0 means "not at all likely" and 10 means "most likely"

If you fell hard, how likely would you be to seriously injure yourself?

- 0 1 2 3 4 5 6 7 8 9 10

9. On a scale of 0 to 10, where 0 means "not at all likely" and 10 means "most likely"

If you fell and seriously injured yourself, how likely would you be to return to your current living situation?

- 0 1 2 3 4 5 6 7 8 9 10

10. Can falls among people in your age group be prevented?

- Yes No

For each of the next 8 items, please describe the importance of each item in causing falls among people in your age, by ticking a box:

11. They fall because things such as rugs, furniture and stairs get in the way...

- 0 1 2 3 4 5 6 7 8 9 10

Not at all important

Most important

12. They fall because things such as streets and pavements are poorly maintained

(eg cracked or irregular pavement, inadequate street markings)

- 0 1 2 3 4 5 6 7 8 9 10

Not at all important

Most important

13. They fall because they have a coordination or balance problem <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
14. They falls because they do not have enough muscle strength or endurance <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
15. They fall because they have poor vision <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
16. They fall because they are doing unsafe or risky things <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
17. They fall because they are not paying attention <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
18. They fall because they are confused or are mentally impaired <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 Not at all important Most important
19. Who would you talk to if you were concerned about falling?