Title: Community peer-led falls prevention presentations: What do the experts suggest?

Article Type: Original Research

Keywords: Aged; Accidental falls; Community health education; Peer groups; Expert opinion.

Source Title

Abstract

Falls among older adults are a major problem. Despite considerable progress in falls prevention research, older adults often show low motivation to engage in recommended preventive strategies. Peer-led falls prevention education for older adults may have potential for bridging the research evidence-practice gap, thereby promoting the uptake of falls prevention strategies. We evaluated peer educators' presentations of falls prevention education to community-dwelling older adults in regard to established criteria that were consistent with adult learning principles, the framework of health behaviour change, falls prevention guidelines, and recommendations for providing falls prevention information. We conducted a within-stage mixed model study using purposive and snowball sampling techniques to recruit 10 experts to evaluate video recordings of the delivery of three peer-led falls prevention presentations. Each expert viewed three videos and rated them using an open-ended and closed questionnaire. There was a good level of expert agreement across the questionnaire domains. Though the experts rated some aspects of the presentations highly, they thought that the presentations were mainly didactic in delivery, not consistently personally relevant to the older adult audience, and did not encourage older adults to engage in the preventive strategies that were presented. Based on the experts' findings, we developed five key themes and recommendations for the effective delivery of peer-led falls prevention presentations. These included recommending that peer educators share falls prevention messages in a more interactive and experiential manner and that uptake of strategies should be facilitated by encouraging the older adults to develop a personalised action plan. Findings suggest that if peer-led falls prevention presentations capitalise on older adults' capability, opportunity, and motivation, the older adults may be more receptive to take up falls prevention messages.

Introduction

Falls remain a major problem in Australia, where over 1.3 million hospital patient days were recorded in 2009-2010 for falls-related admissions (AIHW: Bradley, 2013). While there is strong evidence for effective interventions that can prevent falls, older adults have exhibited a low uptake of falls prevention strategies (Gillespie et al., 2012; Haines, Day, Hill, Clemson, & Finch, 2014; Hill et al., 2011a). Therefore, the translation of falls prevention research evidence into practice is crucial as a means to reduce the personal and financial burden of falls.

Peer-led education is a recommended strategy for bridging the research evidence-practice divide (Peel & Warburton, 2009). This strategy usually involves sharing information by trained and/or appropriately experienced peers of a similar age to participants (Shiner, 1999). A systematic review of 17 studies (7442 participants) found that providing peer education resulted in positive health outcomes for the recipients (Foster, Taylor, Eldridge, Ramsay, & Griffiths, 2007). Community-based peer-led falls prevention exercise classes for older adults have been shown to facilitate sustained participation in falls prevention exercise programs (Wurzer, Waters, Hale, & Leon de la Barra, 2014), but the efficacy of falls prevention education interventions for reducing falls has not been clearly established (Gillespie et al., 2012).

Providing health education via falls prevention programs does not automatically translate to health behaviour change (Conner & Norman, 2005). Studies have recommended the provision of positively targeted messages and personalised falls risk information during education sessions to bridge this gap (Dollard, Barton, Newbury, & Turnbull, 2012; Haines et al., 2014; Hill et al., 2011b; Yardley et al., 2007). A recent health-related peer education study found that integration of adult learning principles into programs, coupled with

behaviour change strategies, promoted general empowerment among community-dwelling older adults (Klein, Ritchie, Nathan, & Wutzke, 2014). However, this study did not address falls prevention education. A small number of studies specifically investigating falls prevention peer-led presentations and education have reported no significant impact on falls reduction attributable to these studies' interventions (Allen, 2004; Deery, Day, & Fildes, 2000; Robson, Edwards, Gallagher, & Baker, 2003). However, we note that these interventions were not designed specifically with adult learning principles or behaviour change imperatives in mind. The addition of key adult learning principles, including fostering the individual's motivation to learn; engendering personal relevance with the messages presented; drawing on the individual's relevant prior experience; and facilitating their participation and interaction during the presentation, could promote greater engagement with the health-related message (Merriam & Bierema, 2014). A recent behavioural theory has identified key influences on promoting health behaviour change such as engagement in falls prevention behaviours, namely, capability, opportunity, and motivation (Michie, van Stralen, & West, 2011). This theory proposes that the likelihood for behaviour change is influenced by factors such as whether the older adults possess the relevant knowledge and skills (capability), whether they have social support or access including time and money (opportunity), and whether they have the emotive or thought processes (motivation) to engage in falls prevention behaviours (Michie et al., 2011). We hypothesised that adopting these theoretical principles in any investigation of adult learning vis-a-vis falls prevention could yield a significantly different outcome in terms of bridging the research evidence-practice divide.

The aim of our study was to evaluate peer educators' presentations of falls prevention education sessions in regard to stipulated criteria relating to adult learning principles. We undertook this within the framework of falls prevention guidelines and current

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recommendations for providing falls prevention information to older adults (Dollard et al., 2012; Haines et al., 2014; Hill et al., 2011b; Yardley et al., 2007). We harnessed expert opinion to evaluate peer-led presentations and to advise on the future development of such presentations for community-dwelling older adults.

Methods

Design

Three experienced peer educators conducted three falls prevention peer education presentations that we videotaped. Subsequently, a group of content-relevant experts evaluated these presentations independently by using a self-administered questionnaire that we developed for this purpose. We conducted a within-stage mixed-model study design (Johnson & Onwuegbuzie, 2004, p. 20), which we based on the use of a questionnaire containing both open- and closed-ended items to obtain data. The University of Notre Dame Australia's ethics committee provided approval for the study. The expert reviewers and those peer educators whom we videoed provided written informed consent to participate in the study.

Setting and participant sample selection

At the time of the research in June 2014, a large not-for-profit organisation in the Perth metropolitan area provided one-hour falls prevention education and presentations to older adult groups in the community with the help of 11 volunteer peer educators. We invited three of these peer educators to be videotaped. This was a convenience sample insofar as we selected them because their presentations were already scheduled during the research timeframe. All three peer educators were retired older adults who had between three to 10 years' experience presenting as peer educators. One had health-related work experience while the other two had previous work experience that was non-health-related. All had

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previously undertaken a one-day training session conducted by the organisation (of approximately five hours duration), which included information on falls risk factors, falls prevention, and presentation training. They also received subsequent intermittent training updates from the organisation. All three peer educators agreed to participate by having their presentations videotaped.

A panel of expert reviewers evaluated the peer education sessions. The basis of the evaluation consisted of rating how well the sessions were conducted using a set of stipulated criteria relating to adult learning principles and behaviour change. These main criteria were: (1) encouraging the learners (the older adult audience) to be active participants in the learning process; (2) considering the learners' relevant prior falls prevention knowledge; (3) ensuring that the environment was conducive to adult learning; (4) providing for group interaction that facilitated peer learning; (5) delivering protocols or strategies used that were appropriate for adult learning; and (6) providing opportunities for reinforcement or further practice. Thirty item statements, which we present in Table 1, formed the criteria for the ratings. We tailored the wording of the criteria to the context of the study, that is, falls prevention. We calculated the a priori sample size estimate for the measurement of inter-rater reliability between the expert reviewers using a questionnaire devised for this purpose (see Table 1), and based this on an assumption that the minimal accepted level of reliability should not fall below 0.6 and that, ideally, the estimate of the reliability ought to be at least 0.8. Under these conditions, with an alpha level of 0.05 and power set to 80%, we required a total sample size of 10 expert participants. This procedure yielded 30 ratings (10 experts x 3 video presentations each).

[Insert Table 1 About Here]

Subsequently, we identified 19 experts from Australia and London (UK) with expertise in one or more of the areas of adult education, health promotion, falls prevention

and psychology, using purposive and snowballing sampling techniques. We then invited

prospective experts to participate as a reviewer in the study. Of the 10 experts who agreed to

participate, nine were from Australia and one from the UK. We established two criteria to

determine sufficient expertise. First was the possession of a relevant postgraduate academic

qualification, and second was current practice in one or more of the areas of adult education,

health promotion, falls prevention, and psychology. The expert reviewers had an average of

15 years' experience ($SD = 11$) in their area of expertise.

Methodology and Instrumentation

We used a within-stage mixed model design (Johnson & Onwuegbuzie, 2004, p. 20)

that incorporated a questionnaire designed to elicit both quantitative and qualitative data to

enrich the interpretation and to provide methodological triangulation to improve

trustworthiness of the findings (Guba & Lincoln, 1989; Johnson, Onwuegbuzie, & Turner,

2007; Liamputtong, 2013). We monitored the implementation of the study's methodology,

documented the instrumentation process, and devised an audit trail as part of ensuring

trustworthiness (dependability; Guba & Lincoln, 1989).

Quantitative

First, we identified and tailored for the study six key adult learning principles that we

based on relevant literature (Haines et al., 2014; Merriam & Bierema, 2014; Queensland

Occupational Therapy Fieldwork Collaborative, 2005; Trompf & Sale, 2001). Subsequently,

we structured a questionnaire into six corresponding adult learning domains forming the main

criteria as discussed earlier, each with item statements (Table 1). We then consulted a team

of four falls prevention experts prior to generating the final questionnaire (Table 1). This

team was also involved in conducting a pilot trial of the questionnaire to establish face

validity and to determine its content validity index (CVI), as per relevant literature (Lynn,

1986; Polit & Beck, 2006; Polit, Beck, & Owen, 2007). The results from the researchers who reviewed the scale in terms of content validity were an overall Scale-CVI of 0.96, meeting the acceptable level of $\geq$ 0.9 (Lynn, 1986). Each of the 30 items met the criterion of Item-CVI of 0.75-0.78 (Lynn, 1986). Consequently, none of the 30 item statements within the six domains needed to be removed.

Second, we directed the final panel of 10 expert reviewers (which did not include any of the four experts involved in the instrument validation process) to web-based video link recordings of three falls prevention presentations and asked them to view and evaluate them using the finalised questionnaire. We sent an information pack to each expert that contained documentation associated with the study and detailed notes about the review procedure. We then provided experts with reviewer training via a one-hour teleconference session with the primary researcher, or a one-on-one session for those who were unavailable for the teleconference. We explained the procedure in detail using a prepared training guide and provided an opportunity for the experts to clarify any issues they may have had. To facilitate member checking (Bygstad & Munkvold, 2007), we forwarded a written summary of the main points raised during the discussion at the teleconference to all the experts. We took these steps to enhance the trustworthiness (credibility and confirmability) of the study (Guba & Lincoln, 1989) by seeking consistency of the expert reviewers' understanding of the study and their subsequent ratings of the presentations using the questionnaire. Expert reviewers rated their responses to questionnaire items on a 5-point Likert scale (Strongly Agree; Agree; Undecided; Disagree; Strongly Disagree). We used Intraclass Correlation Coefficients (ICCs) to evaluate the consistency in the extent of agreement among the experts.

Qualitative

An open-ended item asked for any comments or suggestions at the end of each of the six domains of the questionnaire. All expert reviewers provided an overall evaluation summary of the presentations, based on their area of expertise. We also invited the experts to present feedback that included practical advice for enhancing the delivery of the peer-led falls prevention presentations. We then discussed and collated the feedback to provide a coherent compilation of practical recommendations.

Data Analysis

We used Stata IC 13 (StataCorp, 2013) for statistical analyses of quantitative data, with descriptive analysis of expert reviewers' responses relative to each item. We summarised items within each domain and presented the results as means and standard deviations, and evaluated the mean results from the ratings of all 10 experts for each domain for inter-rater reliability using the ICC (two-way random effects model, consistency of agreement) with 95% confidence intervals. ICC values of "more than 0.75 are considered indicative of good agreement and those below 0.75 of poor to moderate agreement" (Portney & Watkins, 2009, p. 595).

We imported responses from the open-ended items in the questionnaire together with the experts' overall evaluation summary to NVivo (Version 10 for Windows, QSR International Pty Ltd, 2012). We then analysed the qualitative data using thematic analysis (Miles, Huberman, & Saldana, 2014) to identify patterns or themes from the data. This analysis consisted of an iterative process of reflecting on the coding and identifying patterns. We used investigator triangulation to increase the trustworthiness of the findings by having two members of the research team conduct coding, data reduction and data analysis independently of each other (Lincoln & Guba, 1985; Miles et al., 2014). Subsequently, we explored differences in interpretations and then discussed and refined these with the

remainder of the research team until we reached consensus in identifying the final key themes. Finally, we used method triangulation as an additional approach to enhance the trustworthiness (credibility) of the findings (Guba & Lincoln, 1989), by triangulating the results of the qualitative with the quantitative data to reveal a greater understanding of the factors influencing effective delivery of peer-led falls prevention presentations.

Results and Discussion

Expert rating of the peer-led presentations

We present the six questionnaire domains in Table 1 and specify the median (interquartile range) ratings for each questionnaire item statement across the three videos viewed by the panel of experts.

Overall, the ICC for the panel of experts for Domains 1 to 5 ranged from 0.76 to 0.88 (see Table 2), which indicated very high levels of agreement. The experts rated Adult Learning Domain 3 (Environment that is conducive to adult learning) and Domain 6 (Opportunity provided for reinforcement via practice) highly, compared to Domain 4 (Group interaction that facilitates peer learning) which was the lowest in the rating scale (Table 2). For Domain 6 (Opportunity provided for reinforcement via practice), we were unable to estimate the ICC for all 10 expert reviewers because incongruence across ratings produced a negative ICC value. On closer inspection of the data, we found that three reviewers' ratings [$M = 3.74$ (SD 1.01)] for the three items in this domain were different from the other reviewers' ratings. The mean value of the seven remaining reviewers for Domain 6 was 3.98 (SD 0.79), and the ICC for Domain 6, when estimated for these seven reviewers, was 0.72 (95% CI 0.44, 0.99).

[Insert Table 2 About Here]

Key Themes

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We identified five key themes from the expert reviewers' feedback that they considered to facilitate effective delivery of peer-led falls prevention presentations. These are presented in the form of a conceptual framework (see Figure 1).

[Insert Figure 1 About Here]

Theme 1: Mode of Delivery.

The expert reviewers strongly agreed that there was little opportunity for exchange of views, discussion or reflection of the older adults' experiences about falls and falls prevention with their peers during the presentations. The experts agreed that group interaction (Domain 4: $M = 2.63$, ICC 0.79) was limited, and also agreed that the participants did not engage in peer dialogue (Domain 4's Item 20, $Mdn = 2$). The experts agreed that the didactic nature of the presentations meant that the audience most likely failed to engage with the key messages, given that effective falls prevention should be "largely experiential and personal" (Expert 9). Expert 5 indicated that "the presentation was weighted towards information provision rather than discussion." Expert 1 concurred: "Lecturing is a bona fide way of presenting information; however, research has shown that it is one of the least effective in terms of aiding retention."

The expert panel suggested that greater audience participation and interaction was needed. This was reflected in the lowest rating for "group interaction that facilitates peer learning" in Table 2. Experts 2 through 5 suggested that presenters should use a mix of open-ended or closed questions, or small-group discussions, to encourage active learning which is associated with improved retention of information (Prince, 2004). These experts seemed uncertain that active learning occurred (Domain 1: $M = 3.02$, ICC 0.76). Such strategies are congruent with facilitating adult learning (Merriam & Bierema, 2014). Expert 3 concluded

that interaction is highly recommended to establish interest and "to influence engagement and presentation effectiveness."

Besides interaction, experts recommended that scaffolding be used in presenting what would be covered during the session. Following Vygotsky (1978), scaffolding may be seen as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (p. 86). Such scaffolding might consist of identifying the objectives and the significance of falls prevention to the audience. Expert 6 indicated that such a strategy provides opportunity for the audience to ask clarifying questions and obtain further information before the content is presented, which is supported by previous research (Jaramillo, 1996; Pea, 2004). Additionally, Expert 4 suggested the inclusion of a structured format with a clear framework for the presentations. Similarly, Expert 9 recommended that each presentation should include a standardised introduction at the start and a lesson closure segment at the end. Experts 1, 3, 6 and 7 also stated that lesson closure, including reinforcement of the key take-home messages to spur the older adults to make an action checklist, is consistent with how adult learners achieve learning outcomes. Such suggestions are also supported by the literature (Merriam & Bierema, 2014).

Theme 2: Content of the presentations.

Expert 6 proposed using a common curriculum with associated resource material to ensure that presentations were consistent and unvarying. These resource materials would cover topics that could help "to make the audience more cognizant of the personal relevance of the information presented." As Expert 4 indicated, "So, it is not only about preventing

falls but improving your overall health, wellbeing and independence. Highlighting the broader benefits is important because some people may think falls aren't important to me."

The experts recommended that the presentations should include key falls prevention evidence, thus facilitating knowledge (capability). This is consistent with adult learning principles. For example, Merriam and Bierema (2014) suggested that educators consider drawing on an audience's prior knowledge about falls prevention as a form of motivation. Experts were undecided as to whether this had been achieved (Domain 2: $M = 3.08$, ICC 0.76). Several experts also suggested that peer experience and personal anecdotes could be used judiciously to stimulate motivation, encourage social support (opportunity), foster self-efficacy (capability), and enhance topic focus (Expert 1 and 4), which is consistent with the findings of previous research (Michie et al., 2013). Expert 6 proposed that using positive messages and highlighting personal benefits may appeal to older adults' preferred identities as "being physically competent and responsible."

Expert 1 also indicated that there was little to no discussion about the frequency or consequences of falls (Domain 2's Item 15, $Mdn = 1.5$). Other authors have similarly noted the importance of this aspect, and the use of a range of topics for evidence-based falls education (Evron, Schultz-Larsen, & Fristrup, 2009; Haines et al., 2014; Hill et al., 2011a; Yardley et al., 2007). Suggestions by the panel of experts for redress included: using statistics to show how commonly falls occur; discussing consequences and costs of falls; highlighting falls risk factors, emphasising the strategies that address falls risk factors; and discussing the reasons for and against taking measures to prevent falls (Expert 1, 4, 5 and 7). These suggestions for peer-led falls prevention presentations are consistent with other studies investigating older adults' preferences for receiving falls prevention information (Khong, Bulsara, Hill, & Hill, 2016; McInnes & Askie, 2004; Yardley et al., 2007).

The behaviour change literature (Michie et al., 2013) explains that addressing topics such as the ones cited encourages older adults to evaluate the perceived benefits of and barriers to engaging in falls prevention activities while at the same time assisting with developing motivation to change behaviour.

Theme 3: Transition of key messages with use of technology and resources.

Using multimedia resources (such as posters, a checklist, diagrams, demonstrations or kinesthetic stimuli) has been found to create an enriched learning experience (Spector, Merrill, Elen, & Bishop, 2014). Experts concurred, as reflected by their lower rating that demonstrated that they were unconvinced this was achieved (Domain 5: $M = 3.15$, ICC 0.82). Expert 1 stated that video "enhanced presentations" and could "keep attention levels high." The experts agreed that technology and resources should be used to facilitate the transition from research evidence to practice and that tailoring key falls prevention messages by linking video to their personal action checklist would be advantageous (Expert 10). In a related study, peer educators who delivered falls prevention groups presentations also recommended availability of resources to support presentations (Khong, Farringdon, Hill, & Hill, 2015).

Theme 4: Personalising the falls prevention message with an action plan.

The experts strongly agreed that provision of checklists would likely spur older adults to develop a personal action plan and concurred that this had happened (Domain 6's Item 29, $Mdn = 4.0$). However, the experts were limited to observing activities within the video-recording only and not any informal input that may have facilitated engagement beyond the recording time. Expert 6 stated that "It was a good idea to encourage participants to write down their ideas. It would have been good to follow this up with them to make a link between their insights and potential action." This suggestion may have been made because previous studies have found that older adults may not perceive falls prevention to be

personally relevant (Haines et al., 2014; Hill et al., 2011b). Therefore, individualised action plans could personalise the information, enhancing information relevance and the participants' motivation, and so potentially promote a change in their health behaviour (Michie et al., 2013; Noar, Benac, & Harris, 2007). Expert 7 reinforced that: "Information alone does not lead to behaviour change. Encourage the development of a personalised 'action list' to facilitate behaviour change…by asking them which strategies are you going to go away and action?" Expert 9 elaborated: "Talking through recently presented information helps to 'ground' these new data into participants' lived experiences, which in turn can facilitate adult learning through linking theory with experience."

Theme 5: Influence of the affective domain during presentations.

Experts agreed that attention to the affective domain is a characteristic that subsumed the other four domains. It is "a very powerful way to create a connection between the presenter, the audience and the material being presented" (Expert 10). The peer educators' warm and enthusiastic approach was shown to provide a positive learning environment. Despite conducting the review through a video-recording, the experts were still able to observe the peer educators' use of positive non-verbal language such as the use of their hands, smiles, use of participants' names, and eye contact as positive effects on learning (Expert 3 and 10). Expert 9 stated that,

> The presenter conveyed a pleasant, professional and personable
> approach to the issue of falls prevention. She was very well-spoken
> and used humour and anecdotes to establish rapport and trust with the
> audience. The audience responded to the presenter's approach and
> participated when asked to.

The expert reviewers provided the highest rating for the domain "environment that is conducive to adult learning" (Domain 3: $M = 4.07$, ICC 0.81). Expert 8 described the presentations as being held in a "warm inviting environment." The expert reviewers gave

broad endorsement of the importance of the affective domain. Kim and Pekrun (2014) have also affirmed the value of a comfortable place to share in discussion, to ask questions and to learn, as have Klein et al. (2014), in their research pertaining specifically to a health-related peer-led study.

In summarising the overall findings, experts advocated that the peer-led falls prevention presentations should be more interactive and experiential; content ought to focus on building capability and should be more consistently presented; the message ought to be made more personally relevant; and technology and resources should be used to greater advantage to facilitate translation of research evidence to practice. We conclude that such approaches are valuable in supporting older adults to actualise falls prevention strategies. Our findings are congruent with key theoretical influences on promoting behaviour change identified earlier (Michie et al., 2011).

The experts also made several practical recommendations about how delivery could be enhanced. These were collated as final recommendations and are presented in Table 3.

[Insert Table 3 About Here]

Limitations

This study has some limitations. We used a purposive sample of expert reviewers. Expert opinion or use of expertise has been considered the lowest level of evidence in the hierarchy of knowledge (Phillips et al., 2001) because expert opinion can vary over time (Vogt, 2011). Moreover, though the study had two criteria for classifying expert eligibility, the final panel of experts was dependent both on the use of snowballing sampling technique's chain of referral to recruit experts and on their availability to participate within the research timeframe (Faugier & Sargeant, 1997). However, we note that as there is limited empirical

evidence regarding community-based peer-led falls prevention presentations, there is merit in eliciting expert opinion, as suggested by Sackett and colleagues (1996).

The study's findings are context-specific and may not be generalisable to peer-led falls education programs in other settings within Australia or overseas. However, we agree with Guba and Lincoln (1989) that assessing generalisability remains the responsibility of others initiating peer-led falls prevention education.

Evaluating presentations through video recording has advantages and limitations compared to real-time observations (Bottorff, 1994). Video recording permits the simultaneous recording of all ongoing cues during the presentations for review, and experts can then view the recording repeatedly to evaluate different aspects of the presentations. However, the expert review appraisal is limited to watching an edited video-recording consisting mainly of the peer educator and presentation, with audio feedback from the audience. Some of the real-time ongoing dynamics of the presentations may have been too subtle to be evident on a positionally fixed video recording system. In such an environment, contextual cues beyond the recording, and participants' non-verbal communication cues, could not be observed.

Finally, although the questionnaire used for the expert rating of peer education did provide consistent responses for the first five domains examined, the incongruent rating observed for the sixth domain ("opportunity provided for reinforcement via practice") suggests that this component of the questionnaire may require further clarification and modification. Although member checking was performed, additional rigour might be facilitated by conducting face-to-face interviews with each expert rather than relying on written feedback alone.

Conclusion

This study has provided important information, gathered from experts, about how peer-led presentations might best be structured to effectively deliver falls prevention presentations to groups of community-dwelling older adults. Effective peer-led presentations have the potential to motivate peers to move from understanding falls prevention messages to engaging in falls prevention plans and taking relevant actions to minimise risk. We have presented recommendations that could be used to inform the design of future peer-led falls prevention programs, specifically via the incorporation of adult learning principles and theory of behaviour change into the design and the delivery of these programs. We see future research, such as the evaluation of community-based peer-led falls prevention programs incorporating these recommendations, as being valuable in validating our findings.

Conflict of Interest

The authors declare they have no conflicts of interest.

References

AIHW: Bradley, C. (2013). *Hospitalisations due to falls by older people, Australia 2009–10.* Canberra: AIHW. Vol. Injury research and statistics series no. 70. Cat. no. INJCAT 146.

Allen, T. (2004). Preventing falls in older people: Evaluating a peer education approach. *British Journal of Community Nursing, 9*(5), 195-200.

Bottorff, J. L. (1994). Using videotaped recordings in qualitative research. In J. M. Morse (Ed.), *Critical issues in qualitative research methods*. Thousand Oaks, CA: Sage Publications.

Bygstad, B., & Munkvold, B. E. (2007). *The significance of member validation in qualitative analysis: Experiences from a longitudinal case study*. Paper presented at the 40th Annual Hawaii International Conference on System Sciences, 2007. HICSS 2007, Hawaii. http://dx.doi.org:10.1109/HICSS.2007.553

Conner, M., & Norman, P. (2005). *Predicting health behaviour: A social cognition approach* (2nd ed.). Maidenhead: Open University Press.

Deery, H., Day, L., & Fildes, B. (2000). An impact evaluation of a falls prevention program among older people. *Accident Analysis and Prevention, 32*(3), 427-433. http://dx.doi.org/10.1016/S0001-4575(99)00043-3

Dollard, J., Barton, C., Newbury, J., & Turnbull, D. (2012). Falls in old age: A threat to identity. *Journal of Clinical Nursing, 21*(17-18), 2617-2625. http://dx.doi.org/10.1111/j.1365-2702.2011.03990.x

Evron, L., Schultz-Larsen, K., & Fristrup, T. (2009). Barriers to participation in a hospital-based falls assessment clinic programme: An interview study with older people.

Scandinavian Journal of Public Health, 37(7), 728-735.
http://dx.doi.org/10.1177/1403494809342309

Faugier, J., & Sargeant, M. (1997). Sampling hard to reach populations. *Journal of Advanced Nursing, 26*(4), 790-797. http://dx.doi.org/10.1046/j.1365-2648.1997.00371.x

Foster, G., Taylor, S. J., Eldridge, S. E., Ramsay, J., & Griffiths, C. J. (2007). Self-management education programmes by lay leaders for people with chronic conditions. *The Cochrane Database of Systematic Reviews,*(4), CD005108. http://dx.doi.org/10.1002/14651858.CD005108.pub2

Gillespie, L. D., Robertson, M. C., Gillespie, W. J., Sherrington, C., Gates, S., Clemson, L. M., & Lamb, S. E. (2012). Interventions for preventing falls in older people living in the community. *The Cochrane Database of Systematic Reviews, 9*(11), CD007146. http://dx.doi.org/10.1002/14651858.CD007146.pub3

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation.* Newbury Park, CA: Sage Publications.

Haines, T. P., Day, L., Hill, K. D., Clemson, L., & Finch, C. (2014). "Better for others than for me": A belief that should shape our efforts to promote participation in falls prevention strategies. *Archives of Gerontology and Geriatrics, 59*(1), 136-144. http://dx.doi.org/10.1016/j.archger.2014.03.003

Hill, A.-M., Hoffmann, T., Beer, C., McPhail, S., Hill, K. D., Oliver, D., Brauer, S.G., & Haines, T. P. (2011a). Falls after discharge from hospital: Is there a gap between older peoples' knowledge about falls prevention strategies and the research evidence? *The Gerontologist, 51*(5), 653-662. http://dx.doi.org/10.1093/geront/gnr052

Hill, A.-M., Hoffmann, T., McPhail, S., Beer, C., Hill, K. D., Brauer, S. G., & Haines, T. P. (2011b). Factors associated with older patients' engagement in exercise after hospital

discharge. *Archives of Physical Medicine and Rehabilitation, 92*(9), 1395-1403. http://dx.doi.org/10.1016/j.apmr.2011.04.009

Jaramillo, J. A. (1996). Vygotsky's sociocultural theory and contributions to the development of constructivist curricula. *Education, 117*(1), 133-140.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14-26. http://dx.doi.org/10.3102/0013189x033007014

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research, 1*(2), 112-133. http://dx.doi.org/10.1177/1558689806298224

Khong, L., Bulsara, C., Hill, K. D., & Hill, A.-M. (2016). How older adults would like falls prevention information delivered: Fresh insights from a World Café forum. *Ageing and Society*, 1-18. http://dx.doi.org/10.1017/s0144686x16000192

Khong, L., Farringdon, F., Hill, K. D., & Hill, A.-M. (2015). "We are all one together": Peer educators' views about falls prevention education for community-dwelling older adults - A qualitative study. *BMC Geriatrics, 15*(28), 1-10. http://dx.doi.org/10.1186/s12877-015-0030-3

Kim, C., & Pekrun, R. (2014). Emotions and motivation in learning and performance. In J. M. Spector, M. D. Merrill, J. Elen & M. J. Bishop (Eds.), *Handbook of Research on Educational Communications and Technology* (4th ed.). New York: Springer http://dx.doi.org/:10.1007/978-1-4614-3185-5_6

Klein, L. A., Ritchie, J. E., Nathan, S., & Wutzke, S. (2014). An explanatory model of peer education within a complex medicines information exchange setting. *Social Science & Medicine, 111*, 101-109. http://dx.doi.org/10.1016/j.socscimed.2014.04.009

Liamputtong, P. (2013). *Research methods in health : Foundations for evidence-based practice* (2nd ed.). South Melbourne, VIC: Oxford University Press.

Lincoln, Y. S., & Guba, E. G. (1985). Establishing trustworthiness. In E. G. (Ed.), *Naturalistic inquiry* (pp. 289-331). Beverly Hills, CA: Sage Publications.

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research 35*(6), 382-385.

McInnes, E., & Askie, L. (2004). Evidence review on older people's views and experiences of falls prevention strategies. *Worldviews on Evidence-Based Nursing, 1*(1), 20-37. http://dx.doi.org/10.1111/j.1741-6787.2004.04013.x

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. San Francisco, CA: Jossey-Bass Inc (Wiley).

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M.P., Cane, J., & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine 46*(1), 81-95. http://dx.doi.org/10.1007/s12160-013-9486-6

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science, 6*(1), 42. http://dx.doi.org/10.1186/1748-5908-6-42

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Noar, S. M., Benac, C. N., & Harris, M. S. (2007). Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. *Psychological Bulletin, 133*(4), 673-693. http://dx.doi.org/10.1037/0033-2909.133.4.673

Pea, R. D. (2004). The social and technological dimensions of scaffolding and related theoretical concepts for learning, education, and human activity. *Journal of the Learning Sciences, 13*(3), 423-451. http://dx.doi.org/10.1207/s15327809jls1303_6

Peel, N. M., & Warburton, J. (2009). Using senior volunteers as peer educators: What is the evidence of effectiveness in falls prevention? *Australasian Journal on Ageing, 28*(1), 7-11. http://dx.doi.org/10.1111/j.1741-6612.2008.00320.x

Phillips, B., Ball, C., Sackett, D., Badenoch, D., Straus, S., Haynes, B., & Sawes, M. (2001). Evidence-based medicine levels of evidence. Retrieved from http://www.cebm.net/oxford-centre-evidence-based-medicine-levels-evidence

Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health, 29*(5), 489-497. http://dx.doi.org/10.1002/nur.20147

Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30*(4), 459-467. http://dx.doi.org/10.1002/nur.20199

Portney, L. G., & Watkins, M. P. (2009). *Foundations of clinical research: Applications to practice.* (3rd ed.). Upper Saddle River, N.J.: Pearson/Prentice Hall.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223-231. http://dx.doi.org/10.1002/j.2168-9830.2004.tb00809.x

QSR International Pty Ltd. (2012). NVivo 10 Qualitative data analysis software.

Queensland Occupational Therapy Fieldwork Collaborative. (2005). Adult learning theory
and principles. Retrieved from http://www.qotfc.edu.au/resource/?page=65375

Robson, E., Edwards, J., Gallagher, E., & Baker, D. (2003). Steady As You Go (SAYGO): A
falls-prevention program for seniors living in the community. *Canadian Journal on
Aging 22*(2), 207-216. http://dx.doi.org/10.1017/S0714980800004529

Sackett, D. L., Rosenberg, W. M., Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996).
Evidence based medicine: What it is and what it isn't. *British Medical Journal,
312*(7023), 71-72. http://dx.doi.org/ 10.1136/bmj.312.7023.71

Shiner, M. (1999). Defining peer education. *Journal of Adolescence, 22*(4), 555-566.
http://dx.doi.org/10.1006/jado.1999.0248

Spector, J. M., Merrill, M. D., Elen, J., & Bishop, M. J. (2014). *Handbook of Research on
Educational Communications and Technology* (4th ed.). NY: Springer.

StataCorp. (2013). Stata Statistical Software Release 13. College Station, TX: StataCorp LP.

Trompf, J. P., & Sale, P. W. G. (2001). Adult learning principles embodied in the paired-
paddock model. *Australian Journal of Experimental Agriculture, 41*(2), 195-204.
http://dx.doi.org/10.1071/EA00130

Vogt, W. P. (2011). *SAGE quantitative research methods*. London: SAGE Publications.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.*
Cambridge, MA: Harvard University Press.

Wurzer, B., Waters, D. L., Hale, L. A., & Leon de la Barra, S. (2014). Long-term
participation in peer-led fall prevention classes predicts lower fall incidence. *Archives*

of Physical Medicine and Rehabilitation, 95(6), 1060-1066.

http://dx.doi.org/10.1016/j.apmr.2014.01.018

Yardley, L., Beyer, N., Hauer, K., McKee, K., Ballinger, C., & Todd, C. (2007).

Recommendations for promoting the engagement of older people in activities to

prevent falls. *Quality & Safety in Health Care, 16*(3), 230-234.

http://dx.doi.org/10.1136/qshc.2006.019802

Table 1   Experts (*n*=10) Rating of the 3 Presentations Against Each Criterion (*n*=30)

Item Statement	Median[a]	(IQR)
Domain 1: Learners' active participation in the learning process		
1 The participants were positioned such that everyone could join in discussion activities	3.0	(3-4)
2 There was an introduction to falls and an overview of the falls prevention presentation	4.0	(4-5)
3 The peer educator stated what learning goals were to be achieved during the presentation	4.0	(2-4)
4 The peer educator encouraged the participants to ask for clarification during the talk if they required it	2.0	(2-3)
5 The peer educator encouraged the participants to join in structured activities (such as ice-breakers, games)	2.0	(1-3)
6 Individuals were encouraged to discuss topics raised by the other participants	2.0	(2-3)
7 The peer educator asked an appropriate mix of open-ended and closed questions	4.0	(2-4)
8 Participants' activities allowed for differences in learning style to surface by presenting visual, auditory and kinesthetic information	4.0	(2-4)
Domain 2: Consideration of learners' relevant prior knowledge (includes falls prevention)		
9 Possible consequences of falls were discussed with participants	4.0	(4-5)
10 The peer educator encouraged participants to identify their own risk of falls, such as difficulties with everyday activities	4.0	(2-4)
11 The peer educator asked participants to reflect on and discuss their own history of falling	4.0	(2-5)
12 Participants were asked to weigh up the pros and cons of undertaking falls prevention activities	2.0	(1-2)
13 Positive outcomes of undertaking falls prevention activities were presented	4.0	(4-5)
14 Participants were encouraged to discuss and plan towards an implementation of falls prevention activities	2.0	(2-4)
15 Participants were asked to rate their motivation to plan and undertake a falls prevention strategy	1.5	(1-2)
Domain 3: Environment that is conducive to adult learning		
16 Participants appeared to be able to convey their thoughts, opinions or emotions without fear or hesitation	4.0	(4-4)
17 Participants were validated by the peer educator when they made a contribution	4.5	(4-5)
18 Participants appeared to be relaxed in the environment	4.0	(3-4)
19 The physical environment was conducive for learning and interaction (e.g., peer educator's voice level was audible, background noise was minimal).	4.0	(4-5)

Item Statement	Median[a]	(IQR)
Domain 4: Group interaction that facilitates peer learning		
20 Participants were encouraged to engage in peer dialogue	2.0	(1-2)
21 The peer educator asked participants to relate their experience with falls	4.0	(2-5)
22 The peer educator asked participants to relate examples of falls strategies that they have used	2.0	(1-2)
23 Participants shared strategies with the group that they found to have been useful or not useful	2.0	(2-4)
Domain 5: Delivery protocols that are appropriate for adult learning		
24 The peer educator asked participants to identify which points were particularly relevant for them	2.0	(1-3)
25 Participants had sufficient time to complete verbalising their responses	4.0	(3-4)
26 The peer educator repeated key information in a manner that was appropriate to the audience	4.0	(3-5)
27 There was an adequate mix of information provision, participant engagement and opportunity for questions/discussion	2.5	(2-4)
Domain 6: Opportunity provided for reinforcement via practice		
28 The peer educator discussed, distributed resources and encouraged the participants to review them after the session.	5.0	(4-5)
(For example, handouts, web-links, information where to seek follow-up information)		
29 The peer educator asked the participants to plan their personal response after the presentation. (For example, activities that they may intend to undertake at home afterwards; e.g., conduct a check of your house, list of medications, make an exercise diary)	4.0	(2-4)
30 The peer educator thanked participants for attending the session	5.0	(3-5)

Table 2   **Expert Reviewers' Levels of Agreement for Each Domain of the Questionnaire**

Domain Description	Items	Mean (*SD*)	ICC	95%CI
1. Learners' active participation in the learning process	8	3.02 (0.65)	0.88	0.44, 1.00
2. Consideration of learners' relevant prior knowledge (includes falls prevention)	7	3.08 (0.78)	0.76	-0.97, 0.99
3. Environment that is conducive to adult learning	4	4.07 (0.70)	0.81	0.15, 1.00
4. Group interaction that facilitates peer learning	4	2.63 (0.91)	0.79	0.04, 0.99
5. Delivery protocols that are appropriate for adult learning	4	3.15 (0.76)	0.82	0.17, 1.00
6. Opportunity provided for reinforcement via practice	3	3.91 (0.85)	0.72[a]	-0.44, 0.99

Note. SD-Standard Deviation, ICC-Intraclass Correlation Coefficient, CI-Confidence Interval

[a] Rating by seven expert reviewers only compared to 10 expert reviewers for the other domains.

Table 3　　**Delivery of Peer-Led Falls Prevention Presentation to Community-Dwelling Older Adults: Experts' Recommendations**

Questionnaire Domain	Experts' Recommendations	Rationale
Learners' active participation in the learning process (Theme: Mode of delivery)	Interactive presentation with active learning techniques such as using a mix of open-ended and closed questions, group tasks and pair or small-group discussion to encourage active learning	Learning is an internal process; self-directed enquiry produces the greatest learning (adult learning theory) (Merriam et al., 2014)
	Provide audience with an overview of talk at the start of the presentation	Clear framework of presentation (pedagogical skills; scaffolding) (Jaramillo, 1996; Merriam et al., 2014; Pea, 2004)
	Invite audience to seek clarification anytime during presentation	
Consideration of learners' relevant prior knowledge (includes falls prevention) (Theme: Content of presentation)	Keep peer/personal anecdotes relevant to falls prevention topic only	Keep presentation and discussion focused on key points of falls prevention topic. Dramatic deviation from the topic to be avoided
(Theme: Personalisation of message)	Use of a standardised and targeted script to encourage consistency of the content including aims and significance of falls prevention	Consistency of presentation and time management enhanced when numerous presenters are involved
	Encourage audience to reflect and discuss personal experiences regarding falls. Encourage audience to develop personalised action plan	Foster personal relevance of falls prevention information (falls prevention guidelines, health behaviour change) (Haines et al., 2014; Michie et al., 2013; Yardley et al., 2007)
Delivery protocols that are appropriate for adult learning (Theme: Technology and resources)	Maintain a positive tone and message via the use of appropriate interactive strategies	Older adults prefer the fostering of a positive social identity (falls prevention guidelines) (Dollard et al., 2012; Haines et al., 2014; McInnes et al., 2004; Yardley et al., 2007)

| Questionnaire Domain	Experts' Recommendations	Rationale
Delivery protocols that are appropriate for adult learning (Theme: Technology and resources)	Incorporate various sensory formats including visual, aural or kinesthetic stimuli e.g. posters, pictures, video, demonstrations or tactile resources Use resources provided to document personal intention or action plan after the presentation (e.g., falls prevention booklet and checklist)	Use variety of technologies in presentation to engage audience (adult learning theory) To reflect upon and discuss information presented (health behaviour change) (Michie et al., 2011; Michie et al., 2013)
Environment that is conducive for adult learning (Theme: Affective domain)	Portray positiveness, enthusiasm and a motivational style	Educator's approach can impact on level of engagement with message (adult learning theory) (Merriam et al., 2014)
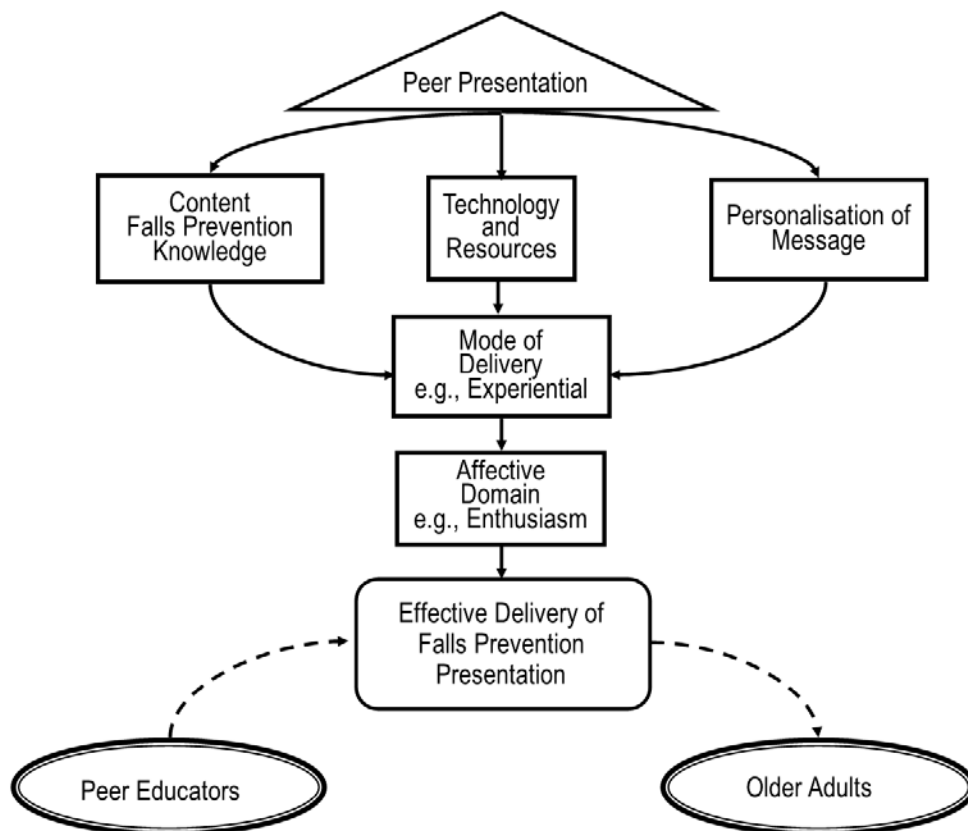
Figure 1. Five key themes for the effective delivery of a falls prevention presentation: A

framework based on expert recommendations.