# The impact of peer-led falls prevention education on community-dwelling older adults: A mixed methods evaluation

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Chapter

9

# Chapter 9

# Research Summary, Recommendations and Conclusion

## 9.1 Chapter Outline

This chapter summarises and synthesises findings of the research conducted. Key findings from both phases of the research will be presented. First, each of the three studies in Phase 1 will be discussed. These focused on older adult peer educators, community-dwelling older adults, and experts in the area of falls prevention, education, health promotion and psychology. These studies were conducted concurrently to seek the views from key stakeholders about providing falls prevention education for older adults. Findings from these studies yielded an understanding about providing education for falls prevention and community-dwelling older adults' preferences about seeking and receiving falls prevention information. Practical feedback from these studies was used to inform Phase 2 of the research. Phase 2 consisted of the design, development and evaluation of a new contemporary peer-led falls prevention education program. This program consisted of a peer-led presentation, a workshop to train new peer educators to deliver the presentation and resources to support the program. Subsequently, the key findings from a trial conducted to evaluate the effectiveness of the contemporary peer-led falls prevention education presentation compared to the existing presentation will be considered. Finally, the strengths, limitations and challenges of the research will be summarised and the implications for practice presented; recommendations for future research will also be provided.

## 9.2 Introduction

The primary aim of this research was to design a new peer-led falls prevention education program and evaluate its impact on community-dwelling older adults' beliefs, knowledge, motivation, and intention to engage in falls prevention strategies. This research was conducted in collaboration with a large not-for-profit community organisation that provides falls prevention and health promotion programs in Western Australia, one of which was a peer-led falls prevention education program.

In Phase 1 of the research, three studies were conducted concurrently to gain an understanding of key stakeholders' perspectives about the provision of falls prevention information and education for older adults. Firstly, older adult peer educators of the existing peer-led falls prevention education program were interviewed to explore their perspectives about their role in delivering peer-led falls prevention education to groups of community-dwelling older adults. In another study, a community-based participatory research forum using the World Café approach was conducted to examine the views and preferences of community-dwelling older adults about seeking and receiving falls prevention information. Finally, a study was undertaken in which experts from different areas of specialisation evaluated the existing peer education presentations against established criteria consistent with adult learning, behavioural change and falls prevention evidence.

Findings from Phase 1 were used to inform the design of a contemporary peer-led falls prevention education program that was developed and evaluated in Phase 2. This program consisted of a new peer-led falls prevention presentation, a workshop to train new volunteer peer educators to deliver the presentations and supporting resources for the program. As this program was intended for older adult learners, it was important that relevant adult learning principles were incorporated in the design of the education program. Equally important, the theoretical framework of the program was the COM-B model. Research evidence (Michie et al., 2011) has shown that when theory-based interventions are used to improve knowledge and motivation of the target group, there is potential for achieving positive behavioural outcomes. Finally, a longitudinal, quasi-experimental pre-test post-test trial was conducted. The aim of the trial was to evaluate the effectiveness of the contemporary peer-led falls prevention education presentation in improving older adult participants' beliefs and

knowledge about falls prevention, and their motivation and intention to engage in falls prevention strategies compared to the existing peer-led education presentation.

## 9.3 Summary and Synthesis of Findings

Overall, the peer education approach was supported by both peer educators and older adult forum participants as a valuable means of reaching out and connecting with community-dwelling older adults regarding falls prevention. This is consistent with a review in this area which concluded that peer education could be a potential approach for empowering older adults to take action to reduce their risk of falls (Peel & Warburton, 2009). Expert reviewers gave recommendations on how a peer education program could be designed to be more effective in delivery. These research findings provided new evidence regarding the design of education programs, with an enhanced understanding about how peer education could be designed to potentially raise older adults' awareness, knowledge, motivation and intention to engage in falls prevention strategies. The findings were supported by adult learning principles (Merriam & Bierema, 2014), and could be explained using concepts of health behaviour change from the COM-B model (Michie et al., 2011). The findings from Phase 1 were incorporated into the contemporary program and trial conducted in Phase 2.

While both existing and new programs showed that peer education to be effective in raising older adults' beliefs, knowledge and intention regarding falls prevention, participants who received the contemporary program were significantly more likely to make a clear personal action plan to reduce their risk of falling. Additionally, the strength of the contemporary program was that it was designed using behaviour change theory and relevant adult learning principles.

The overall findings of this thesis strongly suggest that falls prevention education for older adults should be designed using relevant adult learning principles and referencing health behaviour change theory. This research has demonstrated that an evidence-based peer education approach informed by sound theoretical frameworks, can be a feasible means of addressing older community dwelling adults' perceptions regarding falls prevention programs.

### 9.3.1 Phase 1: Key stakeholders' perspectives about falls prevention information and education

Previous studies showed that some older adults did not find falls prevention recommendations personally relevant, identified barriers to engaging in falls prevention strategies and often had limited knowledge about falls and falls prevention (Bunn et al., 2008; Dickinson, Machen, et al., 2011; Dorresteijn et al., 2012; Hill, Hoffman, Beer, et al., 2011; Hughes et al., 2008; Yardley, Bishop, et al., 2006). In view of these findings, the peer education approach to falls prevention education has been proposed (Peel & Warburton, 2009) as a means of overcoming these barriers and potentially improving community-dwelling older adults' knowledge about falls and falls prevention and uptake of relevant evidence-based strategies. The aim of Phase 1 of the research was first, to seek key stakeholders' perspectives in order to gain a better understanding of the role of peer educators in falls prevention; second, to garner views about community-dwelling older adults' preferences for seeking and receiving falls prevention information, and third to seek expert evaluation and opinion about the peer educators' presentations of falls prevention education for community-dwelling older adults. The key stakeholders in this research were (1) peer educators of the existing peer-led falls prevention education program, (2) a group of community-dwelling older adults, and (3) professionals who had expertise in various areas of specialisation relevant to falls prevention, education, health promotion and psychology.

> **Research Aim (Study 1):** Explore the perspectives of a group of peer educators about their role in delivering peer-led falls prevention education for community-dwelling older adults.

Study 1 explored the peer educators' perspectives through focus-group and semi-structured interviews. This study was the first in the field of falls prevention to specifically investigate peer educators' understanding of what their role entailed and their perceptions about how they encouraged their peers towards a change in health behaviour. New insights into the enablers and barriers that can influence peer educators' capacity to deliver the falls prevention education effectively were identified. The peer educators emphasised that they could successfully engage in and promote positive health behaviour change to the older adults because they could personally relate to them through the peer-to-peer connection. The peer educators

consistently expressed the need for further organisational support regarding their training and for formal feedback on how to better motivate their peers to engage in falls prevention strategies. Overall, these findings reinforced existing empirical evidence (Peel & Warburton, 2009) supporting peer education as a feasible and potentially effective approach for delivering education about falls prevention to older adults.

> **Research Aim (Study 2):** Examine the views and preferences of community-dwelling older adults about seeking and receiving falls prevention information.

Study 2 used a consumer-focused approach to examine the views and preferences of older adults as stated in the research aim. Studies have identified that older adults frequently stated that they did not find falls prevention messages personally relevant and they often thought that falls were not preventable (Horne, Speed, Skelton, & Todd, 2009; Hughes et al., 2008). Other studies have reported that falls prevention messages are better accepted if portrayed positively (Hill, Hoffman, Beer, et al., 2011; Hughes et al., 2008; Yardley, Bishop, et al., 2006). Given these findings, the second study aimed to further understand how the delivery of falls prevention information could be improved by examining older adults' views and preferences about seeking and receiving falls prevention information. A community-based participatory research forum using a novel World Café approach was conducted with community-dwelling older adults. A range of factors regarding older adults' perspectives about seeking and receiving falls prevention information was identified. The study found that older adults were primarily concerned that information be imparted positively and respectfully to encourage engagement with the messages delivered. Personal experience strongly influenced older adults' perceptions about whether they chose to seek out falls prevention information. Those older adults who reported that they had already experienced a fall or had experienced a family or friend falling, stated that it triggered a search for information and additionally, changed their perceptions about the relevance of information provided. These findings suggested that the approach to falls prevention education may need to be further refined. For older adults who have fallen, the approach could be to provide detailed tailored information to individual older adults or groups of older adults about what strategies could be undertaken to reduce their risk of falling. For those older adults who have

not yet experienced a fall, education strategies could be targeted with the aim of raising awareness about the risk of falls and in particular, fostering an appreciation of the personal relevance of falls prevention. Furthermore, education could encourage these older adults to investigate positive strategies that can reduce the risk of falls, but are also relevant for wellbeing and healthy ageing. Feedback from forum participants indicated that alternative sources of providing information, such as seniors' groups and shopping centers and libraries, should be considered, as these older adults reported that they were less likely to seek falls prevention information from healthcare professionals if they had not fallen. Peer education was one of the alternatives proposed by forum participants as a feasible means of reaching out to those older adults who had not experienced a fall. The findings from this study were valuable because they were informed by the older adult lived experience in the community. They confirmed other studies and concepts of health behaviour change, which have identified that raising older adults' knowledge about falls and falls prevention is critical for overcoming barriers and developing the motivation and confidence to engage in falls prevention strategies (Haines et al., 2011; Hill, Hoffman, McPhail, et al., 2011; Michie et al., 2011).

> **Research Aim (Study 3):** Evaluate peer educators' presentations of falls prevention education for community-dwelling older adults against 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 by experts of various areas of specialisation.

Study 3 was a mixed methods study that used a novel approach, whereby three peer-led falls prevention presentations were videoed and the recordings were made available via a secure internet link for subsequent review by ten experts (nine from Australia and one from UK). These experts were from areas of falls prevention, education, health promotion and psychology. Although the experts reviewed the peer-led presentations from different professional perspectives, they were consistent in their findings and concurred in their final recommendations. Key recommendations included reminding peer educators to personalise falls prevention messages delivered, and that adult learning principles ought to be used to encourage audience interaction and subsequent engagement with the message. They recommended that falls

prevention education be presented in a positive manner and that information provided should emphasise the benefits in wellbeing beyond preventing falling. Finally, the experts also recommended that to foster awareness of the personal relevance of falls and to raise motivation, participants should be encouraged to develop a personal action plan for reducing the risk of falling.

Subsequently, the findings from Phase 1 were used to inform the design, development and evaluation of a contemporary peer-led falls prevention education program in Phase 2.

### 9.3.2 Phase 2: Design, development and evaluation of a new peer-led falls prevention education program

Phase 2 of the research consisted of the design, development and evaluation of a contemporary peer-led falls prevention education program that was underpinned by the COM-B model and also incorporated relevant adult learning principles. It was developed in close collaboration and partnership with the community organisation, with the aim of enhancing feasibility in delivery and future translation. A workshop was developed to train new peer educators to deliver the presentation. The new peer educators were given training initially regarding epidemiology of falls and falls prevention and also understanding their role in facilitating the learning of their peers about falls prevention. Subsequently, they learned about integrating BCTs and adult learning principles into their presentations, and encouraging uptake of falls prevention strategies by their peers. The peer-led falls prevention presentation was mapped against the COM-B model and related BCTs. The program resources that were developed included a facilitator instruction manual and teaching aids, online training video, a peer educator guidebook and fidelity checklist (see Appendix O, Appendix P, Appendix Q) to enable the community organization (ICCWA) and other organisations to replicate the peer-led falls prevention education program with fidelity.

> **Research Aim (Study 4):** Evaluate the effectiveness of delivering a contemporary peer-led falls prevention presentation incorporating adult learning principles and behaviour change strategies on community-dwelling older adults' beliefs and knowledge about falls prevention, their motivation, and intention to engage in falls prevention strategies compared to delivering an existing peer-led falls prevention presentation.

The contemporary peer-led falls prevention education presentation was evaluated to determine its effectiveness on community-dwelling older adults' beliefs, knowledge, motivation, and intention to engage in falls prevention strategies. The outcomes of the contemporary presentation were compared with the control group, whose participants received the existing falls prevention presentation delivered by the peer educators trained under the existing program. Peer-led education significantly raised both groups of participants' beliefs about the personal relevance of falls prevention, knowledge about falls and falls prevention and their levels of intention to engage in evidence-based falls prevention strategies. In addition, the contemporary peer-led falls prevention education was significantly more effective in influencing older adults to develop a clear personal take home action plan to engage and undertake falls prevention measures to reduce their risk of falling.

As discussed earlier, barriers to engagement in falls prevention have been found to include older adults' low self-perceived risk of falls, low levels of knowledge about falls and falls prevention, and low levels of motivation to engage in falls prevention strategies (Bunn et al., 2008; Dickinson, Machen, et al., 2011; Dorresteijn et al., 2012; Hill, Hoffman, Beer, et al., 2011; Hughes et al., 2008; Yardley, Bishop, et al., 2006). Given that changing health behaviour as proposed by the COM-B model (Michie et al., 2011) requires an individual to gain capability (awareness and knowledge) and motivation, these results demonstrated that using the peer education approach can overcome some of these barriers to engagement in falls prevention. Participants in both groups were significantly more likely to report an increased knowledge of their personal falls risk and to develop an action plan to reduce their risk of falls. Participants who reported that they had previously discussed falls prevention with their doctor or health professional or received falls prevention information were significantly more likely to report an increased knowledge of falls risk. While this highlighted the important role that healthcare professionals can play in facilitating older adults' knowledge about falls and motivation to engage in preventive strategies (Dickinson, Horton, et al., 2011; Lee et al., 2013), other studies have found that relatively few older adults take the opportunity to discuss falls and falls prevention with such professionals (Lee et al., 2016; Stevens et al., 2012). Peer education could be a feasible, alternate means of encouraging older adults to discuss falls prevention with their healthcare professional. The study also found new evidence that men were

significantly less likely to believe that taking measures to prevent falls was useful, to report increased knowledge or to report an intention to engage in falls prevention strategies after attending a peer-led presentation. This is consistent with previous studies that have reported that men were less likely to perceive themselves at risk of falling compared with women (Hughes et al., 2008) and less likely to seek medical care after a fall or talk to a health professional about falls or falls prevention (Stevens et al., 2012).

## 9.4 Strengths of the Research

This research has several strengths. While an earlier review (Peel & Warburton, 2009) recommended peer education as a potential approach for reducing falls, there was limited empirical research that evaluated the design and implementation of peer-led falls prevention education using a behaviour change theory approach. This is the first research to evaluate the impact of a peer-led falls prevention education program that is underpinned by a behaviour change framework, utilises adult learning principles and incorporates feedback from key stakeholders. This research was able to evaluate if the contemporary program (a complex intervention) could raise older adult's beliefs and knowledge about falls and falls prevention, and their motivation and intention to engage in an evidenced-based plan to reduce their risk of falls (Campbell et al., 2000). The program can now be further robustly evaluated in larger trials to determine its effect on older adults' engagement in falls prevention strategies.

Consumer involvement in research has increasingly been recognised and promoted as important because consumer engagement can improve the quality of health research studies ensuring that proposed research outcomes are relevant to end-users (Hill & Draper, 2011; National Health and Medical Research Council (NHMRC), 2004; National Health and Medical Research Council (NHMRC) & Consumers' Health Forum (CHF), 2005). One of the strengths of this research was its regular consultations with older adult groups in the community throughout the research process. These consultations included seeking feedback about questionnaires and procedures to be used in the research, pilot testing the questions for the forum and seeking feedback from the new peer educators after they delivered the contemporary presentation. During Phase 1, extensive consultation was undertaken with the older adult peer educators (Study 1) and with older adults who participated in the

community-based participatory research forum (Study 2). This level of involvement enhanced the development of the new peer education program by ensuring that the program was feasible to deliver in the allocated timeframe. Since the hour was pre-determined, it was important that key concepts were conveyed briefly, but it was essential that principles of adult learning were applied to the program structure. The final program was designed with older adults' preferences in mind and included practical consumer-focused solutions. Such involvement and engagement also ensured that concerns raised in previous studies regarding falls prevention messages not being personally relevant or providing appropriately clear information, were addressed (Bunn et al., 2008; Dickinson, Machen, et al., 2011; Dorresteijn et al., 2012; Hill, Hoffman, Beer, et al., 2011; Hughes et al., 2008; Yardley, Bishop, et al., 2006). Overall, older adults' involvement and feedback improved the feasibility of the program that has now been translated into practice by the community organization (ICCWA) and is still currently adopted. Therefore, the one hour presentation designed to be delivered by volunteers, can potentially be readily translated into other similar community-based settings.

The design, development and evaluation of the new education program was described explicitly and extensively. Unlike earlier peer-led falls prevention education studies for older adults (Allen, 2004; Deery et al., 2000; Kempton et al., 2000), a rigorous, structured mapping of the health behaviour change theory and its taxonomy of BCTs (Abraham & Michie, 2008) was applied to guide the design and development of the new education program during this research. In designing effective health research programs, health behaviour change theory confirms that identifying the "active ingredients (core components)" in behaviour change interventions and the conditions in which they are effective is crucial (Michie et al., 2009, p. 4). Through this process, the research team could map the identified target health behaviour (initiate and develop a personal take home action plan to engage in falls prevention strategies) against the BCTs required to address this behaviour. Subsequently, the target behaviour was assessed to evaluate the effectiveness of the BCTs chosen. (Colquhoun et al., 2014). This detailed mapping of the intervention facilitated evaluation of the study's peer-led falls prevention education program and also allows for future replication by third parties (Craig et al., 2013; Davies et al., 2010; Michie & Abraham, 2008).

Conducting educational health research in real-life-conditions (Murray, 2002; National Research Council, 2002) has both strengths and challenges. The research in this thesis was approached in a manner that was consistent with recommendations for research in education such as a phased approach to both development and evaluation of complex interventions (Campbell et al., 2000; Medical Research Council, 2000; Murray, 2002; National Research Council, 2002). Additionally, a mix of approaches has been proposed as the most efficacious method of evaluating complex interventions in educational research (Campbell et al., 2000; Medical Research Council, 2000; Murray, 2002; National Research Council, 2002). In the final synthesis of mixed methods results, an enhanced understanding of the underlying aspects was derived (Liamputtong, 2013), with identification of factors that enriched the evidence for a peer-led approach to falls prevention education. The use of a mixed methods research design with both qualitative and quantitative approaches in Phase 1 provided for a robust analysis and in-depth understanding of peer led falls prevention education. Phase 2 also provided both quantitative and qualitative findings for the evaluation of the education program that enabled a more in-depth and richer understanding of older adults' responses to the program. In addition, the research was conducted in close collaboration and partnership with a community organisation which was advantageous but also posed challenges (Ross et al, 2010). The advantage was the latter provided feedback, support and active participation in some aspects of the research. The approach to aspects such as design and delivery of the peer-led falls prevention education program, data collection and evaluation were all informed by the organisation's feedback from their large older adult volunteers' membership and the older adults' community groups with whom they interact with on a regular basis. Their insights to contextual factors facilitated research such as identification of potential barriers to recruitment and retention of participants. Extra effort was made to discuss expectations of goals, ownership of data, timelines and resources for the research with the community organisation. In addition, the research team negotiated with the community organisation to determine essential elements of the intervention that could be adapted to local context and to control for elements which could not be altered. This ensured that the contemporary peer-led falls prevention education program was developed in a feasible manner for translation to practice in real-life conditions without losing its intended effectiveness. Additionally, the new program was embedded in the community organisation's activities, supporting its sustainability. Finally, the

reporting of this research's contemporary peer-led falls prevention education program was guided by the Template for Intervention Description and Replication (TIDieR) checklist (Section 7.8.2) (Hoffmann et al., 2014), which is recommended for use when reporting interventions (EQUATOR Network, 2016; Johnston et al., 2014).

Validity and reliability of the research can impact on interpretation of findings and generalisability (De Vaus, 2014; Portney & Watkins, 2009). To maximise the validity (internal and external validity) and reliability of the research, the program's fidelity was addressed (Borrelli et al., 2005; Nigg et al., 2002; Resnick et al., 2005). In this research, fidelity was monitored during the research to ensure the education program was delivered as intended (Bellg et al., 2004; Borrelli, 2011; Gearing et al., 2011; Moncher & Prinz, 1991; Resnick et al., 2005). For example, as discussed in Chapter 7, Section 7.8.1, a fidelity checklist (Appendix Q) was developed to be used by the community organisation, to provide feedback to the new peer educators after observation of delivery of their presentations. The development of a facilitator instruction manual and teaching aids also ensured consistency in training of new peer educators and delivery of the one hour presentation. The measuring instruments (questionnaires in Study 3 and Study 4) used in the research were validated and assessed to be reliable (De Vaus, 2014). Sample attrition also has the potential to introduce bias and impact on internal and external validity (Barry, 2005; Hansen et al., 1985). Our older adult participants' ages ranged from 60 to 86 years throughout the four studies and more than half of the participants (52.5%) in the quasi-experimental trial reported their health to be good (Chapter 8, Table 8.4). However, although most participants may indicate slightly better health than the wider population of older adult, there are challenges to conducting research among older adult populations (Fudge et al., 2007; Kelsey et al., 1989; Samelson et al., 2008). Care was taken to minimise sample attrition during all the studies conducted. For example, during the World Café community-based forum, regular rest breaks with refreshments and an age-friendly setting were organised. Notably, the older adult participants overwhelmingly reported the forum met their expectations (95.7%) and they felt the forum covered issues important to them (92.8%) (Bulsara et al., 2016) (Appendix K). During the trial in Phase 2, the research team made a call to each participant prior to sending out the follow-up questionnaire and later another effort was made to remind those who did not respond within the deadline. The Phase 2 quasi-experimental trial's attrition rate was

32% (control group) and 30% (intervention group) across the three time points, even though participants had only attended an hour presentation with no further face-to-face contact with the research team. This compares favorably with attrition rates reported in other studies in this area (Allen, 2004; Deery et al., 2000). Finally, the studies conducted and reported a priori sample size calculations to ensure adequate statistical power for hypothesis testing.

Overall, the steps taken in this research facilitated (i) evaluation of findings, (ii) the ability to translate the program with fidelity for use in other similar community-based settings and (iii) potential replication of the program for further evaluation in other larger falls prevention trials. Importantly, the program was shown to be practical, feasible and sustainable in real-life conditions, and effective in raising older adults' beliefs, knowledge and intention with regard to falls prevention.

## 9.5 Limitations and Challenges of the Research

The use of a mixed method approach in the design and evaluation of the studies in this thesis has advantages as presented in Chapter 3 Section 3.2.1 but a mixed method research design poses challenges, too. There is a lack of consensus regarding the definition of a mixed method research design (Teddlie and Tashakkori, 2011) which has proven to be time-consuming at the publication stage where there has been queries from reviewers. Furthermore, there is a debate over the theoretical and conceptual issues arising from the conduct of such a research approach (Creswell, 2011). The relevant issues for this thesis included specifying the weight of quantitative and qualitative aspects within each study (for example in Study 1, Chapter 4) that can impact on the interpretation of the findings. Mixed method research design has also been deemed to be costlier, more time-consuming and requiring a wider repertoire of skills for doctoral students to conduct (Teddlie and Tashakkori, 2011). In this research, the final mixed method research methods were chosen to aid in answering the research questions most effectively by collecting both quantitative and qualitative data to understand the complex problems presented (Creswell, 2014). Additionally, at a practical level, a mixed methods approach (Creswell 2014) was chosen because it was recognised that there would be pragmatic and procedural limitations in working with a community organisation. A mixed method approach could assist to minimise these limitations.

Educational research is challenging when translating theory into practice (National Research Council, 2002; Nelson, 2000) as there are factors beyond the control of the research team that can impact on the outcome of the program. There were challenges to the recruitment, training and retention of new peer educators (Chapter 8 Section 8.7), which has previously been identified as a challenge to the successful delivery of such programs (Peel & Warburton, 2009). Training older adult volunteer lay people with varying educational qualifications, life experience and background to grasp new concepts in falls-related content knowledge, behaviour change concepts, adult learning principles and presentation skills within one training workshop was a challenge. It was challenging because of the effect of ageing on their learning (Chapter 2 Section 2.5.1.3.3) and the complexity associated with concepts of health behaviour change (Section 2.5.1). Additionally, they were required to learn how to apply adult learning principles into a time limited presentation of one hour. Hence, technology such as online video-based lessons and materials, as well as role-play and mock practice were harnessed to accommodate the new peer educators' diverse learning requirements and pace of learning at the workshop. Resources were also developed for their self-directed learning after the workshop and a buddy system was applied to provide opportunities for support from their peers during practice runs (Chapter 7). Only two out of the six newly trained volunteer peer educators were available at the time of the research period to deliver the presentations to the intervention group participants. In contrast, the five peer educators who delivered the existing peer-led presentations to the control group participants had one to ten years of peer education experience. Another challenge in conducting educational research was encountered in Study 3 (Chapter 6) where the experts conducted an appraisal by watching video-recordings of three peer-led presentations. Each of the presentations was recorded by using a positionally fixed, single-angle video-recorder. The real-time dynamics of the presentations and the audience was not as evident on video as it may have been if the presentations were observed live.

Non-randomisation and self-selection participation in research may have an impact on sampling representativeness (Ives, Traven, Kuller, & Schulz, 1994), validity and generalisability of the findings (Campbell, 1957; Portney & Watkins, 2009). The participants in the present studies were older adults who were eligible in terms of the study's inclusion criteria, and volunteered to participate. The older adults who

participated in the forum, as discussed in Chapter 5, were generally from a higher socio-economic background and were probably a more mobile group of those older adults living in the community because they were required to travel to the forum venue by car or public transport. Similarly, in the quasi-experimental trial in Phase 2 (Chapter 8), the participants were predominantly English-speaking and belonged to community-based groups who met regularly on a social basis. Social integration such as this tends to engender positive health outcomes according to previous research (Cohen, 1988, 2004). As reported in Chapter 8, participants of both the control and intervention groups may be the more mobile, motivated and actively involved members of the older adult population because they reported relatively high levels of knowledge and motivation about falls prevention, even prior to the presentation. Moreover, other studies conducted among older populations (Carter, Elward, Malmgren, Martin, & Larson, 1991; de Souto Barreto, 2012; Norris, 1985; von Strauss, Fratiglioni, Jorm, Viitanen, & Winblad, 1998) have found that older adult respondents in research are generally fitter, have better cognitive function and are more positive compared to non-respondents. Potential sampling bias through self-selected participants in this research may mean relatively frailer, more isolated older adults and adults from other cultural backgrounds were not included in our convenience sample. Results of these studies need to be considered in this context.

A limitation of this research was that the effectiveness of the education program could not be evaluated for its effect on falls-related primary endpoints such as occasions of falling or rate of falling. The program was designed and evaluated primarily to assess its effectiveness in raising levels of beliefs, knowledge, motivation and intention to take up falls prevention strategies, as this had not been previously well investigated in peer-led falls prevention programs. While the results confirmed the program's effectiveness when delivered by and for older adults, it is unknown if an actual change in behaviour to prevent falling would occur subsequent to the participants' reported raised intention and action plan development. Unfortunately, there was only one hour for delivery of the peer-led presentation, and hence, a limited time for conducting the pre-test post-test trial. Given the limited timeframe for data collection, a pragmatic approach using a questionnaire was adopted. However, unlike interviews, with the use of questionnaires there was no opportunity to further explore or identify other potential moderating variables or influences (positive or otherwise) impacting on participants' behaviour subsequent to their reported intention and action plan.

## 9.6 Implications for Practice

Researchers ought to involve older adults to obtain their perspectives prior to, and throughout, the design and development of falls prevention education programs targeting older adults. At the forum, older adults shared their unique perspectives about falls, and exhibited how information and education about falls prevention can be communicated in a respectful and meaningful manner. These perspectives and information gleaned can be applied by healthcare professionals or researchers to enhance any interaction with older adults regarding falls prevention information or education. Health professionals could also seek to involve older adults wherever programs regarding falls prevention are offered. In such situations, older adult committees and peer volunteers could advise and interact with others at falls clinics and day therapy settings. Older adults in this research suggested that falls prevention information could be provided through alternative and more accessible non-health focused sources such as community libraries or seniors' groups.

Training older adult volunteers to grasp new concepts within one training workshop was a challenge, so there may be value in considering dividing the training for Module 2 into two days, or having a refresher follow-up workshop shortly after Module 2 to reinforce key concepts. This contemporary peer-led falls prevention education program, developed as part of the research, has the potential to be translated across to other community-based older adult falls prevention or healthy ageing programs. Organisations could use this program as the resources developed could easily translate to other community settings. However, such organisations would need to have a mechanism to recruit, train and support new volunteer peer educators and adapt the program to cater for local contexts. Alternatively, the contemporary falls prevention education program could be considered as an adjunct follow-up program after health professionals or doctors have identified which older adults could benefit from more support in falls prevention.

## 9.7 Recommendations for Future Research

There is merit in conducting a randomised trial which could evaluate the effect of providing peer led falls education on community-dwelling older adults' engagement in falls prevention strategies. As the primary end-point of falls was not assessed in this

research, another valuable approach would be to undertake a study incorporating falls outcomes as an endpoint, and having sufficient sample size and power for doing this effectively. In addition, it may be worthwhile extending the timeframe for follow-up beyond the one month of this research, to maximise the time that some older adults can realistically follow through and implement their goals in their action plan, and to evaluate the sustainability of any achieved practice change. A further consideration may be to trial the effectiveness of peer-led education as compared to education by a healthcare professional, or as part of multifactorial interventions in a larger RCT.

Some findings in this research suggested that tailored approaches to providing falls prevention education may be beneficial. To explore this, further, there may be value in future research incorporating older adult consumer involvement. In Chapter 8, older adults who reported no prior history of falls were found to be less ready to engage in falls prevention strategies, compared to those who had already fallen. Researchers should incorporate older adults' views in examining how the design of a program could be tailored to accommodate the different perceptions and attitudes of these groups of older adults. Men reported significantly lower levels of knowledge, were less likely to believe that taking measures to prevent falls was useful, and expressed less intention to undertake falls prevention strategies after attending the peer-led falls prevention presentations. Researchers could consult community-dwelling men to explore which approach might raise their intention to engage in falls prevention strategies, and determine whether a tailored peer-led approach, such as a men-to-educate-men presentation format might be a more effective approach.

Culture has been identified as learned social norms, beliefs and values shared amongst a group of people (Betancourt, 1993). It has been shown to influence perceptions in the areas of health-seeking behaviours (Kwok & Sullivan, 2007) and of older adults' in their choice of mobility aids and falls prevention (Aminzadeh & Edwards, 1998; Horton & Dickinson, 2011). Older adult participants in the community forum (in Chapter 5) also discussed the consideration of cultural appropriateness in educational interventions. Consequently, these studies have recommended that falls prevention programs be culturally-sensitive and relevant to the target group (Aminzadeh & Edwards, 1998; Horton & Dickinson, 2011). ICCWA's peer-led falls prevention programs were delivered to both predominantly English-speaking older adult community groups and to groups from other cultures. In this

research, we targeted those English-speaking groups in the community instead of groups from other cultures or ethnicity. However, future research should be conducted to ascertain whether this program is appropriate for older adults from other cultures.

Little is known about cost factor(s) involved specifically with a community-based peer-led education program in falls prevention. A cost-benefit analysis conducted on the Stay on Your Feet® falls prevention program in NSW, of which peer-led presentation was one component, found the community-based program to be cost-effective (benefit-cost ratio 20.6:1) when compared to incurred costs for the health services or avoided hospitalisation costs (Beard et al., 2006). However, this study was conducted at a time when falls prevention education programs were not widely established; hence in Australia and possibly elsewhere this study's methodology may be difficult to replicate. Investigating the cost effectiveness of community-based peer education falls prevention programs could be another potential area for future research.

## 9.8 Conclusion

The primary aim of this research was to design a peer-led falls prevention education program and evaluate its impact on community-dwelling older adults' beliefs, knowledge, motivation, and intention to engage in falls prevention strategies. The peer education approach was found to be an effective means of raising older adults' levels of beliefs, knowledge and intention to engage in falls prevention strategies. Importantly, by using key stakeholders' feedback, relevant adult learning principles and a behaviour change framework to design, implement and evaluate the program, the contemporary education program was found to be significantly more effective than the existing program in encouraging older adults to develop a clear action plan to reduce their risk of falling.

In conclusion, a peer-led falls prevention program can be designed using adult learning principles and a behaviour change framework and be delivered with fidelity to a group of community dwelling older adults in a feasible timeframe and in real-life conditions. Delivering peer-led presentations can raise community-dwelling older adults' belief that they can reduce their risk of falls, increase their knowledge about evidence-based falls prevention strategies and result in them developing a clear personal take home action plan. Peer education may be a valuable addition to community-based falls prevention initiatives for older adults.