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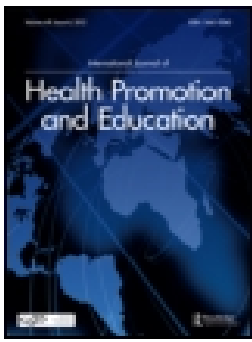
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Design and development of a theory-informed peer-led falls prevention education programme to translate evidence into practice: a systematic approach

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ABSTRACT

Peer-led education has been shown to be an effective approach for raising community-dwelling older adults' beliefs, knowledge and intention to engage in falls prevention strategies in a recent intervention trial. This article outlines the design and development of the intervention, which was a peer-led falls prevention education programme designed to promote older adult's motivation to change their behaviour in the area of falls prevention. The elements of the programme that contributed to its efficacy are also described. The programme was designed using a four-step approach and was based on the constructs of a theoretical framework (the COM-B model). Feedback from older adults was also incorporated into the programme development. Programme components developed were a workshop to train older adult peer educators to deliver falls prevention education, a one-hour peer-led falls prevention presentation, and supporting resources to aid programme delivery. A questionnaire measuring older adults' responses to the presentation was concurrently developed and pilot-tested prior to implementation of the education programme. Finally, resources to monitor and evaluate fidelity at five points in the programme were developed. It was found that seeking older adult consumer involvement, and adopting a theoretical framework-driven approach contributes to effective design and delivery of falls prevention education programmes. This ensured that the programme was acceptable to older adults, feasible to deliver and allowed robust measurement of the effect of the education programme on important behavioural change components.

Introduction

Falls are associated with serious injury and mortality among community-dwelling older adults (AIHW: Pointer, S 2015). There is established evidence that strategies such as exercise and regular reviews of medication reduce both the rate and the risk of falls

(Deandrea et al. 2010; Gillespie et al. 2012). However, community-dwelling older adults have been found to have low levels of knowledge and low levels of engagement with these falls prevention strategies (Haines et al. 2014; Hill et al. 2011; Dickinson et al. 2011; Nyman and Victor 2012) which may be indicative of a gap in translating evidence to practice. A review of peer education proposed that peer educators may have the potential to bridge this gap by raising older adults' awareness, knowledge and motivation to engage in evidence-based falls prevention strategies (Peel and Warburton 2009). Peer education encompasses a range of learning approaches to convey information, values and skills amongst a group people who share similar characteristics such as age (Simoni et al. 2011).

There are a limited number of studies examining the effect of provision of peer-led falls prevention education where an older individual peer provides a presentation to a group of community-dwelling older adults (Allen 2004; Deery, Day, and Fildes 2000; Kempton et al. 2000). However, these studies provided limited description of the underpinning theoretical framework used to guide the design of the programmes that were being evaluated. Using theoretical frameworks to design health-related research has been advocated because interventions are more likely to be effective if they target identified determinants of behaviour central and causal to behaviour change (Abraham and Michie 2008; Davies, Walker, and Grimshaw 2010; Michie and Abraham 2004; Michie et al. 2008). Additionally, the use of a theoretical framework can facilitate reporting of findings, evaluation and replication of the intervention (Craig et al. 2008; Michie et al. 2008). In addition, consumer involvement in research has increasingly been recognised as critical for ensuring successful outcomes, because consumer engagement facilitates the relevance of health research studies to the end users – in this case older adults (National Health and Medical Research Council (NHMRC) 2004).

The research team collaborated with a non-profit community organisation in the Perth metropolitan area (Australia) to develop a new peer-led falls prevention education programme. The theoretical framework which underpinned the programme design was the COM-B model (Michie, van Stralen, and West 2011). The programme was subsequently evaluated in a quasi-experimental trial to examine its impact on community-dwelling older adults' beliefs; knowledge of falls and falls prevention, their intention and motivation to engage in falls prevention strategies across three points of time (Khong et al. 2017). Control group participants ($n = 99$) attended an existing peer-led falls prevention programme and intervention participants ($n = 133$) attended the new peer-led falls prevention programme. Participants in both groups showed raised levels of beliefs, knowledge and intentions to engage in falls preventions following the programme. However, the intervention group was significantly more likely to report a clear action plan to engage in falls prevention strategies compared to the control group (Khong et al. 2017).

This article outlines how the programme was designed and delivered and explains how elements in the programme were mapped against the theoretical framework to promote programme efficacy. Such an approach also allowed researchers to identify elements of the programme that contributed to the positive outcomes of the trial (Craig et al. 2008; Michie et al. 2008). Resources that were developed to monitor and evaluate fidelity to aid in future translation are also described.

Methods

Design

A systematic approach previously developed to guide the design of theory-based behavioural change interventions was followed (see Figure 1) (French et al. 2012). This approach consisted of four steps: (1) identifying the behaviour change problem to be addressed; (2) assessing the problem; (3) forming possible solutions and applying these to the design and development of the programme; and (4) evaluating the selected behaviour change intervention. The components of the final intervention comprised of a training workshop for peer educators, a one-hour presentation to be delivered by peer educators to groups of community-dwelling older adults and supporting resources. The underpinning model of behaviour change theory (the COM-B) has identified three core interactive constructs likely to generate behaviour change. These constructs are Capability, Opportunity and Motivation (Michie, van Stralen, and West 2011). The constructs of the COM-B are linked to behaviour change techniques by use of an implementation framework (Cane, O'Connor, and Michie 2012; French et al. 2012; Thomas and Mackintosh 2014).

Procedure

Step 1: identifying the problem
A systematic literature review of previous reviews of studies was conducted as a step towards identifying the problem and subsequently the required health behaviours that could address this problem (see supplementary material A.1). The review investigated
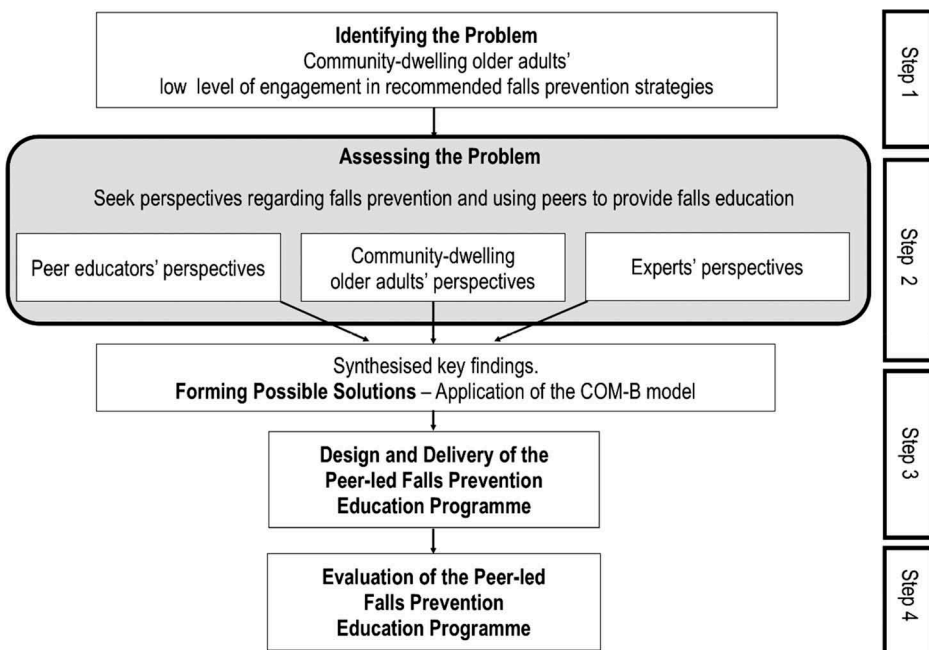

Figure 1. The systematic approach used to design the peer-led falls prevention education programme.

community-dwelling older adults' beliefs, attitudes, perceived enablers and barriers influencing engagement and participation in falls prevention programmes. Seven studies were included in the review which provided detailed findings about barriers and enablers to engaging in falls prevention. Synthesised findings identified that older adults often had low levels of knowledge about falls and a belief that falls were an inevitable consequence of ageing, as well as a social stigma about falls. (Bunn et al. 2008; McInnes and Askie 2004; McMahon, Talley, and Wyman 2011; Dollard et al. 2012; Elskamp et al. 2012; McInnes, Seers, and Tutton 2011; Shaw, Connelly, and McWilliam 2014). Barriers to engagement included a perception that falls were not preventable and that falls messages were not personally relevant. The enabler central to the target behaviour change identified was to promote the personal relevance of falls prevention messages and strategies presented. Given these findings, it was conceptualised that the health behaviour desired was for each community-dwelling older adult to initiate and develop a take-home action plan for engaging in personally applicable evidence-based falls prevention strategies. This target behaviour was chosen to address the identified problem because it was considered a feasible and achievable behaviour for older adults to undertake within the constraints of receiving a one-hour group presentation.

Step 2: assessing the problem

The second step was to assess the problem in depth and identify how the programme design could effectively address the desired behaviour change. The views of key stakeholders were sought with the aim of gaining older adults' perspectives about low levels of engagement in falls prevention and identifying what would need to change to increase their engagement (Bulsara et al. 2016; Khong et al. 2018; Khong et al. 2016; Khong et al. 2015). We explored the perspectives of existing peer educators about their role and the challenges they faced in presenting peer-led falls prevention education (Khong et al. 2015) and the views of community-dwelling older adults about their preferences in seeking and receiving falls prevention information (Bulsara et al. 2016; Khong et al. 2016). Finally, feedback from experts in education, health promotion and falls prevention was sought (Khong et al. 2018).

Feedback from peer educators, who already provided falls prevention education, identified that they could engage effectively with their peers on a personal level via the peer-to-peer connection in delivering the falls prevention message. However, they also believed that if they received more support, through training and extra resources, this would enhance their effectiveness (Khong et al. 2015). Community-dwelling older adults suggested that falls education should be delivered with a positive tone, coupled with respect and empathy and include simple practical strategies to adopt (Bulsara et al. 2016; Khong et al. 2016). The experts' feedback summarised that falls prevention messages and presentations should be interactive and encourage older adults to develop a personalised action plan (Khong et al. 2018).

Step 3: forming possible solutions and applying these to the design and development of the peer-led falls prevention education programme

Findings from Step 2 strongly suggested possible solutions. These were that any falls prevention education that sought to encourage older adults to engage in falls prevention strategies should (i) emphasise the personal relevance of falls prevention information;

(ii) convey information with respect; (iii) consider using trained peers as a credible source of information; (iv) tailor and personalise the falls prevention information provided; and (v) emphasise the positive benefits of engaging in falls prevention to enhance motivation for uptake.

These key findings were incorporated into the design and development of the education programme. The COM-B model of health behaviour change was also applied to the design of each element of the programme (Cane, O'Connor, and Michie 2012; Michie et al. 2013; Michie, Atkins, and West 2014; Michie et al. 2014; Michie, van Stralen, and West 2011). The COM-B model explains that for a change to occur the individual must have the 'capability' to engage in it, the 'opportunity' provided in a conducive physical and social environment, and sufficiently strong 'motivation' to perform the 'behaviour' (Michie, van Stralen, and West 2011; Michie, Atkins, and West 2014). Based on the existing programme that we were comparing to, the peer educator was constrained to presenting to a group of peers within a one-hour time frame in the new education programme. Hence, the COM-B model's techniques chosen were those thought to be feasible and effective to be used by peer educators during a one-hour group presentation. These techniques included role-modelling and verbal persuasion, which the peer educators could use to foster their peers' capability during the presentations, as well as a means of motivating older adults to accept the personal relevance of the falls prevention messages provided.

Overview of the programme. The new education programme (Figure 2) consisted of three components: (i) a two-day workshop to train new peer educators; (ii) a new one-hour falls prevention presentation for peer educators to provide to groups of older people; and (iii) training resources for the facilitator of the workshop and the peer educators.
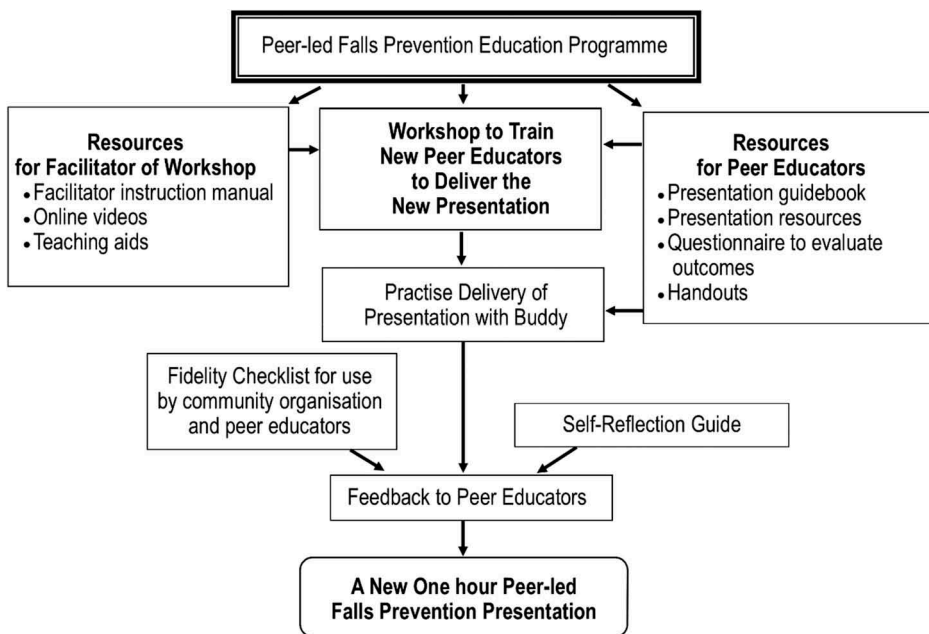

Figure 2. Programme components and the process undertaken to train peer educators to deliver the education.

Day 1 of the workshop was designed for the peer educators to gain a factual understanding of the nature of falls in the community, the risk factors for falling and the evidence-based strategies for managing those risk factors. Day 2 of the workshop was for the peer educators to learn the pedagogical skills to engage with their peers positively and to subsequently deliver the falls prevention presentation effectively to groups of community-dwelling older adults. This included introducing COM-B techniques to foster a change in behaviour, different learning styles and relevant adult learning principles to the peer educators. During the workshop, the role of peer educators was explained as being role models in the area of falls prevention, encouraging the uptake of falls prevention strategies by their peers (older adults who attended the presentation) and facilitating the learning about falls prevention. The peer educators were advised to emphasise the positive benefits of preventing falls when they conducted the presentations. To foster personal relevance of the falls prevention message, the peer educators were trained to deliver the presentation to community groups of older adults in an interactive manner that encouraged each older adult to tailor the information learned by setting personalised goals and completing their own take-home action plan at the end of the presentation. Strategies emphasised included exercise, home hazard modification, safe footwear and review of medications.

A new one-hour peer-led falls prevention presentation was designed and developed by the research team to be delivered by the newly trained peer educators. Table 1 illustrates how the design and development of the structure and content of the presentation was mapped against the framework of the behaviour change concepts (COM-B model) and adult learning principles (Cane, O'Connor, and Michie 2012; Merriam and Bierema 2014; Michie et al. 2008; Michie, van Stralen, and West 2011; Michie et al. 2013; Michie, Atkins, and West 2014).

The presentation was designed to be interactive throughout the hour, with the peers facilitating discussion and short learning activities. It was structured and sequenced to scaffold new knowledge using relevant adult learning and pedagogical strategies (Anderson, Krathwohl, and Bloom 2001; Merriam and Bierema 2014). The peer educator commenced the presentation by discussing factual knowledge about falls and falls prevention, which aimed to raise awareness and understanding of falls as a relevant problem for the audience. This information was followed by procedural knowledge in the form of encouraging the older adults to discuss steps and strategies required to reduce the risk of falling. Finally, conceptual knowledge was considered by applying and consolidating learned information regarding engagement (commencing and sustaining participation) in falls prevention strategies. Such knowledge included inviting each older adult to complete a written, personal take-home action plan on a handout (Merriam and Bierema 2014; Michie et al. 2013).

Resources to support Day 2 of the workshop were developed. An instruction manual with corresponding presentation slides and teaching aids was designed for facilitators to engage the participants in the workshop. The teaching aids included flip-charts, activity sheets, a learning style questionnaire and online video (available on request to the authors) links to provide relevant multimedia learning platforms. The workshop

Table 1. Mapping of the theoretical frameworks and adult learning principles to address identified barriers to engagement in falls prevention.

Identified barriers[a]	Behavioural change constructs[b]	Intervention function[c]	Behaviour change technique[d]	Application of adult learning principles to all categories
Belief that falling will not happen to me	Motivation	Education	Information about social, physical and emotional consequences of falling	Assess older adults' current expectations by drawing on their prior learning experiences regarding falling
	Knowledge	Persuasion[e] Modelling	Using a credible source (another peer) Role modelling (peer to peer)	Engender a connection between the peer educator and their peers Scaffold learning by starting with initial introduction to prevalence of falls, reframing learners' perspectives, gradually progressing to management of falls risks in stages
Belief that falls prevention is a threat to self-identity	Opportunity	Enablement	Social comparison	Recognise diverse learning styles: demonstration, pictures, video or checklists as learning aids during presentation to impart information
Belief that falls prevention is not socially acceptable	Motivation	Persuasion[e]	Framing/reframing perspectives	Engage in metacognition: provide knowledge but also cultivate the skills, foster self-efficacy and influence positive attitudes towards falls-related behaviour
	Social identity and influences	Modelling	Using a credible source (another peer)	Be explicit about the positive benefits of falls prevention
Unfamiliar with term 'falls prevention' and low awareness of falls prevention	Attention and decision processes	Training	Instruction on how to perform falls prevention strategies	Using peer educators to share positive personal anecdotes relating to falls prevention that older adult peers can also relate to. To facilitate a positive self-identity and foster self-efficacy
Lack of knowledge about falls prevention	Knowledge	Enablement	Demonstration about feasible/relevant falls prevention strategies or anecdotes by role-model (peer educator engaging in falls prevention)	Tailor the falls prevention information to meet the goals of the older adult and build on their experience of falls prevention
Falling is an inevitable part of ageing and beyond personal control	Intentions		Problem-solving to overcome barriers	Promote self-directed learning: provide access to resources, e.g. hotline, information, booklet
	Goals		Action planning and goal setting	Develop a personal take-home action plan
Lacking skills or self-confidence to engage and practise falls prevention	Develop skills	Modelling	Pros and cons (weigh up benefits and costs in engaging in falls prevention)	
	Foster self-confidence	Persuasion[e]	Verbal persuasion about one's capabilities	
			Focus on past success Using a credible source (another peer)	

[a]Evidence-based barriers identified in the literature.
[b]Behavioural change constructs: these are part of the domains derived from the COM-B model and Theoretical Domains Framework.
[c]Intervention function: term used to describe mechanisms of action based on Theoretical Domains Framework (implementation framework).
[d]Behaviour change technique: specific strategies used in the programme to promote change in the falls prevention behaviour.
[e]Persuasion: verbal persuasion used by the peer educator to boost their peers' (older adults) levels of motivation and capability to stimulate action (Michie et al. 2013).

included five activities that were designed to draw on the new peer educators' own experience during the learning process in an interactive manner, namely, as follows:

- Creating a supportive learning environment. This included icebreaker activities that aimed to promote a comfortable learning environment for the volunteer peer educator.
- Understanding the underlying concepts of health behaviour change. These activities aimed to highlight concepts from the COM-B model and the relevant behaviour change techniques to foster behaviour change among the older adults in the community groups.
- Learning styles: These activities aimed to highlight varying the presentation format to reflect different learning styles and preferences.
- Adult learning: These activities aimed to impart information to the peer educators about relevant adult learning principles; in particular how to facilitate active learning by the older adults who would attend the presentations.
- Presentation skills training: This included short practice presentations in a supportive learning environment.

Additional resources for the peer educators were also developed to provide self-directed learning opportunities after the workshop. An online video with training prompts (available on request to the authors) was created which could be viewed repeatedly by the peer educators. The video displayed an experienced university falls prevention educator modelling the new falls prevention presentation in an interactive manner to a community group of older adults within a one-hour time frame.

Each peer educator received a presentation guidebook (available on request to the authors) that included the information imparted during the 2-day workshop and the teaching plan for delivering the presentation. Eight activities following the structure of the presentation and the learning objectives were also detailed in the guidebook. Each activity provided the peer educator with a step-by-step script for delivering the relevant section of the presentation and outlined their teaching activities for each section.

Following the workshop, the community organisation booked each peer educator to conduct their first falls prevention presentation, with support from a 'buddy'. Their buddy was another older adult peer educator who had experience in delivering the falls presentation. The buddy chosen was usually someone they had interacted with as part of the community organisation volunteer programme. This buddy system was used as a means of support for the peer educator to learn and receive feedback as the presenter practised delivering the presentation (Lamb, Lane, and Aldous 2013). A self-reflection report (Bennett, Rolheiser, and Stevahn 1991) and a fidelity checklist (online supplementary material A.2) (Bellg et al. 2004) provided further opportunity to facilitate self-directed learning and to ensure programme fidelity respectively. In addition to the training workshop, the peer educators were supported by a staff member at the community organisation's falls prevention unit and by other peer educators through regular meetings conducted by the organisation.

Step 4: evaluating the selected behaviour change intervention (older adults' response to the peer-led falls prevention education presentation)

A purpose-designed semi-structured questionnaire was developed to measure the effectiveness of the peer-led falls prevention presentation on behavioural change outcomes of interest. The questionnaire design was based on concepts from studies that evaluated health behaviour change using the COM-B model (Cane, O'Connor, and Michie 2012; Hill et al. 2009; Huijg et al. 2014). The outcomes that were measured were community-dwelling older adults' beliefs and knowledge about falls prevention and their motivation and intention to engage in falls prevention strategies (Table 2).

Establishing validity and reliability of the questionnaire. Ten academic and health professionals with falls prevention or questionnaire design experience were invited to evaluate the questionnaire's content validity. A further six community-dwelling older adults, with a similar profile to the target sample, were invited to complete the questionnaire to establish face validity and to provide further feedback about the comprehension of the item statements and ease in completing the questionnaire. Finally, the revised questionnaire was pre-tested with 16 older adults from another two community-based groups to improve its readability and to clarify the instructions provided. Test–retest reliability of the questionnaire was conducted with 49 community-dwelling older adults. Briefly, results showed that the questionnaire was a reliable instrument for assessing the health behaviour change outcomes (detailed results reported elsewhere) (Khong et al. 2017).

Pilot trial of the questionnaire. A pilot trial to examine the procedure of completing the questionnaire across three points of time (before and after the presentation and one month following the presentation) was subsequently conducted with older adults (*n* = 46) who attended the existing education programme's presentations. The pilot trial was conducted to evaluate the ease of administrating the questionnaire longitudinally, to assess the response rate and to identify any further issues that arose. The format of the questionnaire and instructions for the data collection process were revised based on the feedback received.

Table 2. Questionnaire evaluating the outcomes of providing the peer-led presentation.

Outcome measures and questionnaire item statements[a]	Measurement scale
Beliefs about falling and falls prevention	
1. For me, taking measures to reduce my risk of falling would be useful	Likert scale[b]
2. Most people whose opinion I value approve of me taking measures to reduce my risk of falling	Likert scale[b]
Levels of knowledge about falls prevention	
3. I am aware of the measures needed to reduce my risk of falling	Likert scale[b]
4. I am confident that if I wanted to, I could reduce my risk of falling	Likert scale[b]
Motivation to reduce risk of falling by engaging in falls prevention strategies	
5. I feel positive about reducing my overall risk of falling	Likert scale[b]
Intention and a plan to undertake falls prevention strategies	
6. In the next month, I intend to take measures to reduce falls or my risk of falling	Likert scale[b]
7. I have a clear plan of how I will take measures to reduce falls or my risk of falling	Likert scale[b]
8. List up to 3 ways (measures) that you could take in the next month, which will help you avoid falling or the risk of falling	Open-ended response

[a]The final section of the questionnaire (not shown) was designed to collect participants' socio-demographic information.
[b]Score 5, strongly agree; 4, agree; 3, undecided; 2, disagree; 1, strongly disagree.

Programme fidelity. It was important to determine if the efficacy of the behaviour change intervention (the peer-led education) was mediated by the fidelity of programme delivery. Fidelity of a programme is the extent to which the programme is conducted as planned, and is viewed as integral to the interpretation of the evaluation and generalisation of its findings (Bellg et al. 2004; Borrelli et al. 2005). The fidelity of the peer-led falls prevention education programme was monitored at five key points during the research (see Table 3) to facilitate future replication and further the cause of robust programme evaluation in other settings (Bellg et al. 2004; Borrelli et al. 2005). A fidelity checklist was also produced for the community organisation and the peer educators to utilise (online supplementary material A.2).

Programme translation. Finally, consideration was given to reporting the intervention for future research evaluation and translation (Bellg et al. 2004; Michie and Abraham 2004). The education programme was mapped using the template for intervention description and replication checklist (Hoffmann et al. 2014) (Table 4).

Results and discussion

The development and associated resources to support a refined peer-led falls prevention education training and delivery programme has been described in this article. These provide a framework for clinicians and researchers to understand and reproduce the programme in future.

Strengths of the programme development include that this new education programme was designed and described in terms of its underlying theoretical framework using the COM-B model and specific fidelity considerations, to facilitate potential replication for further evaluation in other health promotion and falls prevention trials.

This peer-led education programme was subsequently evaluated and was found to be an effective approach for translating evidence into practice in falls prevention, by significantly raising community-dwelling older adults' levels of beliefs and knowledge about falls prevention and intention to engage in evidence-based strategies. The results of the programme evaluation are reported in detail elsewhere (Khong et al. 2017). The efficacy of the intervention could be attributed to the four-step method of the design, which involved older adults as consumers, and sought theirs and other stakeholders' feedback. This enhanced the programme by keeping older adults' preferences in mind, such as offering practical solutions to prevent falls and ensuring the message was personally relevant with a personal action plan. Additionally, concepts of education which are known to support adult learners were specifically incorporated into the programme.

Conclusion

A four-step systematic approach was used to design, develop and implement a peer-led falls prevention programme for older adults. It is recommended that falls prevention education programmes designed for older adults seek key stakeholders' feedback, identify elements that would promote engagement of the intended messages to the older adults concerned, and are delivered using behaviour change techniques, relevant adult learning principles and pedagogical strategies.

Table 3. Fidelity considerations and application for the peer-led falls prevention education programme.

Component of fidelity[a]	Definition and description for the programme	Fidelity plan for the programme	To be completed or managed by:
Design	Study design intended to ensure that the study can adequately test its hypotheses in relation to the underlying theory	Evaluation of a new peer-led falls prevention education programme The peer-to-group new falls prevention education programme is compared to an existing programme Testing of outcomes is underpinned by theoretical framework	Research team
Training	Assessment and ongoing evaluation of training of peer educators to ensure they have been satisfactorily trained to deliver the intervention to participants	• Use of a standardised guidebook	Research team
		• Use of a facilitator instruction manual, presentation slides and teaching aids • Accommodate learner differences • Role-play during the training workshop	Community organisation
Delivery	Fidelity processes that monitor the intervention is delivered as intended	• Observation of presentation delivery by an independent person	Research team
		• Application of the after presentation fidelity checklist	Community organisation
		• Ensure adherence to protocol e.g. content, sequence, dose (time) and process • Feedback to pertinent peer educator • Discussion and support to correct any observed problems in delivery of the presentation • Use of buddy system to provide support and feedback	Peer educator
Receipt	Assessment of the presentation to ensure that the information presented has been understood by the older adults	• Use of the peer educator's self-reflection report • Ensured written material provided have appropriate health literacy for older adults	Research team
		• Information provided utilised multiple formats (verbal, video, written) • Feedback to peer educators after their presentation • Evaluate older adults' understanding of the information provided	Community organisation
Enactment	Assessment of the participants' engagement and uptake of falls prevention strategies	• Questionnaire outcomes, for example, level of intention	Research team (conduct evaluation trial). Trial results (Khong et al. 2017) Community engagement officer (assess older adults' response to subsequent presentations and provide feedback to peer educators)

[a]Bellg et al. (2004).

Table 4. Reporting of the education programme using the Template for Intervention Description and Replication (TIDieR).[a]

Elements of checklist	Applied in the study
Precise name that describes intervention	Can peer education improve beliefs, knowledge, motivation and intention to engage in falls prevention amongst community-dwelling older adults?
Why: Describe any theory essential to the intervention	COM-B model was used to guide the design, delivery and evaluation of the intervention. Relevant adult learning principles were integrated into the education programme
What (materials): Describe any physical or informational materials used in the intervention (in delivery or for providers)	Resources for training new peer educators in the workshop and for delivery of the presentation such as facilitator instructional manual and resources, a training video, peer educator guidebook, a fidelity checklist, and questionnaire were described
What (procedures): Describe each of the procedures, activities, and/or processes used in the intervention	Recruitment of new volunteer peer educators (Khong et al. 2017), training of educators, peer educators delivered presentations and the steps taken to train new peer educators were described
Who provided: the intervention provider. Describe their background and any specific training given	The community organisation was described. The recruitment of new volunteers and the steps taken to train new peer educators were described
How: Describe the modes of delivery. When and how much	One-off one-hour presentation by a peer educator to a group format was described. The workshop to train peer educators was conducted over two days
Where: Describe the type(s) of location(s) where the intervention occurred	The presentations were delivered to groups of older adults in the community that meet on a social-basis. These are generally held at venues in the community such as community centres
Tailoring: if the intervention was planned to be personalised, titrated or adapted, then describe what, why, when and how	Presentation format allowed for tailoring for individual older adult member with development of a personal take home action plan
Modifications: if the intervention was modified during the course of the study, describe the changes (what, why, when and how)	Each community site had varying access to multimedia facilities. Butchers' paper or posters and personal handouts were alternative media when a DVD player was not available
How well (planned): if intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them	A fidelity checklist was developed for use by the peer educator and the community organisation to evaluate the presentations. The fidelity considerations were described in Table 3
How well (actual): if intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned	All the presentations were delivered by trained peer educators, feedback was given to the peer educator after each presentation, resources such as online video and guidebook were available self-directed learning, a questionnaire completed by participants assessed their responses to the presentation

[a]Hoffmann et al. (2014).

Peer-led education which has been designed using behaviour change theory is an effective means of addressing older adults' low levels of knowledge and engagement in falls prevention strategies. The development of this new peer-led programme may provide a useful approach for researchers or organisations that are developing falls prevention education in other settings, or for other areas of health education and programme development.

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Authors' contributions

All the authors contributed to the conceptualisation, design and development of this programme. LK was primarily responsible for the programme design, development and implementation as part of her doctoral research. RB was instrumental in coaching LK in the concepts of education theories and adult learning concepts relevant for the programme and the questionnaire. AMH and KH contributed and guided LK with the programme's workshop, presentation and training resources. AMH was the role model for the online training video and contributed significantly with the implementation of the programme. All the authors were involved in drafting of the manuscript and approved the final manuscript.

Ethical consideration

This study was approved by The University of Notre Dame Australia's Human Research Ethics Committee.

Availability of materials

The materials are available from the corresponding author on reasonable request.

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