

ResearchOnline@ND

The University of Notre Dame Australia
ResearchOnline@ND

Physiotherapy Papers and Journal Articles

School of Physiotherapy

2016

Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting

Jo-Aine Hang

Jacqueline Francis-Coad

The University of Notre Dame Australia, jacqui.francis-coad@nd.edu.au

Bianca Burro

Debbie Nobre

Anne-Marie Hill

Follow this and additional works at: https://researchonline.nd.edu.au/physiotherapy_article



Part of the [Physical Therapy Commons](#), and the [Physiotherapy Commons](#)

This article was originally published as:

Hang, J., Francis-Coad, J., Burro, B., Nobre, D., & Hill, A. (2016). Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting. *Geriatric Nursing*, 37 (6), 464-469.

Original article available here:

[10.1016/j.gerinurse.2016.06.019](https://doi.org/10.1016/j.gerinurse.2016.06.019)

This article is posted on ResearchOnline@ND at
https://researchonline.nd.edu.au/physiotherapy_article/153. For
more information, please contact researchonline@nd.edu.au.





©2016. This manuscript version is made available under the CC-BY-NC-ND 4.0 International license <http://creativecommons.org/licenses/by-nc-nd/4.0/>

This is the accepted manuscript version of an article published as:

Hang, J., Francis-Coad, J., Burro, B., Nobre, D., and Hill, A. (2016) Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting. *Geriatric Nursing*, 37(6), 464-469. doi: 10.1016/j.gerinurse.2016.06.019

This article has been published in final form at
<https://doi.org/10.1016/j.gerinurse.2016.06.019>

Title

Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting

Authors

Jo-Aine Hang BSc Phty (Hons), ^a Jacqueline Francis-Coad MCLin Phty, ^a Bianca Burro BSc Phty (Hons), ^a Debbie Nobre BA (Social Sciences), ^b Anne-Marie Hill, PhD ^c

^aSchool of Physiotherapy, The University of Notre Dame Australia, Fremantle

PO Box 1225 Fremantle WA Australia 6959

jacqui.francis-coad@nd.edu.au, bianca.burro@nd.edu.au

^bAllied Health Consultant, Brightwater Care Group, Osborne Park, Western Australia

Brightwater House Central Office, Level 3, 355 Scarborough Beach Rd, Osborne Park WA

Australia 6017

debbie.nobre@brighwatergroup.com

^cSchool of Physiotherapy and Exercise Science, Faculty of Health Sciences, Curtin

University, Kent St, GPO Box U1987, Perth WA 6845Jac

anne-marie.hill@curtin.edu.au

Corresponding author

Miss Jo-Aine Hang BSc Phty (Hons)

School of Physiotherapy

The University of Notre Dame Australia

PO Box 1225 Fremantle WA Australia 6959

Ph: +61 8 94330239

Fax: +61 8 94330556

Email: joaine.hang1@my.nd.edu.au

Acknowledgements

The authors would like to thank Community of Practice members, facility managers, nursing and care staff at the participating Brightwater care group site for their support and assistance in conducting the study.

1 **Title**

2 Assessing knowledge, motivation and perceptions about falls prevention among care staff in

3 a residential aged care setting

4

ABSTRACT

Falls are a serious problem in residential aged care settings. The aims of the study were to determine the feasibility of surveying care staff regarding falls prevention, and describe care staff levels of knowledge and awareness of residents' risk of falls, knowledge about falls prevention, motivation and confidence to implement falls prevention strategies in a RAC setting. A custom designed questionnaire was administered to care staff at one site of a large residential aged care provider organization in Australia. The survey response was 58.8%. Feedback from staff was used to inform the administration of the survey to the wider organization. Seven (29.2%) care staff reported they were unsure or thought residents were at low risk of falls. Only five (20.8%) care staff were able to suggest more than three prevention strategies and only 13 (54.2%) were able to describe the residents' falls prevention plans. These preliminary findings suggest that education to change care staff behavior regarding falls prevention should target improving care staff knowledge and awareness of falls.

Introduction

Falls are a serious problem in residential aged care (RAC) settings with studies demonstrating up to 50% of the residents fall over within 12 months of admission.^{1,2,4} Falls rates among this population have been found to be approximately 1.6 falls per bed per year.^{1,3} and these falls frequently result in injury and disability^{3,4,5} with an estimated incidence rate of hip fracture between 3% and 5% annually.^{3,6,7} Risk factors for falls among residents include a history of falls, use of walking aids, reduced balance and some categories of medication,^{8,9} but studies identify that in RAC and hospital settings environmental factors such as lighting, bed height and flooring are also strongly implicated in patient falls.^{1,8,10}

These frailer, older people are often restricted in activities of daily living (ADL) (81.3% have some form of disability) and it is estimated that 68% have a cognitive impairment, meaning they are potentially more vulnerable to falls.¹¹ Therefore undertaking falls prevention strategies independently, on a daily basis, may be beyond the physical and cognitive capabilities of the majority. Hence, care staff are important stakeholders in assisting residents to prevent falls in RAC settings.^{8,12} Care staff, also known as certified nursing assistants or care workers in Australia,¹³ are responsible for supporting nurses in providing patient care. They provide direct assistance to residents for ADL, but do not undertake university education and may only have undertaken informal workplace training.¹⁴ Previous studies have estimated that care staff in RAC spend approximately 45.4% of an eight hour shift on direct care¹⁴ as compared to allied health professionals, such as physiotherapists, who spend an average of 2.3% of an eight hour shift on direct care in this setting.¹⁵

RAC organizations in Australia are required to meet the accreditation standards set out by the Australian Aged Care Quality Agency (AACQA) to ensure high quality care is delivered to

44 residents. This requires care staff to be equipped with knowledge and skills to perform their
45 roles effectively.¹⁶ Care staff are required to directly undertake falls prevention strategies
46 with residents and also complete indirect falls management procedures such as
47 communicating care plan changes to other staff, informing new care staff about falls
48 prevention strategies used for residents and translating new evidence into practice in a timely
49 manner.¹⁷ Previous research has also found that care staffs' perceptions of falls and patient
50 safety culture have an impact on falls prevention. Care staff awareness and knowledge of
51 falls prevention strategies can improve adverse event reporting.^{10,18} A previous study
52 surveyed nursing assistants to validate a scale that can be used to assess their perceived self-
53 efficacy in preventing falls for the patients they cared for.¹⁰ Whilst care staff self-efficacy has
54 been evaluated there is limited research regarding their knowledge and motivation to prevent
55 falls in a RAC setting.

56 The aims of this study were to i) determine the feasibility of conducting a survey of care staff
57 in RAC regarding falls and falls prevention; ii) describe care staff levels of knowledge and
58 awareness of residents' falls risks, knowledge about falls prevention, and motivation and
59 confidence to provide falls prevention strategies in a RAC setting.

60

61 **Methods & Procedure**

62 Study Design

63 This was a feasibility study using a cross-sectional survey. This research was approved by the
64 University human research ethics committee and the RAC organization. Care staff were
65 provided with information about the study and those who consented to participate completed
66 the survey anonymously. This study was part of a larger study conducted within the RAC
67 organization, which was evaluating how a group of staff leaders in falls prevention could
68 translate falls prevention evidence into practice across the organization.¹⁹ All staff working in
69 the organization were informed of the data collection period for the larger study. The larger
70 study received ethical approval from the University human research ethics committee and the
71 RAC organization.

72 Setting

73 This research was conducted at a selected site of a large RAC organization in Australia.
74 There were 62 residents with differing care needs and functional ability, including residents
75 with dementia living at the site. The site consisted of four residential wings, which were
76 combined with communal living areas and gardens to form a single home like environment.
77 This RAC site was one of the 13 sites operated by the RAC provider organization, which has
78 a central corporate office providing on-going training and support for staff at all sites. New
79 care staff receive two days orientation training including Occupational Health and Safety
80 process and general manual handling for both care staff and residents' safety. Orientation
81 does not include dedicated information on resident falls, falls risk factors or falls prevention
82 strategies. The pilot site was one of six (46.2%) RAC sites within the organization which
83 provided an annual tutorial for ongoing falls education for care staff at their site staff

meeting. However falls education content varied in quality, was not standardized across different sites of the organization and was attended by limited numbers of staff.

Participants and Recruitment

Recruitment took place between January 1st and March 31st 2015. There were forty one care staff working at the site and all were invited to participate in the pilot study. Inclusion criteria were that the staff member had been working at the site for a minimum of 3 months, was aged over 18 years and was able to read and write English sufficiently to respond to the survey.

Questionnaire Development

A questionnaire was developed, using principles of questionnaire design²⁰ to describe and explore care staff knowledge, motivation, confidence and awareness regarding falls prevention at RAC sites.²¹ The questionnaire consisted of 36 items which used a mix of open and closed-ended responses to collect quantitative and qualitative data. The Likert scale was chosen to provide response options for closed ended items, as this is the most frequently used scale in psychology and education for rating beliefs, opinions and attitudes which cannot be measured precisely.²² Potential participants were care staff who had undertaken a variety of training, ranging from informal to certified technical college programs. Therefore questions were written using simple, clear and unambiguous language to ensure the questionnaire could be completed by participants with varying levels of literacy, such as those care staff who spoke English as a second language. The questionnaire was assessed using the Flesch-Kincaid readability index program to ensure the questionnaire was at an appropriate English literacy of seventh-grade level.^{23,24}

The framework of the questionnaire was based on the COM-B model of behavioral change. This model explains that capability, opportunity and motivation are key determinants of

engagement in health behaviors.²⁵ The questions were designed by the research team which included RAC site staff who operated a falls prevention community of practice (CoP). The questions were based on other validated questionnaires, which investigated knowledge and attitudes about falls prevention including falls awareness in residential aged care settings, self-efficacy of nursing assistants regarding falls prevention and knowledge about falls prevention.^{10,26,27,28,29} The domains covered in the questionnaire were care staff's perceptions about falls or near falls experience among the residents they cared for, translation of evidence based falls prevention strategies into practice during their rostered work shift, their previous experience of falls prevention training and the type of falls prevention training they would like to have in the future. Two open-ended questions asked care staff to list strategies they thought could help prevent residents they cared for from falling and briefly describe the actions they would take if a resident has fallen over during their shift. A final open ended question asked staff to provide any suggestions that would help to make the questionnaire easier for other care staff to answer. The questionnaire was then administered to five care staff at a RAC site separate to the site selected for the study using a "talk through" approach to validate the draft questions with care staff.^{20,30}

Procedure

The researchers attended a site staff meeting to provide information to staff about the study. Subsequently the questionnaire was stapled to the payslip of every care staff member and was advertised by the site managers using informative posters (researcher developed) attached to the announcement boards together with verbal reminders at staff meetings and handovers during each shift. Care staff consented to participate in the survey by completing the questionnaire, which contained a statement implying that submitting the questionnaire confirmed their consent to participate in the study. Completed questionnaires were placed in a sealed collection box in the staff room.

Statistical Analysis

All quantitative data were managed using IBM SPSS statistics for Windows (or mac) (SPSS 22). Quantitative data were summarized using descriptive statistics. Results were presented using frequency tables and percentages. All qualitative data obtained from open ended questions and verbal staff feedback were analyzed using content analysis.³¹ These data were entered verbatim onto a Microsoft Excel (2013) spreadsheet [Microsoft Corporation, Washington, USA] and coded using color highlights. Two researchers independently coded and grouped the data then met to discuss interpretation. Any disagreements were arbitrated by the third researcher. Responses were then organized using open coding, category creation and abstraction. Notes and headings were made in the text margins during reading to holistically describe the content. Multiple categories were generated from the headings copied onto coding sheets. These were then grouped under higher order headings to reduce the number of categories through the collapse of like and unlike categories. The abstraction process involved applying content-specific words to each category. WORDLE™ was also used to triangulate generation of researchers' codes and categories in the open-ended questions.³² Subcategories with similarities were then described using a generic category and finally an overarching main category.

Results

Feasibility

There were 41 staff who were eligible to complete the survey with the response rate for survey completion by staff being n=24 (58.5%). Actions planned to improve the procedural feasibility of administering the questionnaire are presented in Table 1.³³

Findings from the survey

There were 20.8% (5) male and 79.2% (19) female participants who completed the questionnaire with 54.1% (13) of them being over 50 years old. Education levels ranged from a university degree [n=2, (8.3%)], to 20.8% (5) finishing year 10. Twenty-two (91.6%) care staff had more than a year of experience working at a RAC site with 50.0% (12) of them working both morning and afternoon shifts. Eight (33.3%) care staff did not speak English as their first language but only 12.5% (3) reported that they experienced difficulty in writing English and only one participant reported difficulty in reading English.

Only 20 care staff (83.3%) responded to the open ended question which asked them to describe a fall. Thirteen subcategories were identified and described under four generic categories. The generic category describing a fall as unexpected in nature (n=18) was identified using words such as sudden loss of balance during ambulation due to slip and falls. Other categories identified were the presence of resident risk factors (n=5), consequences of falls (n=3) and landing at a lower level (n=5).

Care staff responses to closed-ended questions are presented in Tables 2 and 3.

Open responses listing falls prevention strategies suggested by 21 (87.5%) care staff and the actions care staff would take after a resident had fallen are presented in Table 4 and 5 respectively.

Twenty care staff identified at least one barrier to carrying out falls prevention strategies in their workplace. These were grouped into four generic categories: lack of manpower (n=10), lack of information (n=5), non-compliant residents (n=2) and unsafe environment (n=2). Lack of manpower was explained as either time pressure to perform pre-existing duties (n=5) or a low staff to resident ratio (n=5).

While 18 (75.0%) care staff were aware of falls prevention plans for the residents they cared for, four (16.7%) were unsure if the residents they cared for had a falls prevention plan in place. When asked to describe the plan, 13 (54.2%) care staff responded but only 3 (12.5%) care staff identified more than three planned falls prevention strategies. Items sub-categories included assistance for mobility (n=3), having equipment such as sensor mats and alarm to prevent falls (n=3), the use of physical restraints (n=2), education to residents (n=2), medication (n=2) and the use of falls risk alert stickers (n=2).

Twenty (83.3%) care staff wanted reminders to carry out falls prevention strategies. A variety of reminders to action falls prevention strategies were requested by five (20.8%) care staff. Seventeen (70.8%) respondents stated a preference for posters displayed around the site, 54.2% (13) preferred a picture checklist in the resident's file while 50.0% (12) expressed a preference for a written checklist in the resident's file. Gaps in falls prevention training were identified in Table 2 and 3.

Discussion

This study provided some evidence that surveying care staff was a feasible means to evaluate their potential for behavior change around falls prevention. The response rate (58.8%) for this survey was within the acceptable range of survey response rates (30-60%) suggested in the literature,²¹ however modifications to the survey procedure and content were planned with the intent of improving future response rates. Researchers identified what actions the research team needed to take to potentially improve care staff participation in larger surveys of this kind and proposed actions that were framed around behavioral change techniques (BCTs) to address these.^{33, 34} Behavioral change techniques are defined as “an active component of an intervention designed to change behavior.”³⁴(p234) Specific consideration was given to the feedback provided by care staff regarding their participation in the survey and completing the questionnaire. While it appeared feasible to survey care staff, several potential facilitators to recruitment and completion were identified. For future research, we recommend questionnaires be distributed by a registered nurse at shift handover following a verbal explanation of questionnaire purpose to provide a more personal approach for facilitating recruitment and completion. As the RAC organization’s expectation for completing questionnaires was during working hours, care staff found it challenging to prioritise the time to complete the questionnaire. Future participating RAC sites within the organization will be provided with suggested facilitators to maximise recruitment and response rate. Feedback from the staff who piloted the questionnaire included replacing words which were not easily comprehended and setting out the survey so it was more spacious and had larger tick boxes making it easier to complete as a paper copy. This feedback was incorporated into the final questionnaire design. *(The finalized questionnaire can be provided as an online Appendix).* A procedural guideline for administering the survey in future to other RAC sites was also developed *(This can be provided as an online appendix).*

218 Preliminary findings from this survey demonstrate that RAC care staff have low levels of
219 capability (awareness and knowledge)²⁵ regarding falls and falls prevention, which may be
220 attributed to the lack of mandatory education on falls prevention during orientation training
221 and ongoing education. Even though older people living in RAC settings have been shown to
222 be at a high risk of falls,^{3,4,6,35} over 75% of the care staff surveyed reported that they were
223 unsure or thought that the residents were at moderate or low risk of falls, and only 70% were
224 aware that residents had a falls prevention plan in place. Half of the care staff who responded
225 were not aware that 50% of residents in a RAC setting fall annually.^{3,4,6} Since care staff
226 spend the most time with residents,¹⁴ a low awareness of falls risk could mean they may not
227 interpret resident cues that should prompt initiation of relevant falls prevention strategies.²⁵

228 Most care staff who responded to the survey indicated they were motivated to implement fall
229 prevention strategies in a RAC setting. However, despite high levels of motivation, low levels
230 of knowledge about falls prevention may limit the ability of care staff to effectively translate
231 evidence into practice. Less than half of the care staff were able to describe the strategies
232 contained in the residents' falls prevention plans. Concepts of health behavior change²⁴
233 explain that capability, opportunity and motivation are all required for RAC care staff to
234 engage in falls prevention strategies with the residents they care for. Sixteen care staff
235 matched only one component of a standardized definition of a fall and only one care staff
236 provided a definition that totally matched the standardized definition.^{36,37} This may result in
237 falls being underreported as shown in other studies, with strategies not being implemented
238 that could prevent further falls.³⁸ Over 75% care staff suggested that extrinsic factors such as
239 removing hazards could prevent falls, but only four respondents suggested that staff
240 surveillance could be a useful falls prevention strategy.^{1,39} This may mean that care staff do
241 not think that they should observe residents behavior, and report behavior which might

pertain to the adverse effects of medication or medical illness, such drowsiness or loss of balance.

Care staff identified that a key barrier to effective falls prevention was the low ratio of care staff to residents which has been supported by previous research.^{17,40} This lack of manpower and time pressure described by the care staff could limit their opportunity to engage in falls prevention strategies. Care staff also identified that locum care staff may have limited awareness of residents' capabilities which could increase the likelihood of falls in residents they provide care for. This finding was similar to that of Castle & Engberg (2007).⁴¹

Since the main finding identified by the survey was a low level of care staff capability to provide effective falls prevention strategies, one solution could be to provide education and training. Further education and training could enhance care staff falls knowledge and skills to prevent falls from occurring, as only half of the care staff responded that they had received falls prevention training. The RAC site could benefit from using recent Australian training guidelines in designing care staff training to include education about falls and falls prevention.^{42,43} Since care staff have limited formal health care training they may be unaware of how to self- assess their knowledge levels and require skills checklists and further training.^{43,44}

These findings provide insight that gaps in care staff education and training exist, however the findings should be considered judiciously in view of the small sample size (n=24) and single RAC setting. Future research will benefit by administering this questionnaire across a large number of RAC sites, as this could be one of the ways to identify the types of education programs needed by care staff in order to improve translation of falls prevention strategies into practice. Administering this survey to a larger number of sites and participants would allow reliability and validity to be established. Since this is a new area in falls prevention

266 research, there is need for further exploration as care staff play such an important role in
267 RAC settings.

268 **Conclusion**

269 This study established a feasible means of surveying staff about falls prevention within a
270 RAC setting. These results may also be valuable to assist other RAC settings who wish to
271 survey their own staff regarding falls prevention. Although care staff in RAC settings spend
272 nearly half their time directly assisting residents, care staff surveyed were found to have low
273 levels of knowledge about falls prevention and a low level of awareness about residents' risk
274 of falls. Improving care staff levels of knowledge (capability) in this area by providing
275 education and training opportunities may be an important component in facilitating
276 translation of falls prevention evidence into practice in a consistent manner across RAC
277 settings. Future research should continue to assess care staff levels of knowledge, awareness,
278 opportunity and motivation to undertake falls prevention action.

References

1. Cameron ID, Gillespie LD, Robertson MC, Murray GR, Hill KD, Cumming RG, Kerse N. Interventions for preventing falls in older people in care facilities and hospitals. *Cochrane Database Syst Rev*. 2012;12: Available: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005465.pub3/full>: Accessed 20.05.2015.
2. Nitz JC, Josephson DL. Enhancing functional balance and mobility among older people living in long-term care facilities. *Geriatr Nurs*. 2011;32:106-113.
3. Vlaeyen E, Coussement J, Leysens G, et al. Characteristics and effectiveness of fall prevention programs in nursing homes: a systematic review and meta-analysis of randomized controlled trials. *J Am Geriatr Soc*. 2015;63:211-221.
4. Kerse N, Butler M, Robinson E, Todd M. Fall prevention in residential care: a cluster, randomized, controlled trial. *J Am Geriatr Soc*. 2004;52:524-531.
5. Sorensen SV, de Lissovoy G, Kunaprayoon D, Resnick B, Rupnow MFT, Studenski S. A taxonomy and economic consequences of nursing home falls. *Drugs Aging*. 2006;23:251-262.
6. Rapp K, Lamb SE, Buchele G, Lall R, Lindermann U, Becker C. Prevention of falls in nursing homes: Subgroup analyses of a randomised fall prevention trial. *J Am Geriatr Soc*. 2008;56:1092-1097.
7. Rigler SK, Ellerbeck E, Whittle J, Mahnken J, Cook-Wiens G, Shireman TI. Comparing methods to identify hip fracture in a nursing home population using Medicare claims. *Osteoporos Int*. 2011;22:57-61.
8. Deandrea S, Bravi F, Turati F, Lucenteforte E, La Vecchia C, Negri E. Risk factors for falls in older people in nursing homes and hospitals: a systematic review and meta-analysis. *Arch Gerontol Geriatr*. 2013;56:407.

9. Lord SR, March LM, Cameron ID, Cumming RG. Differing risks factors for falls in nursing home and intermediate-care residents who can and cannot stand unaided. *J Am Geriatr Soc.* 2003;51:1645.
10. Dykes PC, Carroll D, McColgan K, et al. Scales for assessing self-efficacy of nurses and assistants for preventing falls. *J Adv Nurs.* 2011;67:438-449.
11. Onder G, Carpenter I, Finne-Soveri H, et al. Assessment of nursing home residents in Europe: the services and health for elderly in long term care (SHELTER) study. *BMC Health Serv Res.* 2012;12.
12. Lach HW, Krampe J, Phongphanngam S. Best practice in fall prevention: roles of informal caregivers, health care providers and the community. *Int J Older People Nurs.* 2011;6:299-306.
13. Taylor J, Sims J, Haines TP. The emergent relevance of care staff decision-making and situation awareness to mobility care in nursing homes: an ethnographic study. *J Adv Nurs.* 2014;70:2767-2778.
14. Siyu Q, Ping Y, Hailey DM, Zhenyu Z, Davy PJ, Nelson MI. Time spent on daytime direct care activities by personal carers in two Australian residential aged care facilities: a time-motion study. *Aust Health Rev.* 2014;38:230-237.
15. Lemrijse CJ, de Boer ME, van den Ende CHM, Ribbe MW, Dekker J. Factors associated with physiotherapy provision in a popuation of elderly nursing home residents; a cross sectional study. *BMC Geriatr.* 2007;7.
16. Australian Government Australian Aged Care Quality Agency. Standards: Residential aged care. Available from <https://www.aacqa.gov.au/for-providers/accreditation-standards>. Accessed February 23 2016.
17. Chapman LJ, Newenhouse AC. Nursing home staff perception of a falls management intervention. *WMJ.* 2013;112:162.

18. Bonner AF, Castle, NG, Men A, Handler SM. Certified nursing assistants' perceptions of nursing home patient safety culture: is there a relationship to clinical outcomes? *J Am Med Dir Assoc.* 2009;10:11-20.
19. Francis-Coad J, Etherton-Beer C, Bulsara C, Nobre D, Hill AM. Investigating the impact of a falls prevention community of practice in a residential aged-care setting: a mixed methods study protocol. *J Adv Nurs.* 2015;71(12):2977-2986.
20. Burford B, Hesketh A, Wakeling J, et al. Asking the right questions and getting meaningful responses: 12 tips on developing and administering a questionnaire survey for healthcare professionals. *Med Teach.* 2009;31(3):207-211.
21. Portney LG, Watkins MP. *Foundations of clinical research: Applications to practice.* Upper Saddle River, N.J: Pearson/Prentice Hall; 2009.
22. Hartley J. Some thoughts on Likert-type scales. *Int J Clin Health Psychol.* 2014;14:83-86.
23. Flesch R. A new readability yardstick. *J Appl Psychol.* 1948;32:221-233.
24. Kincaid JP, Fishburne RP, Rogers RI, Chissom BS. Derivation of new readability formulas (Automated Readability Index, Fog Count and Flesch Reading Ease Formula) for Navy enlisted personnel. *Naval Technical Training Command, Millington, TN.* 1975;8-75.
25. Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implement Sci.* 2011;6:42-42.
26. Hill AM, McPhail S, Hoffmann T, et al. A randomized trial comparing digital video disc with written delivery of falls prevention education for older patients in hospital. *J Am Geriatr Soc.* 2009;57:1347-1352.

27. Taylor J, Morris M. Education, staff knowledge and falling in hostel residents. *Physiother Singapore*. 1999;2:128-134.
28. Hill AM, Hoffmann T, Beer C, et al. Falls after discharge from hospital: is there a gap between older peoples' knowledge about falls prevention strategies and the research evidence? *Gerontologist*. 2011;5:653-662.
29. Hill AM, Waldron N, Etherton-Beer C. A stepped-wedge cluster randomised controlled trial for evaluating rates of falls among inpatients in aged care rehabilitation units receiving tailored multimedia education in addition to usual care: a trial protocol. *BMJ Open*. 2014;4.
30. Polit DF, Beck CT. *Essentials of nursing research: Appraising evidence for nursing practice*. Philadelphia: Lippincott Williams & Walkins; 2013.
31. Elo S, Kyngas H. The qualitative content analysis process. *J Adv Nurs*. 2008;62:107-115.
32. Feinberg J. Wordle™. 2013: Available: <http://www.wordle.net/create>. Accessed 19.05.2015.
33. Abraham C, Michie S. A taxonomy of behavior change techniques used in interventions. *Health Psychol*. 2008;27(3):379-387.
34. Michie S, Atkins L, West R. *The behavioural change wheel: A guide to designing interventions*. Great Britain: Silverback Publishing; 2014.
35. Rapp K, Lamb SE, Klenk J. Fractures after nursing home admission: incidence and potential consequences. *Osteoporos Int*. 2009;20:1775-1783.
36. Lamb SE, Jorstad-Stein EC, Hauer K, Becker C. Development of a common outcome data set for fall injury prevention trials: the prevention of falls network Europe consensus. *J Am Geriatr Soc*. 2005;53(9):1618-1622.

37. Oliver D, Connelly JB, Victor CR, et al. Strategies to prevent falls and fractures in hospitals and care homes and effect of cognitive impairment: systematic review and meta-analyse. *BMJ*. 2007;334(7584):82.
38. Deandrea S, Lucenteforte E, Bravi F, Foschi R, La Vecchia C, Negri E. Risk factors for falls in community-dwelling older people: a systematic review and meta-analysis. *Epidemiology*. 2010;21:658-668.
39. Church J, Goodall S, Norman R, Hass M. An economic evaluation of community and residential aged care falls prevention strategies in NSW. *N S W Public Health Bull*. 2011;22:60-68.
40. Wagner LM, Damianakis T, Marfici N, Robinson-Holt K. Falls communication patterns among nursing staff working in long-term care settings. *Clin Nurs Res*. 2010;19:311-326.
41. Castle NG, Engberg J. The influence of staffing characteristics on quality of care in nursing homes. *Health Serv Res*. 2007;42:1822-1847.
42. Australian Commission on Safety and Quality in Healthcare. *Preventing falls and harm from falls in older people: Best practice guidelines 2009*. 2009.
<http://www.safetyandquality.gov.au/wp-content/uploads/2012/01/Guidelines-RACF.pdf>. Accessed January 12, 2015.
43. Community Services and Health Industry Skills Council. *Industry qualifications: Training packages*. 2014. Available at <http://www.cshisc.com.au/develop/industry-qualifications-training-packages/>. Accessed August 5 2015.
44. Chisholm [Internet]. Dandenong VIC: Chisholm Institute; 1998 [updated 2015]. Available from http://www.chisholm.edu.au/Courses/Certificate_IV/Aged_Care. Accessed May 15 2015.



THE UNIVERSITY OF
NOTRE DAME
A U S T R A L I A

APPENDIX I Questionnaire for care staff



This survey will assist us to find out more about falls prevention in residential aged care homes. Your responses will help to inform future training for staff in falls prevention.

This survey will take approximately 15 to 20 minutes. All responses are anonymous and confidential. We appreciate your time to complete this survey.

Section 1 – Your details

1. Please state your gender: (*Please tick ☒ one*)

☐ Male

☐ Female

2. Which age group describes you based on your last birthday? (*Please tick ☒ one*)

☐ 18-19 years

☐ 20-29 years

☐ 30-39 years

☐ 40-49 years

☐ 50-59 years

☐ 60-65 years

3. What is the highest level of learning you have done? (*Please tick ☒ one*)

☐ Left school before Year 10

☐ Completed Year 10

☐ Completed Year 12

☐ TAFE (Certificate I to IV) (Please specify: _____)

☐ Graduate Certificate (Please specify: _____)

☐ Graduate Diploma (Please specify: _____)

☐ Bachelor degree (Please specify: _____)

☐ Master degree (Please specify: _____)


☐ Other and / or overseas (Please specify: _____)



4. How long have you worked as a carer for older people either at this organisation or somewhere else? (*Please tick ☒ one*)
- ☐ more than 3 months but less than 6 months
- ☐ 6-12 months
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ more than 11 years
5. How long have you worked at this organisation? (*Please tick ☒ one*)
- ☐ less than 6 months
- ☐ 6-12 months
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ more than 11 years
6. What level(s) of care are you involved in delivering for the residents?
(*Please tick ☒ all that apply*)
- ☐ High level care
- ☐ Low level care
- ☐ Dementia specific care
- ☐ Unsure
7. What shift(s) do you work? (*Please tick ☒ all that apply*)
- ☐ Morning
- ☐ Afternoon
- ☐ Night
8. What language do you mainly speak at home? (*Please tick ☒ one*)
- ☐ English (please go to question 10)
- ☐ Other (Please specify: _____)



9. If you speak a language other than English, do you have any problem writing, reading or speaking in English? (*Please tick ☒ one*)

- ☐ Yes  ☐ Reading ☐ No
- ☐ Writing
- ☐ Speaking

Section 2 – This section asks for your feedback about falls or near falls and possible injuries that residents may experience

10. How would you describe “a fall” in your own words?

11. Do you think resident’s falls can be prevented from happening?
(*Please tick ☒ one*)

- ☐ Yes ☐ No ☐ Unsure

12. Have you done any training to help prevent falls in the past? (*Please tick ☒ one*)

- ☐ Yes ☐ No ☐ Unsure

13. If you answered “yes” in question 12, please tell us a little bit about the training.

14. List the things you think could help prevent residents from falling.



15. List any things you think could prevent residents **injuring** themselves if they fall.

16. When thinking of all the residents at your site (as a group), would you say they were: *(Please tick ☒ one)*

- ☐ At very high risk of falls
- ☐ At moderate risk of falls
- ☐ At low risk of falls
- ☐ Unsure

Section 3 – This section asks about how you think about falls prevention when you are completing your shifts. Please read the following statements and rate your response.

17. When working my rostered shift, I feel confident that I know what to do to prevent residents from falling. *(Please tick ☒ one)*

- | | | |
|---|--|------------------------------------|
| <input type="checkbox"/> Strongly agree | <input type="checkbox"/> Agree | <input type="checkbox"/> Undecided |
| <input type="checkbox"/> Disagree | <input type="checkbox"/> Strongly disagree | |

18. When working my rostered shift, I am keen to prevent residents from falling. *(Please tick ☒ one)*

- | | | |
|---|--|------------------------------------|
| <input type="checkbox"/> Strongly agree | <input type="checkbox"/> Agree | <input type="checkbox"/> Undecided |
| <input type="checkbox"/> Disagree | <input type="checkbox"/> Strongly disagree | |

19. When working my rostered shift, I am confident that I can complete actions that can prevent residents from falling. *(Please tick ☒ one)*

- | | | |
|---|--|------------------------------------|
| <input type="checkbox"/> Strongly agree | <input type="checkbox"/> Agree | <input type="checkbox"/> Undecided |
| <input type="checkbox"/> Disagree | <input type="checkbox"/> Strongly disagree | |

20. What percentage of older people do you think fall in residential aged care homes every year? *(Please tick ☒ one)*

- | | | |
|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> 10% | <input type="checkbox"/> 20% | <input type="checkbox"/> 50% |
|------------------------------|------------------------------|------------------------------|



21. What would you do if a resident has fallen over during your shift? Briefly describe the actions you would take.

22. Do you get any information at work on how to prevent residents from having a fall? (*Please tick ☒ one*)

☐ Yes

☐ No

☐ Unsure

23. Is there a falls prevention plan in the notes of the residents you are currently working with? (*Please tick ☒ one*)

☐ Yes (Answer Q. 24)

☐ No (Go to Q. 25)

☐ Unsure (Go to Q. 25)

24. If you answered Yes to the question 23, could you tell us a bit about the plan to help you stop residents you care for falling?

25. Do you share information with other care staff at work about how to prevent falls for the residents you care for? (*Please tick ☒ one*)

☐ Yes

☐ No

☐ Unsure

26. I work as part of a team (nurses, manager, physiotherapist, other organisational staff at facility) to prevent falls in my work place (*Please tick ☒ one*)

☐ Strongly agree

☐ Agree

☐ Undecided

☐ Disagree

☐ Strongly disagree

27. I think falls are a serious problem in residential aged care homes.
(*Please tick ☒ one*)

☐ Strongly agree

☐ Agree

☐ Undecided

☐ Disagree

☐ Strongly disagree



28. I think falls are a serious problem across this organisation.

(Please tick ☒ one)

☐ Strongly agree

☐ Agree

☐ Undecided

☐ Disagree

☐ Strongly disagree

Section 4 – This section asks you about how you think falls prevention training could be provided to care staff in this organisation

29. I think I have already had enough training about how to prevent falls.

(Please tick ☒ one)

☐ Strongly agree

☐ Agree

☐ Undecided

☐ Disagree

☐ Strongly disagree

30. If the organisation gave care staff training on preventing falls in the future, would you like training to be: (Please tick ☒ one)

☐ E-learning (using a computer to watch, read and comment on falls and falls prevention)

☐ Watching a DVD on falls and falls prevention

☐ Attending an 'In-service' training session on falls and falls prevention including listening to a talk, watching some video clips and having a discussion

31. Where would you like to attend training on preventing falls? (Please tick ☒ one)

☐ Organisation's central training centre

☐ Your facility

☐ No preference

32. Would you like reminders to help you know and use actions to prevent falls when you are at work? (Please tick ☒ one)

☐ Yes

☐ No

☐ Unsure

33. If you answered Yes to question 32, what type(s) of reminder would you like? (Please tick ☒ one)

☐ Written checklist in resident file

☐ Picture/photographic checklist in resident file

☐ Written checklist on the back of my name badge

☐ Posters around facility



34. What language(s) would you like the information on preventing falls to be available in? Please specify.

35. What do you think could make it difficult to carry out falls prevention actions during your shift?

36. Please tell us anything else you think would help make this questionnaire easier for other care staff to answer.

Thank you so much for your help.

Table 1: Explanation of identified threats and planned actions to improve survey responses and return rates

Identified threats to questionnaire completion	What needs to change	Intervention functions	Behavioral Change Technique (BCT) ^a	Planned actions for future delivery
Stapling questionnaire to staff payslips seen as impersonal approach with low value therefore staff more likely to disregard	Improve uptake of questionnaire by care staff	Persuasion Education	Credible source Comparative imagining of future outcomes Instruction on how to perform the behavior	Questionnaire to be distributed to care staff by registered nurse at shift handover following verbal explanation of questionnaire purpose and relevance to care staff
Questionnaire displayed University logo, this was viewed by some staff as having limited relevance, providing information for the partnered University rather	Increase care staffs' awareness of questionnaire informing their workplace	Education	Framing/reframing	RAC organisation logo to be added to questionnaire to connect study purpose to workplace

than informing their
workplace

Placement of questionnaire collection box in the staff room was prone to being moved out of direct sight	Maintain visibility of collection box as a cue to prompt staff to return completed questionnaires	Environmental restructure	Re-structuring the physical environment	Questionnaire collection box to be placed at nursing station in full view of care staff attending shift handover
Care staff delayed completing questionnaire due to competing demands and consequently forgot about it	Remind care staff of the personal importance of prioritising participation	Environmental restructure Persuasion	Adding objects to the environment Prompts and cues	Reminder posters reinforcing explanation of questionnaire purpose to be displayed in communal staff areas
Some professional nursing staff leading shift handovers forgot to discuss and	Provide a reminder to prompt discussion and	Environmental restructure	Prompts and cues	Electronic ‘message of the day’ displayed on staff computer home screen to

distribute questionnaire to consenting care staff	distribution of questionnaire			feature questionnaire purpose to remind registered nurse to discuss and distribute questionnaires at shift handover
Some care staff misinterpreted phrasing in questionnaire. For example “stop a fall” perceived as physically stopping a resident who is falling reaching a lower level	Clarify question meaning by changing phrasing	Enablement	Framing/reframing	Phrasing to be changed. For example “prevent a fall” will be used to denote stopping a fall from happening

^a Techniques from the coding manual of behavioural change techniques (adapted from Abraham and Michie, 2008)³²

Table 2: Care staff responses to questionnaire items^a regarding their levels of knowledge, awareness of residents' falls risk and motivation to carry out falls prevention strategies

Items	Questionnaire items' descriptions	Response options n (%)		
	Levels of knowledge	Yes	No	Unsure
1	Do you think residents' falls can be prevented from happening?	17 (70.8)	2 (8.3)	4 (16.7)
2	*Is there a falls prevention plan in the notes of the residents you are currently working with?	18 (75.0)	1 (4.2)	4 (16.7)
	Awareness of residents' falls risk			
3	When thinking of all residents at your site (as a group), would you say they were:			
	High risk	5 (20.8)		
	Moderate risk	12 (50.0)		
	Low risk	3 (12.5)		
	Unsure of resident's risk	4 (16.7)		
	Awareness of residents' falls risks			
4	What percentage of older people do you think fall in RAC homes every year?			
	10%	2 (8.3)		

20%	10 (41.7)
-----	-----------

50%	12 (50.0)
-----	-----------

Training

5	Have you done any training to help prevent falls in the past?	12 (50.0)	7 (29.2)	4 (16.7)
---	---	-----------	----------	----------

6	Do you get any information at work on how to prevent residents from having a fall?	17 (70.8)	3 (12.5)	4 (16.7)
---	--	-----------	----------	----------

7	**Do you share information with other care staff at work about how to prevent falls for the residents you cared for?	18 (75.0)	1 (4.2)	
---	--	-----------	---------	--

8	If the organization gave care staff training on preventing falls in the future, would you like training to be:			
---	--	--	--	--

E Learning	3 (12.5)
------------	----------

Watching DVD	1 (4.2)
--------------	---------

In-service training	10 (41.7)
---------------------	-----------

All	8 (33.3)
-----	----------

9	Would you like to attend training on preventing falls at:			
---	---	--	--	--

Organization's central training centre	11 (45.8)
--	-----------

On site	12 (50.0)
---------	-----------

	No preference	1 (4.2)		
10	Would you like reminders to help you know and use actions to prevent falls when you are at work?	20 (83.3)	3 (12.5)	1 (4.2)

^aQuestions requiring closed ended responses

*1 participant did not respond to the question

**2 participants responded not applicable, 3 participants did not provide any response to this question

Table 3: Care staff awareness, confidence and motivation regarding falls and falls prevention

Items	Awareness of residents' falls risk	SA ^b n(%)	A n(%)	U n(%)	D n(%)	SD n(%)
1	I think falls are a serious problem in RAC homes.	13 (54.2)	9 (37.5)	1 (4.2)	1(4.2)	0
2	I think falls are a serious problem across RAC organization.	12 (50.0)	7 (29.2)	4 (16.7)	1 (4.2)	0
Confidence to provide falls prevention strategies						
3	When working my rostered shift, I feel confident that I know what to do to prevent residents from falling.	10 (41.7)	12 (50.0)	1 (4.2)	1 (4.2)	0
4	When working my rostered shift, I am confident that I can complete actions that can prevent residents from falling.	10 (41.7)	12 (50.0)	1 (4.2)	1 (4.2)	0
Motivation to carry out falls prevention strategies						

5	When working my rostered shift, I am keen to prevent residents from falling.	14 (58.3)	9 (37.5)	1 (4.2)	0	0
---	--	-----------	----------	---------	---	---

Perceptions about team and training

6	I work as part of a team to prevent falls in my work place.	10 (41.7)	8 (33.3)	3 (12.5)	1 (4.2)	0
---	---	-----------	----------	----------	---------	---

7	I think I have already had enough training about how to prevent falls.	6 (25.0)	7 (29.2)	5 (20.8)	6 (25.0)	0
---	--	----------	----------	----------	----------	---

^a Likert scale SA=strongly agree, A=agree, U=undecided, D=disagree, SD=strongly disagree

Table 4: Care staff responses to an open-ended question asking them to list strategies that could help to prevent residents from falling

Number of response (Total responses, n=61)	Categories ^a	Sub-categories	Response frequency n=xx (100%)
9	Strategies targeting residents	Educate residents on falls prevention	5 (8.20)
		Using physical restraint to prevent resident from falling	4 (6.55)
32	Strategies focusing on care staff responsibilities to prevent falls	Reassess resident's mobility	12 (19.67)
		Selecting appropriate footwear and clothing for resident	10 (16.39)
		Staff to provide surveillance on resident who requires supervision	4 (6.56)
		Staff to review and understand the effect of medications taken by the residents they cared for	3 (4.92)
		Staff to be aware of continence management issue in residents they cared for	1 (1.64)
		Staff requires education on falls and falls risk of the residents they cared for	1 (1.64)

		Staff to reassure resident of available assistance for mobility and personal care	1 (1.64)
20	Environmental strategies to prevent falls in RAC	Leaving call bell with resident	5 (8.20)
		Removing hazards around resident's surrounding	14 (22.95)
		Provide better lighting for the resident to have a better view of where they are going	1 (1.64)

^aThe open-ended response is categorize into three categories namely resident, staff and environment.

Table 5: Care staff identification of actions they would take after a resident had fallen.

Number of response (Total responses, n=71)	Categories ^a	Sub-categories	Response frequency n=xx (100%)
28	Care staff ^b actions after resident had a fall	Call nursing staff for assistance	21 (29.57)
		Call for help (ie. other staff members)	4 (5.63)
		Call ambulance immediately	3 (4.23)
4	Documenting falls in resident's notes		4 (5.63)
14	Assessing resident post fall	Care staff assess severity of injury	10 (14.08)
		Nursing staff to perform post falls assessments on resident	4 (5.63)
9	To ensure resident's safety post fall	Use a hoist to lift resident back into chair or bed	3 (4.23)
		Do not move the resident until otherwise authorized by nursing staff or physiotherapist	2 (2.82)

	Ensure the surrounding environment is safe for the resident	2 (2.82)
	Assess resident using CPR protocol (DRABCD)	2 (2.82)
16	Provide reassurance and comfort to resident post fall	16 (22.54)

^aThese categories are categorize under the staff domain.