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Evaluating the impact of a falls prevention community of practice in a residential aged care organisation

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Chapter 8:

Synthesis and Conclusion

Chapter

8

Preface

This chapter summarises and synthesises the findings from the research conducted as part of this thesis. This research has added to existing evidence about how RAC organisations can address falls prevention. Strengths and limitations of the research are discussed and the thesis concludes with a number of recommendations for clinical practice and future research.

8.1 Overview of the Research

We recognised that preventing falls in a frail, co-morbid population cared for by a diversely skilled workforce was complex and therefore may require a complex intervention strategy delivered at multiple levels, as suggested by the other research, including systematic reviews in this area (Anderson, Issel, & McDaniel, 2002; Cameron et al., 2012; Craig et al., 2008; Quigley et al., 2010). The purpose of this research was to evaluate the impact of a falls prevention community of practice (CoP) on falls outcomes in a residential aged care (RAC) setting. The evaluation of the impact of the CoP was comprehensive as it measured changes at three levels: member, site and organisation. We partnered with a single not-for-profit RAC provider organisation, comprised of 13 geographically diverse sites in metropolitan Western Australia.

This research used a mixed methods design (Creswell & Plano Clark, 2007) framed by a realist approach to gain a better understanding of how CoP interventions were influenced by current conditions (contexts) in triggering (mechanisms) the observed outcomes (Pawson & Tilley, 1997). Data were gathered from diverse sources to triangulate the research methodology and findings. The journey of the CoP was mapped across three phases. Phase 1 described the development of the CoP, then evaluated its establishment and web-based operation across the 13 RAC sites using the organisation's intranet. In Phase 2 CoP members at each site conducted an evidence-based falls prevention audit and identified gaps in practice, determining areas for priority intervention with use of a feedback loop. Areas for prioritised intervention included; improving the proportion of residents supplemented with vitamin D, staff education and re-designing falls prevention policy and falls risk assessment at organisation level. The audit findings informed CoP activity in Phase 3. A comprehensive evaluation of the impact of CoP activity was subsequently undertaken at member, site and organisation levels which culminated in measuring falls rates and injurious falls rates.

8.2 Review of the Research Problem

Our systematic review and meta-analysis (Chapter 2) synthesised the best available evidence for the effectiveness of complex falls interventions delivered at multiple levels. We found that multifactorial falls prevention interventions delivered at resident, RAC site and RAC organisation levels were inconclusive in reducing falls

rates, which concurred with findings from other large systematic reviews (Cameron et al., 2012; Vlaeyen et al., 2015). Our sub-group analysis showed a significant reduction in falls rates after 8-12 months follow up when additional resources were provided to the RAC facilities to undertake the interventions (Chapter 2) (Becker et al., 2003; Dyer et al., 2004; Jensen, Lundin-Olsson, Nyberg, & Gustafson, 2002). This condition of additional resource support, in the context of multifactorial falls prevention intervention success, has also been noted by Kerse (2010). However in today's constrained RAC environment, organisations cannot rely on the provision of additional resources (Belardi, 2014; Colón-Emeric et al., 2016; Lea et al., 2015). Therefore, as suggested by other researchers, potential solutions need to be designed involving RAC staff (Lindeman et al., 2003; Nitz et al., 2012) and using existing resources in innovative ways (Kerse, 2010). Our research sought to address this problem by harnessing existing resources to develop a sustainable model that could target the translation of falls prevention evidence into practice holistically and at an organisational level. This was realised by establishing and operating a CoP.

8.3 Synthesis of the Research Findings

8.3.1 Phase 1: Establishing a CoP - Development, Operation and Evaluation

Phase 1 of the research commenced in collaboration with the RAC partner organisation to establish a "Falls Prevention CoP". Our selection of a CoP model concurred with other pioneers in the healthcare sector seeking to bring together expertise, problem solvers and activists for learning and achieving goals (Barnett et al., 2014; Grealish, Bail, & Ranse, 2010; Ranmuthugala, Cunningham, et al., 2011; Tolson, Irene, Booth, Kelly, & James, 2006).

Aim: Study 1

- The aims of this study (Chapter 4) were: to describe the development and evaluate the establishment of a web-based CoP to lead falls prevention activity in a RAC organisation; to explore CoP members' capability, confidence, opportunity and motivation to participate in web-based activity using the organisation's intranet and to identify barriers and facilitators for sustainable web-based CoP member participation.

It was possible to successfully establish a falls prevention CoP in a RAC setting by collaborating closely with our RAC partner organisation. From a research perspective, we also developed and utilised an evaluation matrix. This allowed us to benchmark the CoP development process against determinants of success identified in the literature, ensuring the structure of the CoP was congruent with its theoretical underpinnings (Ranmuthugala, Cunningham, et al., 2011).

CoP members reported high levels of perceived capability, opportunity and motivation to participate in web-based falls prevention activity. However amongst our membership cohort (n = 20), of whom 13 (65%) members were aged between 40-59 years of age, low levels of confidence using ICT applications such as a blog were identified. This gap in multidisciplinary RAC staff (CoP members) capabilities to engage with ICT applications in the workplace was similar to that identified in a national survey of nurses (Eley, Fallon, Soar, Buikstra, & Hegney, 2008), suggesting web-based RAC staff training is required to enable frequent web-based interaction.

Findings from the operational trial also showed that frequency of engagement in web-based activity by CoP members was low. Evaluation of web-based CoP operation identified members had lower capabilities using ICT applications than expected and limited opportunity for web-based participation. We identified barriers and facilitators to web-based participation providing new insights into operating a web-based CoP in a RAC setting. These included limited opportunity, in terms of time for CoP members to engage in web-based activity due to competing demands from other clinical tasks and challenges building rapport with members from other RAC sites whom they saw infrequently. Other studies have also reported findings that having technology that was easy to use in a time supportive environment was paramount to the successful operation of a web-based CoP (Barnett, Jones, Bennett, Iverson, & Bonney, 2012; Dubé, Bourhis, & Jacob, 2006). Although we developed the CoP to predominantly function as web-based, we planned some face-to-face meetings to build rapport as recommended by other health CoP researchers (Li et al., 2009; Ranmuthugala, Cunningham, et al., 2011). In health care it could be that meeting face to face for clinical staff is still an important means of interaction to drive practice change, even though some health related groups operate CoPs in a virtual capacity only (Barnett et al., 2014; Ikioda, Kendall, Brooks, De Liddo, & Shum, 2013).

In summary a CoP in RAC settings that operates predominantly web-based could be facilitated if members are given web-based training as other studies have recommended (Dubé, Bourhis, & Jacob, 2003; Eley et al., 2008; Hanssen, Norheim, & Hanson, 2016), and RAC management support dedicated time for web-based participation. This may enable CoP members to interact frequently enough to effectively drive practice change and deliver beneficial healthcare outcomes.

8.3.2 Phase 2: Audit, Feedback and Action Planning by a Falls Prevention CoP

Phase 2 involved the CoP scoping falls prevention activity across all 13 sites of the RAC organisation using an evidence-based audit (National Ageing Research Institute, 2009) and feedback process. Audit and feedback has been established as an effective way of measuring clinical quality and safety in areas such as falls prevention (Gould et al., 2014; Ivers et al., 2012; Moore et al., 2011). Previous studies in healthcare settings have reported use of the CoP model as enabling workplace staff to address clinical problems, but little was known about their ability to audit and influence practice change.

Aim: Study 2

- The aims of this study (Chapter 5) were to evaluate if a CoP could conduct a falls prevention activity clinical audit, to determine if a CoP could identify gaps in falls prevention practice and to identify barriers to the adoption of CoP planned falls prevention activities and facilitated actions.

We found that the CoP was able to effectively conduct a falls prevention activity audit at all 13 RAC sites (100% response rate) and identify gaps in practice. Meeting the criteria for effective clinical auditing was achievable by a CoP as members were able to plan activity, share procedural knowledge, discuss findings from a local perspective and action falls prevention practice change. The CoP reported the audit tool was user friendly, enabling full completion with ease by RAC site staff. The use of a validated audit tool that was evidence-based (National Ageing Research Institute, 2009) assisted the CoP in prioritising falls prevention activity to undertake in the next phase of their operation. For example, it was noted that only two (15.4%) sites reported a documented fall definition when research recommends organisations gathering falls data

use a standardised fall definition (Lamb, Jørstad-Stein, Hauer, & Becker, 2005; Nitz et al., 2012). The mean proportion of residents supplemented with vitamin D was found to be 41.5% (*SD* 23.7%), when research suggests around 89% of the RAC population are either deficient or have low levels of vitamin D (Waldron, Hill, & Barker, 2012) and supplementing residents is a recommendation based on Level 1 evidence (Cameron et al., 2012; Waldron et al., 2012).

Additionally the structure of the CoP connected managers with RAC site staff, meaning that audit findings and subsequent actions were informative for the RAC organisation at site and management level in planning improvements. We found that gaps in falls prevention practice highlighted that falls prevention evidence required more consistent translation across the RAC organisation. These findings were supported by other studies in this area that have found that health care organisations may have difficulty in implementing and sustaining evidence-based strategies (Craig et al., 2008; Glasziou, Ogrinc, & Goodman, 2011) including in RAC (Berta et al., 2010; Kennedy et al., 2012).

In summary we believe conducting a clinical audit was a novel use of a CoP. By leading the audit and feedback process themselves the CoP members became more aware of the gaps in evidence-based falls prevention practice (Berk, Callaly, & Hyland, 2003; Gould et al., 2014). Combining this process with action planning, created a powerful feedback loop that potentially contributed to CoP members driving practice change in falls prevention (Berk et al., 2003; Jones, Sloan, Evans, & Williams, 2015).

8.3.3 Phase 3: Evaluation of the CoP in Translating Falls Prevention Evidence into Practice and Effect of Falls Outcomes

There was limited empirical data on the impact of CoPs in the healthcare setting (Li et al., 2009; Ranmuthugala, Plumb, et al., 2011) to support or reject their pursuit. Using the audit findings from Study 2 the CoP then prioritised actions within their local and organisational context and initiated and led the implementation of evidence-based falls prevention interventions at multiple levels. The complexity of the CoP, as an intervention in its own right, required a comprehensive method of evaluation. This was enabled by using a realist approach (Pawson & Tilley, 1997; Schierhout et al., 2013), which considered the context in which the observed intervention outcomes were

triggered. We therefore employed a range of outcome measures to evaluate how the CoP (intervention) in the context of the 13 RAC sites triggered the desired outcomes (falls prevention).

Aim: Study 3

- The aim of this study (Chapter 6) was to evaluate the impact of a falls prevention CoP on its membership, its actions at site level and its actions at organisation level in translating falls prevention evidence into practice.

Our findings showed the CoP had a positive impact at all three levels. We have provided new empirical information regarding how a CoP worked in the context of falls prevention in a RAC setting. For example, our CoP demonstrated web-based operational capacity. Our social network analysis validated that overall CoP members gained web-based connections to multidisciplinary peers at the other participating sites and 11 CoP members made a strong connection to the research team in the pursuit of falls prevention knowledge. CoP members were significantly more knowledgeable about evidence-based falls prevention strategies after 24 months of CoP participation compared to baseline. There was a significant improvement in the proportion of residents supplemented with vitamin D [mean increase = 28.23%, 95% CI (15.96%, 40.51%)] across the 12 participating sites (excluding transition care beds). A falls prevention policy and more comprehensive risk assessment tool with aligned management plans were also initiatives of the CoP, which were subsequently developed and implemented across the organisation. Management support, in terms of enabling time to participate in CoP activities and prioritising falls prevention action at sites, were key mechanisms in achieving successful implementation outcomes.

We believe we are the first to use a realist approach to evaluating the delivery of falls prevention interventions in a RAC setting (Chapter 3) and were able to identify mechanisms that may have triggered the outcomes we observed under certain contextual conditions. Variation is highly likely amongst RAC site resources, management, staffing and resident populations (Cameron et al., 2012; Quigley et al., 2010; Vlaeyen et al., 2015), thus the same interventions delivered at the 13 RAC sites could lead to different outcomes (Chapter 6). For example, the implementation and adoption of residents' tailored fall prevention strategies (outcome) was enabled for frontline care staff when

they were prompted in a novel way (mechanism) i.e. the ‘catch a falling star program’ (Poster checklist of tailored resident strategies in residents room) and the documentation of enacting falls prevention strategies with the resident was made accountable by the care manager (context). At RAC sites where there was limited care manager support (context) due to a lack of realisation and prioritisation (mechanism) regarding falls prevention, the CoP member was not enabled to fully participate in the CoP and lead practice change. This resulted in fewer falls prevention interventions being implemented and adopted (outcome) at that site. However successfully implementing falls prevention strategies occurred towards the end of the study at sites with care manager support, but this late implementation did not result in a significant reduction in falls rates or injurious falls rates. Our use of the realist approach provided new understandings of how the contextual conditions of the RAC site triggered the observed outcomes in falls prevention. The flexibility of being able to prioritise the interventions required at the RAC site and to deliver them with tailored intensities is important in a demanding environment of complex care where time and resources are very limited (Craig et al., 2008; Kennedy et al., 2012).

We were able to demonstrate that web-based operation can overcome geographic barriers and travel constraints enabling more frequent interaction amongst multidisciplinary RAC staff at different sites. Our study is the first to undertake a social network analysis showing the strength of interdisciplinary connections and flow of knowledge amongst a falls prevention CoP membership in a RAC setting (Chapter 6). This is important as professional staff in RAC settings are often isolated from the traditional support structures for peer learning and professional development (Grealish et al., 2010; Lea et al., 2015) available in other healthcare environments such as hospitals. Providing access to expertise with the opportunity to question and collaborate, as afforded by membership of a CoP, staff may be attracted and retained within RAC settings.

The CoP took considerable time to translate falls prevention evidence into practice as multiple levels within the RAC organisation required addressing. Facilitating the translation of evidence into practice requires change at the organisational level (Berta et al., 2010; Kennedy et al., 2012). Writing organisational falls prevention policy and re-designing falls risk assessment and management processes were CoP actions that

expedited subsequent practice change at the RAC sites. However leading audits and surveys, then disseminating information to staff at their sites, in tandem with their usual clinical duties limited the pace of the translation of CoP actions into practice change. Thus longer term commitment is required to address falls prevention change at multiple levels as noted by other studies (Quigley et al., 2010; Vlaeyen et al., 2015).

In summary our results demonstrated benefits from operating a falls prevention CoP at all levels. Multidisciplinary RAC staff perceived that they benefitted from participating in a falls prevention CoP and that the CoP was able to translate falls prevention evidence into practice in the context of their individual site and the RAC organisation.

8.3.4 Phase 3: Evaluation of the Impact of Operating a Falls Prevention CoP on Falls in a Residential Aged Care Setting

For 12 months prior to CoP establishment and during the operational phases of the CoP (two years) we simultaneously measured falls outcomes at six monthly periods. The final phase of the research was to evaluate if the CoP's translation of falls prevention evidence into practice impacted on falls rates and injurious falls rates to benefit residents.

Aim: Study 4

- The aim of this final study (Chapter 7) was to investigate the impact of a falls prevention CoP, acting at multiple levels of a RAC organisation on falls rates and injurious falls (resulting in fracture) rates.

Falls rates and injurious falls rates at 18 months after the CoP began delivering falls prevention interventions were not significantly different to the baseline period. Injurious falls, as measured by fracture rates, trended downwards and falls trended upwards at some sites. We postulated that actions by the CoP regarding defining falls and re-classifying injurious falls possibly raised awareness, leading to more robust falls reporting across the organisation. We also found the extensive time requirement for falls prevention policy and protocol development limited the ability of the CoP to deliver more multifactorial interventions in the short term. Hence the impact of the CoP on falls outcomes in the longer term is likely not fully evident and requires longer term follow up. Other studies that delivered falls prevention interventions in RAC settings without

extra resources also found increases in falls rates (Burland, Martens, Brownell, Doupe, & Fuchs, 2013; Kerse, Butler, Robinson, & Todd, 2004; McMurdo, Millar, & Daly, 2000). One explanation postulated was that in trying to accommodate delivering falls prevention interventions alongside usual duties, a lower level of intervention intensity resulted. This, combined with a raised awareness of falls prompting better reporting, may have contributed to the finding.

There was variation in the change in falls rates across the RAC sites as evidenced by the best linear unbiased predictors (Figure 7.2). This may be partly attributed to RAC population heterogeneity, with some of our RAC sites providing care for older people with multiple falls risk factors and the most complex of care needs making falls prevention intervention at the resident level more challenging. In addition to this, two sites commenced admitting a sub acute resident population, older people requiring transition care services following hospitalisation, during the study.

The cohort of residents at each RAC site also continues to age. Thus the effects of ageing and disease processes advance, probably leading to increased frailty and risk factors for falls, some of which are not modifiable. This makes the goal of reducing falls rates increasingly challenging, as reported by Nitz et al. (2012).

Our evidence-based falls prevention audit also identified several falls prevention interventions that some RAC sites were already undertaking. These included regular medication reviews, exercise programmes including strength and balance exercises and vision reviews by an optometrist. At sites already undertaking recommended multifactorial falls prevention interventions greater gains get progressively more challenging to show.

Whilst viewed as a positive change led by the CoP, the need to embed the new classification of injurious falls into policy meant implementation only took place in the final data collection period.

Individuals who were multiple fallers can confound falls data. In our study (Chapter 7) 378 residents sustained between 5-18 falls and one resident at one RAC site fell 193 times. In a similar study by Nitz et al. (2012) 42 falls were incurred by a single faller. Thus it is important for RAC organisations evaluating the implementation of falls prevention interventions to be aware of potential confounding when interpreting their

falls data. Judgements about intervention effect or comparison with other RAC site populations may be difficult for RAC site care managers without research experience, hence connections to research experts via a CoP could be beneficial, particularly when resource allocation is involved.

In summary establishing a falls prevention CoP did not reduce falls rates from baseline to 18 months after delivering falls prevention interventions, but there was a trend to a reduction in falls resulting in fracture. In complex settings such as RAC organisations additional time for implementation and evaluation of falls prevention interventions will be required. The adoption of standardised definitions to improve reporting reliability could allow for more valid comparisons of falls rates and injurious falls rates between different studies and within the RAC population.

This research was to our knowledge first to use a CoP to target falls prevention in a RAC setting and first to use a realist approach to evaluation of a falls prevention CoP in a RAC setting. Possible explanations for the differences in observed findings, in the context of 13 RAC sites, may inform how the translation of evidence into practice can be improved to benefit residents.

8.4 Strengths of the Research Findings

Health service research is increasingly utilising both quantitative and qualitative methods in research designs seeking answers to complex problems (Craig et al., 2008; Onwuegbuzie & Leech, 2005), such as preventing falls in older people. Our selection of a mixed methods design with a realist approach to evaluation enabled integration of complementary methodologies and delivered many advantages in that it validated the findings of varying methodologies via triangulation; developed a more extensive analysis, provided richer detail; and initiated new lines of thinking through attention to the unexpected as well as expected (Onwuegbuzie & Leech, 2005; Rossman & Wilson, 1985). Pursuing how our intervention worked using the realist questions of what worked, for whom? how? and under what conditions? provided deeper insights into explaining the outcome variations observed.

We strengthened our research findings by utilising multiple measurement sources along the research continuum as evidenced by evaluation matrices, an evidence-based audit, mixed surveys and a social network analysis. This assisted in determining

the capability of the CoP to translate evidence into practice. There has been very little use of measurement in evaluating CoPs with the many investigations being anecdotal rather than empirical (Barnett et al., 2012; Li et al., 2009; Ranmuthugala, Plumb, et al., 2011). This thesis is a first in providing empirical findings on the impact of a falls prevention CoP at membership, site and organisation levels in a RAC setting and thus makes a valuable contribution to the body of literature on health related CoPs (Chapter 6).

We observed that our CoP was able to initiate a cultural shift in the approach to falls, from one of reaction (post-fall management) to that of pro-action (fall prevention), through policy and practice change. However, our CoP membership noted that in Australia funding was being driven by the consequences of falls rather than preventing them and they felt this made it difficult for RAC organisations to foster a proactive culture. Other RAC falls researchers (Burland et al., 2013; Nitz et al., 2012; Oliver & Masud, 2004) have reported that there is a need for emphasis on alternative endpoints for analysis other than outcomes that achieve statistical significance to drive a proactive culture (Oliver & Masud, 2004). For example, implementation and adoption of comprehensive falls risk assessment post fall and environmental safety modifications could be endpoints for demonstrating a safety culture. Directives to improve residents' functional mobility, such as tailored exercises and restraint minimisation that may lead to improved health and quality of life outcomes for both residents and staff (Burland et al., 2013; Oliver & Masud, 2004; Rask et al., 2007) have also been suggested. However we need to be mindful to measure evidence-based endpoints in relation to falls prevention, such as the proportion of residents supplemented with vitamin D and reduction in the prescription of culprit psychotropic medications (Cameron et al, 2012, Oliver & Masud, 2004). Recognition through financial reward by Government RAC funding bodies for the provision of evidence for proactive practices to reduce falls could foster this culture.

Even though it was timely for the CoP to take falls prevention action, we felt that partnering with a RAC organisation to deliver falls prevention interventions at multiple levels was an effective way to bring about sustainable change. Previous researchers have emphasised that quality improvement in health organisations is difficult to undertake and is most effectively achieved by combining the skills of both

managers and clinicians (Greenfield, Nugus, Travaglia, & Braithwaite, 2011). We found a CoP was a successful model for bringing together managers and multidisciplinary staff enabling falls prevention to be addressed at resident, site and organisation levels.

8.5 Limitations and Challenges of the Research

The CoP was an intervention at organisation level and its structure and function would have been compromised if divided. Hence, the quasi-experimental pre/post design meant that blinding and prospective allocation to groups did not occur. Additionally, we were required to accommodate 13 RAC sites with pre-existing populations, who were all undertaking some level of falls prevention activity. As we were unable to undertake a RCT, which is recognised as providing the strongest level of evidence (Level 1) and necessary for establishing cause and effect, we cannot rule out that factors other than the CoP may have influenced our findings. However, our design was strengthened by the mixed method data collection from a number of sources, the multiple data measurement points and the involvement of RAC staff as CoP members. We considered outcomes from our design reflected the ‘real world’ conditions of RAC settings as reported by Burland et al. (2013).

A limitation of our research was underestimating the timeframe required for establishing the CoP as an intervention at organisational level and measuring the outcomes of CoP activity beyond translating evidence into practice i.e. the subsequent effect of the practice change on falls rates and injurious falls rates. Our CoP undertook a series of prioritised actions, including targeting supplementation of vitamin D, which is a recommendation with Level 1 evidence and were able to make improvements that were significant. The CoP was not able to concurrently action other strategies to completion, such as implementing staff and resident education resources and exercise programs (balance and strength) for better functioning residents. However these are actions that the CoP are continuing to undertake. The extent of the practice gap identified following the audit could not have been pre-determined, but planning contingency for the ‘worst case scenario’ should be considered in complex settings with complex interventions. Our CoP felt that sustained organisational change, such as use of a robust falls risk assessment with aligned management process was important. This took time to establish in the organisation’s electronic software but is now available for use. We concur with other researchers (Craig et al., 2008; Nitz et al., 2012; Tolson, Lowndes,

Booth, Schofield, & Wales, 2011) in recommending planning for longer term follow up to ascertain if complex interventions, such as a CoP, could reduce falls rates and injurious falls rates. Our CoP continues to be informed by falls rates measured at the organisation.

Analysis of falls data presented challenges. Our measurement of injurious falls was represented by those resulting in fracture. The smaller number of fractures are likely to have underpowered our finding as reported by Becker et al. (2003). However more robust reporting of injurious falls that include soft tissue and head injuries may enable meta-analysis from future studies to be sufficiently powered to show an effect. Investigating the impact of the CoP on the percentage of residents who had a fall during each time period was not analysed in this study. This was because there was variation in the number of beds allocated to transition or respite care over the follow-up. An increase in these beds, accompanied by the rapid turnover of residents using them, increases the denominator when examining the percentage of residents who fall. This would have given the appearance of a decrease in this outcome. It is known that falls data are underreported in hospital systems when only using incident reporting systems, which infers that the falls rates reported may not reflect the total falls (Hill et al., 2010). However we also reported injurious falls resulting in fractures, which can be reliably measured by the requirement of hospitalisation for confirmatory x-rays. Falls reporting is also required to be robust, however we identified some variation at RAC site level that may be attributed to a standardised fall definition not being in use.

A moderate limitation of this research was the conversion of beds at two participating RAC sites (1 and 5) to provide transition care services after the commencement of the research partnership. In our research observation period, over 45% of the recorded admissions were to transition care beds. Very little is known about falls in this older population but our study showed rapid increases in the number of falls at both transition care sites. As transition care provides short stay services and admitted older people immediately post hospital discharge, the setting had considerably more admissions of older people from acute care not yet functionally recovered (Gray et al., 2012). It is known that older people are at increased risk of falls and hip fracture after hospital discharge (Hill et al., 2011; Mahoney et al., 2000; Wolinsky et al., 2009). An Australian study found that among episodes of hospital re-admissions from transition care services,

orthopaedic conditions incurred the highest costs, with many of these for elective procedures and others resulting from falls (Comans, Peel, Cameron, Gray, & Scuffham, 2015). This population was considered at very high risk of falling, compared with the other sites. Falls data from this population should be recorded separately to enable independent analysis as two of our RAC sites provided combined data from transition care and general RAC populations which was not our choice. This has important implications for service providers in that different approaches to falls prevention may be required for older people in transitional care services.

Finally this thesis reported on the impact of one CoP in a single RAC organisation where the contextual conditions may not be entirely universal, therefore careful interpretation of the findings are required.

8.6 Recommendations of the Research

8.6.1 Implications for Practice

As RAC staff turnover and the emergence of new evidence perpetuate the need for ongoing learning, ways to achieve this in the workplace are required. We envisage models such as CoPs could provide the internal learning forums that other researchers have suggested may benefit the RAC sector (Grealish et al., 2010; Tolson et al., 2006; Tolson et al., 2011). This may assist in delivering the upskilling and professional development required to both enable facilitate better resident outcomes and retain and attract staff to the sector (Grealish et al., 2010; O'Connell, Ostaszkiwicz, Sukkar, & Plymat, 2008; Robinson, 2010).

Combining the skills of multidisciplinary care staff and managers has been reported as an effective way of improving care quality and safety in healthcare organisations (Braithwaite, Runciman, & Merry, 2009; Greenfield et al., 2011) but enabling these disciplines to meet is challenging. Our use of a web-based CoP connected multidisciplinary RAC clinical staff and managers across an organisation. We recommend web-based operation of a CoP to enable increased interdisciplinary connections and frequency of interaction to drive practice change within an organisation.

Delivery of evidence-based practice in a sustainable way is a current requirement and we, like Ranmuthugala, Plumb, et al. (2011), recommend that a CoP

can add value to an organisation by determining how resources are used to deliver improved falls prevention practice. Our CoP was able to make an impact at member, site and organisation levels. This resulted in a range of benefits from learning more about evidence-based falls prevention, auditing, action planning, policy writing and implementing interventions to evaluating outcomes. The organisation now has a model in place, which can lead and sustain its falls prevention efforts in the longer term.

A CoP is an effective model to engage staff in the clinical audit process. Clinical audits can raise staff awareness of gaps in practice and motivate staff to plan and action change (Ivers et al., 2012) as recommended in best practice guidelines (Australian Commission on Safety and Quality in Healthcare, 2009). Similar RAC organisations may also benefit from undertaking this audit and feedback process combined with action planning by involving their own staff in facilitating practice change. We recommend the use of a workplace group of multidisciplinary staff with access to quality evidence, such as a CoP.

Falls reporting is widely documented as challenging (Lamb et al., 2005; Oliver & Masud, 2004) across older populations, particularly when fall definitions vary and the clinical interpretation of a fall in varying contexts is open to subjective judgement. Providing standardised fall definitions and workplace opportunities for staff to discuss how falls should be interpreted and reported should form part of falls prevention education.

8.6.2 Implications for Research

The CoP based its activities on the best available evidence for falls prevention in RAC settings (Australian Commission on Safety and Quality in Healthcare, 2009; Cameron et al., 2012; Vlaeyen et al., 2015) but there is still a considerable degree of uncertainty about what works best. More research is required to establish exactly what combination of interventions is ideal to deliver to this population. In addition to this, further research is required to investigate how falls can be reduced in RAC settings where transition care is provided as a component of the service delivery.

Although the RCT is considered the gold standard design it may not always provide answers that explain intervention success or failure in different contexts, thus further post-hoc process evaluations are required. Realist evaluations may be a promising

alternative to the RCT in complex healthcare settings but are still evolving as a methodology of choice (Greenhalgh et al., 2009; Hewitt, Sims, & Harris, 2012; Pawson & Tilley, 1997). Therefore more studies need to test this approach to confirm its merits or refine its pitfalls. This methodology may then offer a robust alternative to the RCT, which is not always feasible in complex settings such as RAC. We encourage other researchers to test our conjectured mechanisms noting the contextual conditions that produce the desired or undesired outcomes. This is required to verify if there are beneficial outcomes for members, site and organisation in other RAC settings and to better inform how CoPs translate falls prevention evidence into practice in RAC organisations.

Our CoP connected ‘evidence makers’ (researchers) with ‘end-users’ (RAC staff) demonstrating its potential for translating evidence into practice. Access to researchers with falls expertise was identified as a facilitator for CoP falls prevention action. Thus we support the recommendation that research institutions should permanently align themselves with RAC organisations and take a more active role in the translation of evidence into practice (Lea et al., 2015; Verbeek, Zwakhalen, Schols, & Hamers, 2013).

The high cost of falls sustained in RAC to the health care system is well documented (Church, Goodall, Norman, & Haas, 2011; Haines et al., 2013; Heinrich, Rapp, Rissmann, Becker, & König, 2010; Watson, Clapperton, & Mitchell, 2011) but there is limited information on the cost and subsequent benefits of falls prevention interventions (Church et al., 2011), particularly those of a multifactorial nature delivered by models such as a CoP. Although a CoP established for student nurse education in a RAC setting has been reported as a relatively low cost intervention (Grealish et al., 2010), CoPs with different purposes are likely to entail varying costs. Whilst undertaking a cost-benefit analysis was beyond the scope of this research, future research endeavours investigating falls prevention CoPs should consider an economic perspective.

8.7 Conclusion

A multidisciplinary falls prevention CoP delivered benefits for its membership and was able to facilitate translation of falls prevention evidence into practice, in the context of a RAC site and RAC organisation. This was enabled when management supported an active CoP member, connected to research evidence operating in a

proactive falls prevention culture. The translation of evidence into practice was not uniform and we were unable to show a reduction in falls rates within the research time frame. However, there was a trend to a reduction in falls resulting in fracture. Since delivering falls prevention interventions in RAC settings is complex, it is important that the evaluation of their impact includes determining what worked, for whom, how and under what conditions.

The problem of falls in RAC settings will need continued focus as the population ages and resources for the sector remain constrained. Solutions therefore will need to be sustainable and possibly derived from within the existing operational capacity of RAC organisations themselves. A CoP could form part of such a solution.

8.8 References

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