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"We're still here..." : A mixed methods investigation of

employment outcomes of residential aged care nurses and nursing assistants in Australia

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Abstract

The shortage of core direct care workers (DCWs, including nurses and nursing assistants) in the residential aged care (RAC) industry is a worldwide phenomenon. Despite burgeoning international literature on employment outcomes (i.e. turnover and intention to stay or leave) of DCWs, there is little research exploring multiple predictive models of employment outcomes with Australian samples, and limited Australian evidence regarding the perspectives of nursing assistants and overseas born DCWs. The current research fills these gaps by describing and exploring factors associated with employment outcomes of DCWs in Australian RAC facilities.

Guided by the Job Demand-Control-Support (JDCS) model, the sequential mixed methods research design comprised three studies that explored different domains of the problem. Findings from earlier studies informed the development of methods for the later studies.

Study 1 tested two predictive models of turnover of RAC nurses, with a sample of 239 Australian RAC nurses from the Nurses and Midwives e-cohort Study (NMeS). Structural equation modeling was used to test the structural relationships between variables. Study 1 found that coping resources (indicated by job control, supervisor support and co-worker support) were negatively and directly related to turnover of RAC nurses, controlling for a range of individual and workforce characteristics. Consistent with the JDCS model, it was found that poorer psychological health (indicated by vitality, social functioning, role emotional and mental health) was predicted by lower coping resources and higher job demands (measured by physical demands, psychological demands and effort), and higher coping resources were associated with lower job demands among the RAC nurses.

An unexpected finding from Study 1 was that job demands were not significantly related to turnover of RAC nurses. To illuminate this nonsignificant association, an additional quantitative analysis of the NMeS data (Study 2) was conducted to more closely examine predictors of turnover of RAC nurses, using hierarchical logistic and linear regressions. Study 2 found that turnover was predicted by felt challenge (i.e. perception of undertaking challenging job with potential for personal growth) rather than challenge-related stress (i.e. stress derived from job demands with potential for personal growth). A greater sense of job challenge appeared to reduce turnover. These findings shed light on the nonsignificant association between job demands and turnover found in Study 1. Further, Study 2 found that poorer psychological health was predicted by a higher level of challenge-related stress, but not by felt challenge. Study 2 identified supervisor support as a valuable resource to manage stress related to job challenges.

Findings from the two quantitative studies indicated a need to capture job demands and coping resources specific to the RAC work, to examine how cultural backgrounds influence DCWs'

employment outcomes, and to explore how DCWs put various factors together to determine whether to stay or leave RAC industry. Additionally, it was unclear whether the findings from the quantitative studies were applicable to nursing assistants. In response to the limitations of the quantitative studies, a complementary qualitative Study 3 was conducted. Informed by the findings from the quantitative studies, an interview guide was developed to direct semi-structured individual interviews with 16 participants, including six nurses and ten nursing assistants, from a non-profit RAC facility in Queensland. Study 3 confirmed and extended the findings from the first two studies. Thematic analysis and constant comparative analysis of the interview data revealed that nurses' and nursing assistants' perceptions and management of the positive and negative elements of care work contributed to their intentions to stay or leave RAC industry. Nurses and nursing assistants evaluated the nature of care work and employment and organizational characteristics according to their personality, ability, expectations and essential needs. The perception of undertaking a meaningful job was most important in retaining DCWs. Those with an intention to stay were able to acquire resources to cope with job stress. Perceptions and employment intentions varied by occupational groups and by cultural and linguistic backgrounds.

In conclusion, the current research found that positive employment outcomes (i.e. intention to stay and low turnover) of DCWs appeared to be related to adequate work-related coping resources (i.e. supervisor support, co-worker support, opportunities for personal development and involvement in organizational decision making process) and a greater sense of job challenges with potential for personal growth. Furthermore, poorer psychological health of DCWs was associated with inadequate work-related coping resources and higher levels of job demands. To reduce turnover of DCWs and improve their psychological health, aged care policy makers and service providers might consider improving job resources by providing sufficient supervisor support, by facilitating interactions between co-workers, by increasing DCWs' opportunities to participate in organizational decision making processes, by developing specific resources to support overseas born DCWs, and by improving opportunities for professional development. The design of job demands should facilitate positive perspectives of aged care work with potential for personal development, along with tailored interventions to alleviate their job stress.

Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

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Publications during candidature

Peer-reviewed journal articles

Gao, F., Newcombe, P., Tilse, C., Wilson, J., & Tuckett, A. (2014). Models for predicting turnover of residential aged care nurses: a structural equation modelling analysis of secondary data. *International Journal of Nursing Studies, 51*(9), 1258-1270.

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Gao, F., Tilse, C., Wilson, J., Tuckett, A., & Newcombe, P. (2015). Perceptions and employment intentions among aged care nurses and nursing assistants from diverse cultural backgrounds: A qualitative interview study. *Journal of Aging Studies, 35*, 111-122.

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Book chapter

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Peer-reviewed national and international conference abstracts

Gao, F., Tilse, C., Wilson, J., Tuckett, A. & Newcombe, P. (2016). "We're still here …": employment intentions among aged care nurses and nursing assistants from diverse cultural backgrounds. In: *International Federation on Ageing 13th Global Conference*, Brisbane, Australia, 21- 23 June, 2016.

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Author: Anthony Tuckett	Edited the paper (10%)

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Contributions by others to the thesis as a whole

Associate Professor Cheryl Tilse, Associate Professor Peter Newcombe, Professor Jill Wilson and Dr Anthony Tuckett supervised this research, contributed to the conception and design of the overall thesis, and provided comments and edits on the drafts of the thesis.

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Keywords

residential aged care workforce, Job Demand-Control-Support (JDCS) model, nurses, nursing assistants, turnover, intention to stay or leave, psychological health, challenge-related stress, mixed methods research

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List of Figures and Tables

List of Abbreviations Used in the Thesis

RAC	residential aged care
DCW	direct care worker
SEM	structural equation modelling
NMeS	Nurses and Midwives e-cohort Study
CALD	culturally and linguistically diverse
JDC	Job Demand-Control
JDCS	Job Demand-Control-Support
ASA	Attraction-Selection-Attrition
CFA	confirmatory factor analysis
JCQ	Job Content Questionnaire
ERI	Effort Reward Imbalance
RN	registered nurse
EN	enrolled nurse
LPN	licensed practical nurses
CNA	certified nursing assistants
NA	nurse aid
overseas born DCWs	overseas born DCWs from culturally and linguistically diverse backgrounds with either Australian citizenship or permanent residency

Chapter One: Introduction

The shortage of core direct care workers (DCWs), including nurses and nursing assistants, in the residential aged care (RAC)[1] industry has fueled a burgeoning international interest in their employment outcomes (i.e. turnover or intention to stay or leave) (Colombo, Llena-Nozal, Mercier, & Tjadens, 2011). This shortage is a consequence of increased demand for RAC services arising from demographic and social changes related to increased longevity, high incidence of chronic health problems among people aged 85 and older, and decline in the availability of informal carers (e.g. family members, relatives and friends) (Scheil-Adlung, 2015). It is projected that the demand for core DCWs will almost triple in Australia and New Zealand, and more than double in the United States (US) and Canada between 2010 and 2050 (Colombo et al., 2011). Many developed countries are expected to experience serious challenges in developing a sufficient direct care workforce with appropriate skill mix (Chenoweth, Merlyn, Jeon, Tait, & Duffield, 2014; Rosen, Stiehl, Mittal, & Leana, 2011; Szczepura, 2011). In response to these trends, the Productivity Commission (2011), an independent research and advisory authority for the Australian Government, highlights that establishing a stable and adequate DCW workforce is a policy imperative of the Australian Government. However, the recently updated Australian aged care policy, effective from 1st July 2014, has paid little attention to this pressing issue. To inform the development of policies and programs to address the shortage of the core DCW workforce, the current research aims *to describe and explore factors associated with employment outcomes of nurses and nursing assistants in Australian RAC facilities.*

This chapter begins by briefly introducing the characteristics of DCWs in the Australian context, followed by examining why studying their employment outcomes is important. Then, an overview is provided in terms of gaps and problems in existing research and methodological challenges associated with investigating employment outcomes of DCWs. The specific aims and significance of the current research are presented. This chapter concludes with an outline of the organization of the overall thesis.

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[1] In the literature, residential aged care is also known as long term care or nursing home care. In Australia, the common abbreviations for "residential aged care" is RAC, and for "residential aged care facilities" is RACFs. Considering that international audiences may not be familiar with the Australian abbreviations, this thesis seeks to minimise the usages of acronyms. Hence, this thesis abbreviates "residential aged care" as RAC, and "residential aged care facilities" as RAC facilities.

1.1. Who are direct care workers

Direct care workers (DCWs) are not a homogenous group. Research conducted in different countries uses a variety of terms to denote DCWs in residential aged care or long term care facilities. The core DCWs are commonly divided into two categories: licensed and unlicensed nurses (Chenoweth, Jeon, Merlyn, & Brodaty, 2010). Licensed nurses, in Australia, include registered nurses (RNs) and enrolled nurses (ENs), while in America, relate to RNs and licensed practical nurses (LPNs); Unlicensed nurses, in Australia, refer to nursing assistants (also called assistants in nursing or personal carers), while in America, the term relates to certified nursing assistants (CNAs), also called personal care aides or nurse aids (NAs) (Chenoweth et al., 2010).

According to the most recent Australian aged care workforce census and survey, in 2012, there were 147,086 DCWs in Australian RAC facilities, occupying 73 % of the total RAC employees (King et al., 2012). Of the total groups of DCWs, nursing assistants constituted 68%, followed by registered and enrolled nurses (27%) and allied health professionals (5%) (King et al., 2012). Aged care is a female dominated occupation, with 89% of DCWs being women (King et al., 2012). Approximately 60% of DCWs were aged over 45 years, with a median age of 48 years (King et al., 2012).

Nurses and nursing assistants are the primary providers of direct care in Australian RAC facilities. DCWs in this thesis refer to nurses and nursing assistants. Nurses have a wide range of responsibilities in Australian RAC facilities. They assume management roles, including supervising nursing assistants and other non-direct care workers, for example, kitchen and cleaning staff. They are responsible for skilled nursing care, assessments of residents' care needs, liaison with health care professionals to address residents' health concerns, interacting with residents' families and preparing documents for the Australian Government related to funding, residents' care plans and undertaking accreditation. The role of nursing assistants is equally essential in facilitating quality care in RAC. Nursing assistants are involved in providing physical, personal and social care to directly assist residents with their activities of daily living and other complex care needs. Given the differences in work tasks, nurses and nursing assistants are considered as distinct groups.

In recent years, another distinct group of DCWs, overseas born DCWs, have attracted increasing research attention. In Australia, in order to address the current shortage of DCWs and to meet the special needs of residents from culturally and linguistically diverse backgrounds, many RAC facilities seek to attract overseas born DCWs (Productivity Commission, 2011). As a consequence, the overseas born nurses and nursing assistants are forming an increasing proportion of DCWs in Australian RAC facilities. In 2012, approximately 23% of DCWs were born overseas (King et al., 2012). The overseas born DCWs are different from their locally born peers in many

aspects. For example, some studies have raised a concern regarding their capacity to deliver quality care due to English language and communication barriers (King et al., 2012; Walsh & O'Shea, 2010). Working in health care industry requires not only a sound understanding of the standard English language but also competency in health care discipline specific language, for example, the ability to understand health care related jargon and abbreviations (Hull, 2015). A lack of this competency will adversely affect patients' safety, quality of care and effective communication between co-workers (Hull, 2015). Despite these limiations, other studies have reported that the overseas born DCWs utilize their native language capacity and cultural knowledge to provide culturally sensitive care to residents from the same cultural backgrounds (Chenowethm, Jeon, Goff, & Burke, 2006; Howe, 2009; Richardson & Martin, 2004). These reported strengths and limitations of overseas born DCWs are related to their cultural and linguistic competency. In examining employment outcomes of DCWs, it is important to distinguish locally born DCWs from their overseas born peers from culturally and linguistically diverse (CALD) backgrounds as the later may experience particular challenges as well as skills.

In addition to language and cultural differences, citizenship and immigration status may also influence DCWs' employment outcomes (Shutes, 2012). In Australia, the majority of overseas born DCWs hold either Australian citizenship or permanent residency, as Australian "skills-based immigration policies largely preclude the entry of low-skill care workers" and aged care services providers "have not engaged in recruitment of overseas nurses to any degree" (Howe, 2009, p. 388). Overseas born DCWs in this thesis refer to overseas born DCWs from culturally and linguistically diverse backgrounds with either Australian citizenship or permanent residency. The employment outcomes of DCWs with temporary residency are beyond the scope of the current research.

In sum, in Australian RAC facilities, nurses and nursing assistants, and overseas born and locally born nurses and nursing assistants form heterogeneous groups of DCWs. The current research will explore factors associated with employment outcomes of DCWs and examine vary perspectives from the diverse groups of DCWs.

1.2.   Why investigate employment outcomes of direct care workers

Employment outcomes of DCWs in the current research refer to turnover or intention to stay or leave. Turnover has both positive and negative influences on organizations (Manz, Fugate, Hom, & Millikin, 2015). In the general nursing workforce research, staff turnover is considered as not without benefits (Hayes et al., 2006). Nurse turnover may result in a cost reduction in remuneration for the new staff, and an increase in productivity from the new staff members who better fit the job and bring in new ideas to facilitate organizational policy changes (Hayes et al., 2006). These

potential benefits of staff turnover may apply to the RAC facilities. However, the quality of care in a RAC facility is mainly dependent on the experiences of DCWs and the establishment of long-term relationships between DCWs and RAC residents (Bowers, Esmond, & Jacobson, 2000). Not surprisingly, benefits related to staff turnover in the RAC facilities are less commonly reported. In contrast, the negative impacts of DCW turnover have been widely documented (Castle & Engberg, 2005; Castle, Engberg, & Men, 2007; Kash, Castle, Naufal, & Hawes, 2006; Kash, Castle, & Phillips, 2007; Lerner, Johantgen, Trinkoff, Storr, & Han, 2014).

DCW turnover has been linked to reduced quality of care, increased cost and poor health and safety among the remaining DCWs (Castle & Engberg, 2005; Kash et al., 2007). Turnover will increase the proportion of inexperienced staff, interrupt continuity of care, cause distress to some residents with a loss of relationships with staff who leave, and divert valuable resources from care to recruiting and training new staff (Castle et al., 2007; Donoghue, 2010; Ejaz, Bukach, Dawson, Gitter, & Judge, 2015). A recent American study of 1151 nursing home facilities found that higher turnover rates for both certified nursing assistants (CNAs) and licensed nurses were related to lower quality of care, as indicated by deficiencies in "activities of daily living, continence, pressure ulcers, and range of motion" of nursing home residents (Lerner et al., 2014, p. 105). Moreover, empirical evidence has suggested that turnover is associated with increased financial costs (Seavey, 2004). Turnover is expensive to a health care organization, as considerable resources have to be spent on recruitment and training of new staff, temporary replacement of a vacant position, and administration of staff termination and separation (Roche, Duffield, Homer, Buchan, & Dimitrelis, 2015). Furthermore, DCW turnover negatively affects health and safety of the remaining DCWs, as turnover causes work overload, job dissatisfaction and burnout among the remaining DCWs (Castle & Engberg, 2005; Duffield, Roche, Homer, Buchan, & Dimitrelis, 2014; Hayes et al., 2006; Karantzas et al., 2012; Spilsbury, Hewitt, Stirk, & Bowman, 2011). Quality of care, costs and safety of DCWs are the major concerns of RAC service providers and residents and their families, as well as aged care policy makers. Therefore, DCW turnover is considered to be detrimental to the RAC facilities (Lerner et al., 2014).

In addition to the extensive investigation on the impact of DCW turnover, emerging research has explored turnover rates of DCWs (e.g. Collier & Harrington, 2008; Duffield et al., 2014). The most recent Australian aged care workforce census and survey estimated the turnover rate of DCWs by calculating the proportion of DCWs who had been with their facility for less than 12 months (King et al., 2012). Based on this estimation, King and colleagues (2012) reported that 22% of nurses and 15% of nursing assistants had less than one year of tenure in their facilities in 2012. These turnover rates were lower than those documented in the studies conducted in American DCWs, where the reported turnover rates ranged from 43.1% to 74.5% (American Health Care

Association, 2011; Donoghue, 2010). The relatively lower turnover rates of DCWs documented in Australia may result from inconsistency in the definitions of turnover rate. For example, based on an American National Nursing Home Survey data, Donoghue (2010) calculated turnover rates of DCWs with the following formula :

$$\frac{Number\ of\ FTE\ nurses\ that\ quit\ in\ the\ last\ 3\ months}{Number\ of\ FTE\ nurses\ that\ worked\ last\ week + Vacant\ positions}$$

"FTE was defined as full-time nurses plus one half of part-time nurses, or in some cases all FTEs, depending on the nursing home's reporting method." (p.95)

Different operationalization of turnover rates makes it difficult to compare turnover rates of DCWs across countries. Moreover, RAC policies and service delivery models in Australia differ from America in regulation, funding, resident characteristics, workforce characteristics and local employment market conditions. These differences may potentially influence the variations of turnover rates of DCWs in the two countries (Castle, 2006). In Australia, it is unclear what levels of turnover rate are considered detrimental to the RAC facilities or the RAC industry as a whole. This is beyond the scope of the current research. Nonetheless, Donoghue (2010) emphasizes that "lower staff turnover and higher staff retention are both important goals for nursing homes" (p.104). Given the predicted shortage of health care attendants, particularly in the RAC industry, in the coming decades (Colombo et al., 2011; Scheil-Adlung, 2015), it is pivotal to examine predictors of turnover in Australian DCWs.

To prevent actual turnover of DCWs, researchers have suggested an investigation of intention to leave (also called turnover intention) (Takase, 2010). An initial expression of intention to leave was found to be associated with actual turnover in the subsequent 18 months (Takase, 2010). In addition, intention to leave appears to be related to poor performance of workers, such as frequent absenteeism and lower productivity (Hayes et al., 2012), which is likely to cause a decline in quality of care and an increase in organizational cost. Although intention to leave is a strong predictor of turnover, "intention to leave alone accounts for only a portion of actual turnover" (Mor Barak, Nissly, & Levin, 2001, p. 656). Understanding specific factors associated with intention to leave will assist service providers to act proactively to improve job performance and eliminate the actual turnover of DCWs (Takase, 2010).

In seeking to develop a stable direct care workforce, it is also useful to explore what retains staff. Using data from an Australian census of residential and community aged care services conducted in 2007, Howe and colleagues (2012) examined bivariate relationships between intention to stay, intention to leave and a range of individual and workforce characteristics, and found that

characteristics associated with intention to stay were different from those related to intention to leave. Similarly, a focus group study of DCWs working in American nursing homes, assisted living and personal care settings found that factors contributing to turnover of DCWs were not the same as those retaining them (Mittal, Rosen, & Leana, 2009). Interventions aimed at reducing turnover may not improve retention (Castle, 2006). Uncovering unique factors related to intention to stay will assist RAC service providers to develop targeted programs to retain DCWs in their facilities.

To sum up, the three employment outcomes of DCWs, namely, turnover, intention to stay and intention to leave, impact on quality of care, organizational cost and the well-being of DCWs. There is a need to investigate all of these employment outcomes in a single research program to shed light on distinct factors associated with individual employment outcomes of DCWs.

1.3. Research gaps and challenges

A review of studies on DCWs' employment outcomes reveals a number of gaps and/or problems relating to research designs, measurement and sampling in the existing research. These limitations are in part due to methodological challenges associated with investigating employment outcomes of DCWs.

1.3.1. Research design

The complexity of DCWs' employment outcomes requires evidence from mixed methods research. A quantitative approach can explore predictive models and hypotheses, while a qualitative approach can provide a deeper understanding of individual DCWs' experiences and perceptions (Jonson-Reid & Drake, 2008). By combining both the quantitative and qualitative methods, mixed methods research offers "the most informative, complete, balanced, and useful research results" (Johnson, Onwuegbuzie, & Turner, 2007, p.129). However, little research has applied a mixed methods approach to examine factors related to employment outcomes of DCWs.

Most Australian studies on employment outcomes of DCWs have used a qualitative approach. While providing insights into the unique perspectives of individual DCWs, these qualitative studies have a limitation of weak generalizability to the larger population of DCWs. Quantitative research on employment outcomes of DCWs conducted in Australia has primarily used a bivariate analysis. Given the complexity of employment outcomes of DCWs, using only bivariate analysis of factors related to employment outcomes is likely to yield unreliable, invalid and incomplete results (Hayes et al., 2006). In a review of predictors of turnover among human service employees, Mor Barak and colleagues (2001) highlighted a need to conduct multivariate analysis to

simultaneously investigate the interrelationships between multiple predictors and turnover. However, findings on employment outcomes of DCWs based on multivariate analysis have predominantly come from American studies. These findings should be tested in the Australian context, considering that RAC policies (e.g. funding arrangements) and service delivery in Australia differ considerably from those in America.

It will be helpful to compare multiple predictive models of employment outcomes of DCWs in order to ascertain which yield the strongest predictive power. This requires applying advanced multivariate statistical methods, for example, structural equation modelling (SEM). These methods have proved difficult to accomplish, because they "involve numerous decisions, creating opportunities for errors to be made" (Guo, Perron, & Gillespie, 2009, p. 1558). As a consequence, there is a lack of research exploring multiple predictive models of employment outcomes of DCWs in a single analysis.

Weaknesses in research design are likely to produce incomplete and unbalanced results (Jonson-Reid & Drake, 2008), with limited usefulness in informing policy and practice aimed at addressing the shortage of DCWs. There is a need to conduct mixed methods research, with a focus on testing multiple predictive models of DCWs' employment outcomes, as well as uncovering DCWs' perceptions and experiences pertaining to their employment outcomes.

1.3.2. Measurement

The measurement of employment outcomes of DCWs in past research has two major limitations. First, little research has considered whether DCWs' turnover or intention to leave relates to changing occupation or changing employer. Second, actual turnover and intention to leave have been used interchangeably in many studies.

In nursing workforce research, the term "turnover" generally refers to organizational turnover or occupational turnover (Currie & Carr Hill, 2012; Parry, 2008). Organizational turnover relates to staff leaving their organization, but remaining in their occupation (Currie & Carr Hill, 2012; Parry, 2008). In contrast, occupational turnover means staff completely leaving their occupation, suggesting a loss of personnel, skills and experiences to that workforce (Parry, 2008). In addition to all the detrimental effects of organizational turnover, occupational turnover intensifies the shortage of DCWs in the RAC industry (Parry, 2008). Given that many RAC facilities are facing difficulties in attracting new DCWs (Chenoweth et al., 2010; Chenoweth et al., 2014), occupational turnover poses more challenges to the RAC industry than organizational turnover. However, the majority of RAC workforce research has only investigated DCWs leaving their facilities, without distinguishing between organizational turnover and occupational turnover. Predictors of

organizational turnover may not be transferrable to predict occupational turnover (Parry, 2008). Similarly, DCWs' intention to leave their facilities has been extensively investigated with minimum attention paid to their intention to leave their RAC jobs. Additional evidence is needed to shed light on what factors contribute to workers leaving aged care or expressing an intention to leave aged care.

Another measurement limitation in past research relates to the conceptualization of turnover as intention to leave. Models for predicting intention to leave may not be transferable to those predicting turnover (Hayes et al., 2006). This measurement limitation results from challenges in collecting and analyzing turnover information. The turnover data has to be collected using longitudinal surveys by following up with the same individuals over a period of time (Mor Barak et al., 2001). Longitudinal data usually have a problem of sample attrition in the follow-up surveys. Ignoring missing data or using less robust imputation methods, for example, mean substitution, is likely to produce biased estimates (Saunders et al., 2006). However, robust imputation methods, such as multiple imputation, have proved challenging to perform, as these require considerable time to conduct imputation procedures and advance statistical knowledge to analyze multiply imputed data (Azur, Stuart, Frangakis, & Leaf, 2011; Enders, 2010). Due to these difficulties related to turnover data collection and analysis, much research has operationalized turnover as intention to leave or measured both turnover and its predictors at a static point in time (Mor Barak et al., 2001).

The two measurement limitations mentioned above have resulted in less accurate predictive models of employment outcomes of DCWs, and less effective interventions to improve employment outcomes of DCWs (Currie & Carr Hill, 2012; Hayes et al., 2006; Parry, 2008). Hence, studies using more accurate measurement of DCWs' employment outcomes are needed.

1.3.3. Sampling

Much of previous research has examined the employment outcomes of nurses working in the acute care sector. Limited attention has been paid to employment outcomes of nurses and nursing assistants working in the RAC facilities. The nature of care in the RAC sector differs from those in the acute care sectors. The acute care sector generally delivers short-term treatment services, including hospital treatment, general medical services, dental care and ambulances (Ronaldson, Hayes, Aggar, Green, & Carey, 2012). In contrast, RAC facilities provide long-term care to older people aged 65 years and older who are unable to meet their care needs at home. The RAC services involve accommodation, personal and social care, domestic assistance and intensive nursing care (Howe, 2009; Marshall & Mackenzie, 2008). Evidence based on employment

outcomes for acute care nurses may not apply to the RAC nurses and nursing assistants given variations in their work tasks.

In Australian RAC facilities, nursing assistants are numerically the foundation of the DCW workforce. However, to date, the majority of RAC workforce research has focused on employment outcomes of RAC nurses, with little attention on RAC nursing assistants. Moreover, there are increasing numbers of overseas born DCWs in the RAC facilities (King et al., 2012). However, minimum attention has been paid to the employment outcomes of overseas born DCWs. Considering that nurses and nursing assistants, and overseas born DCWs and native born DCWs are distinct groups, there is a need to examine perspectives from nursing assistants and overseas born DCWs.

There are challenges associated with collecting valid data from DCWs. DCWs are heterogeneous in terms of culture, language and educational attainment. Nurses have a higher level of education than nursing assistants, with the majority of nurses holding health-related tertiary qualifications (King et al., 2012). Although the standard qualification for working as a nursing assistant in Australian RAC facilities is Certificate III in Aged Care, over one third of nursing assistants did not meet this requirement in 2012 (King et al., 2012). The existing standardized instruments for aged care research usually have an education bias, culture bias and language bias (Low et al., 2009). Using these existing instruments to conduct surveys among DCWs, especially nursing assistants and overseas born DCWs, is therefore likely to produce invalid results. An alternative solution is to construct valid and reliable instruments for nursing assistants with limited English proficiency and for overseas born DCWs from diverse cultural backgrounds. However, this solution is costly and time-consuming, as the validation of education fair, language fair and culture fair instruments require proper translation into different languages and validation within the culture. As a consequence of these challenges, valid evidence from nursing assistants and overseas born DCWs is limited.

Taken together, to better understand the employment outcomes of DCWs in Australia, a number of gaps in the existing research require attention. In terms of research design, there is a need to conduct mixed methods research, which applies advanced multivariate statistical methods to explore multiple predictive models, along with a full exploration of DCWs' experiences and perceptions related to rewards and difficulties of their job. Turning to measurement, there is a need to examine factors related to "actual" turnover of DCWs by tracking their work setting of employment over a long period of time, and to explore their occupational turnover (i.e. leaving RAC completely) and intention to leave their RAC jobs. With regard to sampling, evidence is needed on how employment outcomes vary between nurses and nursing assistants, and between DCWs with diverse cultural backgrounds.

1.4. Aims and significance of this research

The current research will address gaps and difficulties in the existing research on employment outcomes of DCWs. It is informed by the Job Demand-Control-Support model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990). The JDCS model incorporates three constructs: job demands, work-related coping resources and job strains. In line with Karasek (1979), job demands are operationalized as sources of stress (i.e. stressors) related to task accomplishments; and coping resources are operationalized as supervisor support, co-worker support, opportunities for personal development and involvement in organizational decision making process. These constructs reflect the current psychosocial work environment of RAC jobs in Australia, with satisfactory explanatory power (*detailed explanations are provided in Chapter Three*). A sequential mixed methods approach will be used to inform the overarching aim of the current research, that is, **to describe and explore factors associated with employment outcomes of nurses and nursing assistants in Australian RAC facilities**. Different domains of the problem will be addressed with quantitative and qualitative studies. The two specific aims are as follows:

Aim 1: To test predictive models of turnover of residential aged care nurses in Australia.

Aim 1 will be addressed by using two quantitative studies, with a focus on nurses. The first quantitative study (Study 1) will test models for predicting turnover of RAC nurses. Findings from Study 1 will help to identify areas that require closer examination. A second quantitative study (Study 2) will be conducted to further explore predictors of turnover of RAC nurses. Aim 1 seeks to address four gaps in existing research by: (1) operationalizing nurse turnover as "actual occupational turnover" (i.e. nurses leaving their RAC job entirely); (2) exploring causality between "actual occupational turnover" and its antecedents in RAC nurses; (3) adopting a quantitative approach to test theoretical frameworks of turnover derived from the JDCS model through multivariate analysis (e.g. structural equation modelling and hierarchical regressions); and (4) producing more efficient and less biased results through the use of multiple imputation (Rubin, 1976). The perspectives of nursing assistants will be explored in Aim 2.

Aim 2: To understand perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants.

A qualitative approach will be used to inform Aim 2. It will focus on further uncovering the unique perceptions of job demands and coping resources (the two key constructs explored in Aim 1)

in RAC nurses and nursing assistants, and their perceptions relating to their employment intentions. Interview data from both nursing assistants and nurses will be examined. Furthermore, this will be one of the first studies to explore the unique perspectives from overseas born nurses and nursing assistants. It will address the gap on how employment intentions differ between nurses and nursing assistants, and between DCWs with diverse cultural backgrounds. To address Aim 2, "employment intentions" is conceptualized as intention to stay or leave aged care.

Overall, the employment outcomes of DCWs play an important role in the delivery of quality care and improving the wellbeing of DCWs. The current research attempts to fill a number of gaps in existing literature on DCWs' employment outcomes, with a comprehensive mixed methods research design, a more accurate operationalization of DCWs' employment outcomes and an exploration of perspectives from the two understudied groups (i.e. nursing assistants and overseas born DCWs). Findings from the current research will have important implications for RAC policy makers and service providers in Australia by assisting to develop targeted programs and services to improve employment outcomes of nurses and nursing assistants – a pressing issue in RAC industry.

1.5. Organization of the thesis

This thesis is organized into eight chapters.

Chapter One introduces the significance of the current research and its aims.

Chapter Two contextualizes the key constructs of the current research (i.e. job demands, coping resources and employment outcomes) in Australian RAC facilities, with a review of relevant social, policy and organizational backgrounds in Australia.

Chapter Three reviews the theoretical and empirical backgrounds for the constructs investigated in the current research, and identifies the theoretical models for the current research.

Chapter Four discusses the overall design of the current sequential mixed methods research, along with the strategies employed to enhance rigour of the current research.

Chapters Five, Six and Seven are the empirical chapters that further delineate the detailed design and methods used in each study, as well as findings from individual studies. Three manuscripts are incorporated in these three chapters.

Chapter Eight integrates both the quantitative and qualitative results to interpret the complexity of the problem in the context of the strengths and limitations of the current research. Also discussed are the implications of study findings for aged care workforce research and for aged

care policy and practice. This thesis concludes with highlighting the key findings and contributions of the current research.

Chapter Two: Context of Australian Residential Aged Care

The current research explores factors associated with employment outcomes (i.e. turnover and intention to stay or leave) of DCWs (including nurses and nursing assistants) working in Australian residential aged care (RAC) facilities. This phenomenon occurs in a social and organizational context. To explore the employment outcomes of DCWs, it is crucial to contextualize the problem. To this end, this chapter first explores the social context within which the RAC facilities operate, with a focus on the increasingly complex needs of older Australians, ageist attitudes and the perceived nature of care work. A brief overview of the Australian RAC system and RAC job characteristics is then provided.

2.1.   Complex needs of older Australians

In line with the traditional threshold of old age, older people in this thesis refer to people aged 65 and older. With increased longevity, Australia is experiencing population ageing. Older people are the fastest growing age cohort in Australia (Australian Bureau of Statistics, 2013). The number of older Australians increased from 2.3 million (12% of the total population) in 1998 to 3.3 million (14% of the total population) in 2013 (Australian Bureau of Statistics, 2013; Australian Institute of Health and Welfare, 2014). It is projected that, by 2047, approximately one in four Australians will be aged 65 and older, with the age cohort of 85 and older rising to more than 5%, suggesting that there will be a rapid rise in people with high dependency needs (Department of Health and Ageing, 2012). By 2026, about one-quarter of Australians aged 80 and older are projected to be from culturally and linguistically diverse (CALD) backgrounds (Gibson, Braun, Benham, & Mason, 2001). Given these population trends, aged care policy and service systems in Australia will face a challenge of meeting the complex needs of a heterogeneous group of older people in the coming decades. Older Australians are diverse in many aspects, including health status, cultural backgrounds and care needs. It is important to understand the implications of this diversity for the provision of RAC services and the demands placed on DCWs.

Older Australians vary in terms of health status. In 2010, 31% assessed their health as fair or poor, approximately 9% experienced mental and behavioural problems, and 23% required assistance with daily living (Australian Institute of Health and Welfare, 2010a). Among people aged 85 and older, approximately 70% experienced five or more long-term health conditions, and 30% suffered from dementia in 2013 (Australian Institute of Health and Welfare, 2014). Those in the age

cohort of 85 and older are most likely to be dependent on others for care. This group has increased from 1.2% of the total population (0.2 million people) in 1998 to 1.9% (0.4 million people) in 2013 (Australian Bureau of Statistics, 2013). This suggests a strong growth in the numbers and proportions of older people in need of RAC services, if the current community care model is retained.

Older Australians are also heterogeneous in respect of cultural background. In 2013, 37% of Australians aged 65 and older were foreign-born, with 23% from non-English-speaking countries (Australian Institute of Health and Welfare, 2014). Among foreign-born individuals, those born in European countries are reported to have the best self-assessed health status (Australian Institute of Health and Welfare, 2014). In comparison, refugee and humanitarian program entrants have been identified as particularly vulnerable to dementia, because over 25% of them experienced torture before settling in Australia (Low et al., 2009). Foreign-born RAC residents are in need of culturally appropriate care.

Reflecting the heterogeneity in health status and cultural background, older Australians are diverse with regard to care needs. In the last decade, Australian RAC facilities have seen a 23% increase in the total number of permanent residents, with residents aged 85 years and older occupying 89% of the increase (Australian Institute of Health and Welfare, 2011). In 2014, there were 270,559 people (accounting for nearly 8% of older Australians) receiving permanent residential aged care services (Australian Institute of Health and Welfare, 2014). Furthermore, in 2014, overseas born permanent residents in RAC facilities across Australia increased to 31%, with 20% born in non-English speaking countries (Australian Institute of Health and Welfare, n.d.). These RAC residents demand comprehensive individualized care.

This growing number of older adults requires a wide range of RAC services. However, these shifting demographic demands are perceived as problems rather than opportunities (Bytheway, 2010), and the complex needs of older individuals are largely ignored in comparison to those of other groups. This devaluating of older people and the services provided to them has important implications for how aged care work is valued and supported.

2.2.   Ageist attitudes

Older adults are often understood as having limited social value (Bond & Cabrero, 2007). Older individuals who are dependent on others for care are even further marginalized in our society (Bond & Cabrero, 2007). These stereotypical attitudes adversely influence the allocation of health care resources to older individuals, especially those with care needs (Tsuchiya, Dolan, & Shaw, 2003).

Ageism, according to Butler (1975), is the "process of systematic stereotyping of and discrimination against people because they are old" (p.12). The negative stereotypes of older adults stem from the biomedical tradition (Bond & Cabrero, 2007) and perceived intergenerational economic inequity. Strongly influenced by medical diagnoses and treatments of dysfunctions and impairments, the biomedical tradition defines normal biological ageing as an inevitable decline of physical and/or mental health, with a focus on incapacities and dependency rather than strengths and contributions in old age (Bond, 1992; Hooyman & Kiyak, 2008). Under these assumptions, older people are labelled as a group with poor physical and mental health conditions and demanding a high level of assistance.

Economic considerations also play a role in fostering ageism. The main triggers involve the demographic oddity in Western countries of the huge "baby boom" generation who were born during Post-World War II, and a subsequent dramatic decrease in the fertility rates (Clark, Burkhauser, Moon, Quinn, & Smeeding, 2003). With the "baby boomers" reaching retirement age, it is estimated that the tax contributions from the labour force are unlikely to afford the pension entitlements for such a large group of retirees (Karger & Stoesz, 2010). The widely used ratio of the dependent population (older adults and children) compared to the labour force population further stigmatize older adults as a social burden (Bond & Cabrero, 2007). Older adults are condemned for occupying a disproportionate amount of health care and social resources (Hall & Bytheway, 1982). Thus, the growth of ageing populations since 1980s has been increasingly viewed as a risk factor to Western economies (Estes & Phillipson, 2002; Phillipson & Baars, 2007).

An ageist attitude is challenged when growing evidence indicates that old age does not necessarily mean poor health and dependency. In the last few decades, increasing emphasis has been placed on the contributions and productivity of older adults (Hooyman & Kiyak, 2008). The most widely cited positive views of ageing are inspired by the concepts of successful ageing (Rowe & Kahn, 1997) and productive ageing (Morrow-Howell, Hinterlong, & Sherraden, 2001). Successful ageing is the capacity to maintain three essential characteristics, "low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life" (Rowe & Kahn, 1997, p. 433). Productive ageing acknowledges older adults' engagements in some paid or non-paid activities that produce a good or service, and may involve volunteering, employment and offering assistance to other family members (Morrow-Howell et al., 2001). The two concepts share some similarities, and both promote positive ageing experiences and active social engagements. These positive views of ageing, however, could further marginalize older people who are dependent on others for care (Morrow-Howell, 2012). Those requiring care assistance are viewed as a societal burden, and an enormous drain on health care and welfare resources (Bond & Cabrero, 2007).

Ageist attitudes influence the allocations of health care resources to older adults. In a mixed methods research, Tsuchiya and colleagues (2003) found that people perceive the investment in health care services for younger people producing more benefits than those for older adults. This preference was seen as a consequence of ageism. That is, older people are perceived as less productive than younger people (i.e. productivity ageism), and older people are viewed as not deserving health care anymore, because they have accomplished most of their life time goals (i.e. fair innings ageism) (Tsuchiya et al., 2003). Current health care polices show the impact of ageism. In a review of aged care coverage deficits in 46 countries, including Australia, Scheil-Adlung (2015) argued that older adults in need of aged care services are treated unequally compared with younger people with health care needs. This is evidenced by inadequate funding of the RAC sector, with RAC facilities appearing to be ranked at the bottom in the hierarchy of medical services (Scheil-Adlung, 2015).

Taken together, older people are considerably devalued in our society, owing to the concern about cost, dependency (Bond & Cabrero, 2007) and a lack of productivity by this group. Those who deliver care to older people are therefore at risk of being undervalued.

2.3. Perceived nature of aged care work

Influenced by the perceived low social status of older adults in need of care assistance, the general public may view aged care work as a menial job or a domestic task, ignoring its importance to an ageing society (Holroyd, Dahlke, Fehr, Jung, & Hunter, 2009).

In the cultural context of ageism, the dominant perception of aged care work is that it does not require complex skills. Aged care work has been labelled as body work (Twigg, 2000; Twigg, Wolkowitz, Cohen, & Nettleton, 2011), emotional work (Chenoweth et al., 2010; Edvardsson, Sandman, Nay, & Karlsson, 2009) and dirty work (Stacey, 2005; Twigg, 2000; Twigg et al., 2011). Body work relates to "intimate body care (such as bathing, toileting, and catheter management)" (England & Dyck, 2011, p. 206). Emotional work refers to supporting residents and their families in distress and coping with death and suffering (Fillion, Dupuis, Tremblay, Grâce, & Breitbart, 2006). "Dirty work" refers to occupations which are viewed as socially tainted (i.e. interaction with people or groups who are perceived as stigmatized), physically tainted (i.e. direct contact with such physical dirt as garbage and death) or morally tainted (i.e. of doubtful value to society) (Ashforth & Kreiner, 1999; Hughes, 1958, 1962). Age care work carries all three taints. Firstly, age care workers are regularly in contact with older adults who are stigmatized, resulting in social taint. Secondly, age care work itself involves intimate body care, directly handling "dirt", for example, death and body fluids, leading to physical taint. There are frequent occurrences of death in RAC facilities.

Hence, people tend to attach death and dying to aged care work. Thirdly, the social and physical taint associated with aged care work are intuitively visible to the public. Ashforth and Kreiner (1999) argue that physically and socially tainted occupations also "carry some of the stigma of moral taint", given that society interprets the dirtiness as awfulness and cleanliness as decency (p.416).

Aged care nurses and nursing assistants play essential roles in facilitating residents' well-being. Their responsibilities involve dementia care, palliative care, individual personal care and gerontological nursing care (Cooper & Glaetzer, 2004; Hooyman & Kiyak, 2008). Aged care work requires high levels of competence, commitment and confidence in working with older adults with complex needs in a physically and emotionally demanding environment (Chenoweth et al., 2010; Eley, Buikstra, Plank, Hegney, & Parker, 2007; Shen & Xiao, 2011). Working in RAC is an important and complex job.

The value of aged care work is considerably under-recognized by society (Holroyd et al., 2009). For example, nurses and nursing assistants in RAC receive lower social recognition than their peers in hospitals (Kane & Kane, 2005). Previous studies have revealed that the presence of negative attitudes towards older adults gives rise to the devaluing of services delivered to them, and accordingly devaluing those who care for them (Allen, Cherry, & Palmore, 2009; Bernard, 1998; Gallagher, Bennett, & Halford, 2006; Holroyd et al., 2009; Shen & Xiao, 2011). Working with older adults is perceived as low-prestige and low-value (Dutton, Dukerich, & Harquail, 1994; Holroyd et al., 2009). This low status creates disincentives to attract and retain DCWs.

In brief, aged care work is poorly valued in our society. This social context influences the policy and regulation of the RAC system in Australia.

2.4.   The Australian residential aged care system - a brief overview

In Australia, RAC facilities serve older people with care needs unable to be met at home. These RAC facilities are regulated and to a considerable extent, funded by the commonwealth government. In 2014, there were 2,688 RAC facilities, which were owned and run by not-for-profit organizations, private organizations and local and state governments (Australian Institute of Health and Welfare, 2014). Approximately a quarter of RAC facilities deliver specialized services to older Australians from culturally and linguistically diverse backgrounds (King et al., 2012).

The funding for RAC services comes from government subsidies and user contributions (Department of Health and Ageing, 2012). At the time when the data for this research were collected (2006-2013), RAC residents paid basic daily living costs (e.g. meals, laundry, cleaning and air-conditioning) and a means-tested fee (My Aged Care, 2015). The government contributions

were linked to residents' care needs assessed by the national assessment teams using the Aged Care Funding Instrument (Australian Institute of Health and Welfare, 2011). The assessments were conducted in three dimensions: activities of daily living, behaviour and complex health care (Australian Institute of Health and Welfare, 2011). The residents were assessed as requiring either a low level care or a high level care (Howe, 2009; Marshall & Mackenzie, 2008). Low level care includes responsibility for daily assistance, accommodation, personal and social care and domestic assistance, while high level care includes intensive nursing services in addition to daily assistance (Howe, 2009; Marshall & Mackenzie, 2008). In addition to the care subsidies linked to residents' care needs, the Government also restricted service prices and the amount of co-contributions by users (Australian Institute of Health and Welfare, 2011). The recent Aged Care Reform reduced the government budget on aged care, and increased user contributions (Department of Social Service, 2015). In addition to the basic daily fee set on the population of aged pensioners, residents entering RAC after 1st July 2014 were required to pay a means-tested care fee to cover their accommodation, care and any extra services (My Aged Care, 2015). In terms of assessment of RAC residents, the reform eliminated the distinction between high and low level care, and introduced an assessment of residents' needs for specified care and services, along with an evaluation of whether these services were eligible to be subsidised by the Government (My Aged Care, 2015).

As in many other countries, RAC facilities are underfunded in Australia (Scheil-Adlung, 2015). Based on a review of aged care coverage deficits in 46 countries, Scheil-Adlung (2015) concluded that residential aged care receives low priority in the national policy agenda of most countries, including Australia. Between 2006 and 2010, Australia spent less than 1% of gross domestic product (GDP) on funding aged care, compared with 1.3% in New Zealand and more than 2% in Denmark, Norway and the Netherlands (Scheil-Adlung, 2015).

Arguably, minimum attention has been paid to adjusting funding, resources and staffing levels in response to the escalating complex needs of the current population of RAC residents. Compared with 15 years ago, the current population of RAC residents require more complex care interventions. In 1998, 58% of permanent residents had high dependency needs (Australian Institute of Health and Welfare, 2010b). This figure increased to 71% in 2010, and reached 83% in 2014, with 52% suffering from dementia (Australian Institute of Health and Welfare, 2014). However, there are insufficient resources allocated to the RAC sector to sustain and support an adequate DCW workforce to deliver quality care for the current population of RAC residents.

Taken together, the RAC system in Australia features a high level of regulation, a lack of flexibility, and a tight budget. Operating in this context, the RAC industry is experiencing challenges to deliver quality care and to support direct care workforce.

2.5. Australian residential aged care job characteristics

Building an adequate direct care workforce with appropriate skill mix in RAC is a policy imperative of the Australian Government (Productivity Commission, 2011). However, many RAC facilities are experiencing difficulties in attracting and retaining nurses and nursing assistants (Productivity Commission, 2011). In 2012, 62% of RAC facilities reported a shortage of nurses, while 49% of RAC facilities experienced a shortage of nursing assistants (King et al., 2012). To address these shortages, it is important to understand the key job characteristics of direct care work.

The job characteristics of RAC work are influenced by the aged care policies. Within the limited budget, the RAC service providers are expected to develop responsive care models, and to satisfy care standards strictly regulated by the Government (Department of Health and Ageing, 2012). For example, since the introduction of Aged Care Act in 1997, RAC facilities across Australia have adopted the "Ageing-in-Place" care model which allows low-care residents[2] to "remain in the same facility even if their care needs increase" (Australian Institute of Health and Welfare, 2010b, p. 79). "Ageing in place" care models impose extra pressures on service delivery, as DCWs have to deal with both high-care and low-care residents with diverse care needs. An additional example is the high levels of expectation attached to the mandatory implementation of person-centred care in RAC facilities, which has been found to increase stress among DCWs (Courtney, Minichiello, & Waite, 1997; Petersen & Warbuton, 2010). It appears that these strictly regulated care standards, along with the limited care budget, constrain the ability of RAC service providers to introduce tailored interventions to respond to individual needs of residents and to support DCWs.

The perceptions of job demands among DCWs were reported in the most recent Australian national aged care workforce census and survey conducted in 2012 (King et al., 2012). About 80% of RAC facilities indicated that their staff had to cope with aggressive behaviours of residents with mental health problems; nearly half of nurses and 42% of nursing assistants reported feeling under pressure in their job; and 48% of nurses and 44% of nursing assistants reported being unable to spend enough time to meet residents' care needs (King et al., 2012). It can be seen, therefore, that the work that DCWs undertake features excessive job demands.

In managing job demands, resources are required to assist nurses and nursing assistants in accomplishing work tasks and to facilitate their skill and personal development (Bakker &

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[2] Before the introduction of Aged Care Act in 1997, there were two types of RAC facilities in Australia, nursing homes (serving high-care residents) and hostel (serving low-care residents) (Australian Institute of Health and Welfare, 2010b). As nursing homes and hostels received different funding arrangements, low-care residents had to move to nursing homes as soon as they required high care (Australian Institute of Health and Welfare, 2010b).

Demerouti, 2007). Given that insufficient funding is allocated to the RAC sector (Scheil-Adlung, 2015), it has been reported that resources are inadequate to support DCWs (Chenoweth et al., 2010). For example, the career advancement opportunities for nurses are limited (Chenoweth et al., 2014; Tuckett, Hughes, et al., 2009). It is also argued that the low remuneration does not reflect the nature of care work (Scheil-Adlung, 2015; Tuckett, Parker, Eley, & Hegney, 2009). Conversely, DCWs also acknowledge some positive aspects in terms of the resources that increase their job satisfaction. According to the most recent Australian national aged care workforce census and survey, 78% of nurses and 85% of nursing assistants reported that they received sufficient training to accomplish their job tasks; 66% of nurses and 49% of nursing assistants agreed that they had a high level of freedom in their job; 66% of nurses and 61% of nursing assistants indicated that they received the acknowledgement they deserved; and 69% of nurses and 63% of nursing assistants agreed that the relationships between supervisors and subordinates and the relationships between colleagues were good (King et al., 2012). Furthermore, long-term relationships with residents and their families have been identified as a rewarding feature of care work in a number of Australian studies (e.g. Venturato, Kellett, & Windsor, 2006). It appears that, while resources are limited in the RAC facilities, there are some rewarding aspects of care work.

Overall, recent studies show that the majority of nurses and nursing assistants perceived that their job entailed a high level of job demands. Meanwhile, they identified that a number of resources were available to help them cope with the job demands.

2.6.   Summary

The social context of residential aged care is characterised by devaluation of older people, aged care work and aged care service providers. The allocation of resources to the RAC sector receives low priority. The RAC facilities are operated under a strict regulation and a tight budget. As a consequence, the job characteristics of nurses and nursing assistants feature excessive job demands. Although inadequate resources in the RAC have been perceived as a limitation of care work, nurses and nursing assistants also identify a number of positive aspects of care work.

Following the review of context of residential aged care, the next chapter will examine the theoretical and empirical backgrounds for the constructs investigated in the current research, and propose theoretical models for the current research.

Chapter Three: Theoretical and Empirical Basis of the Thesis

The previous chapter set the context of residential aged care work in Australia. This chapter introduces the theoretical and empirical basis of the current research, which is informed by the Job Demand-Control-Support model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990). This chapter examines the major elements of the JDCS model, and the utility of the model in exploring employment outcomes (i.e. turnover or intention to stay or leave) of direct care workers (DCWs, including nurses and nursing assistants) in Australian residential aged care (RAC) facilities. Empirical evidence relevant to the application of the JDCS model in investigating staff employment outcomes is also reviewed, along with an examination of other factors that may have confounding effects on staff employment outcomes. Based on the literature review, this chapter then identifies theoretical models for the current research.

3.1. Theoretical perspectives

Psychosocial job characteristics have been a major focus of staff employment outcomes studies. "An influential theory" guiding these studies is the Job Demand-Control-Support model (Luchman & González-Morales, 2013, p. 37).

3.1.1. Job Demand-Control-Support model (JDCS)

The Job Demand-Control-Support (JDCS) model was derived from the Job Strain model, often referred to as Job Demand-Control (JDC) model, developed by Karasek (1979). The JDC model examines the impact of job demands and job control on job strains. Job demands are operationalized as sources of stress (i.e. stressors) related to task accomplishments (Karasek, 1979). Job control (also known as decision latitude) is defined as "the discretion permitted the worker in deciding how to meet" their job demands (Karasek, 1979, p. 285).

The JDC model focuses on the relationship between an individual and their job. Johnson and Hall (1988) argued that this conceptualization omitted an important dimension -- connections between an individual and their co-workers and supervisors. Therefore, a third domain (work-related social support) was added to construct the Job Demand-Control-Support model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990). Work-related social support

evaluates "opportunity to interact at work and if co-worker interaction is carried over into nonwork life" (Johnson & Hall, 1988, p 1337). The job characteristics included in the JDCS model can be categorized into two groups: (1) job demands and (2) coping resources (including job control and work-related social support) (Bakker & Demerouti, 2007). Under the JDCS model, employees experiencing a combination of high job demands and low coping resources are at risk of job strains (Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990). The job characteristics specified in each construct of the JDCS model are examined in the following sections.

3.1.2. Job demands

Job demands encompass psychological demands and physical demands (Karasek et al., 1998). Psychological demands refer to mental workloads (i.e. the effort that an employee devotes to their job), time pressures, level of responsibility, unanticipated work assignments, conflicts with other staff (Karasek, 1979; Karasek & Theorell, 1990) and "emotionally demanding interactions with clients" (Bakker & Demerouti, 2007, p. 312). Physical demands relate to physical workloads, for example, pace of physical activities (Karasek et al., 1998).

The nature of care work, as described in Chapter Two, can be understood as body work (Twigg, 2000; Twigg et al., 2011), dirty work (Stacey, 2005; Twigg, 2000; Twigg et al., 2011) and emotional work (Chenoweth et al., 2010; Edvardsson et al., 2009). Nursing assistants are responsible for much of the physical care of RAC residents. In comparison, although the nurses' jobs are less labor intensive than those of nursing assistants, the skilled nursing care they provide (e.g. observing individual residents' care needs and administrating medication to them) may involve physical activities. Another essential part of direct care work is interaction with RAC residents and their families, including responding to their suffering and coping with death and dying (Cherry, Ashcraft, & Owen, 2007; Hasson & Arnetz, 2008). Furthermore, nurses and nursing assistants are supported with limited resources (Chenoweth et al., 2010), but are required to provide quality person centered care that caters for the complex needs of RAC residents. This intensifies the job demands of RAC work. It can be seen, therefore, that the work that nurses and nursing assistants undertake features high levels of emotional and physical workloads.

3.1.3. Coping resources

Coping resources (also known as job resources) relate to psychosocial job characteristics that may assist employees in managing job demands, accomplishing work tasks and facilitating skill and personal development (Bakker & Demerouti, 2007). These coping resources include job control

and work-related social support (Johnson & Hall, 1988; Karasek, 1979). Job control is indicated by skill discretion (i.e. opportunities to develop and utilize skills) and decision authority (i.e. opportunities to participate in organizational decision making process) (Karasek, 1979). Work-related social support involves support from supervisors and colleagues and interactions between co-workers (Johnson & Hall, 1988).

A number of coping resources are available in RAC facilities to help nurses and nursing assistants cope with job demands. According to the most recent Australian national aged care workforce census and survey, the majority of nurses and nursing assistants reported that they had opportunities to gain knowledge and apply their skills to their job; in line with their leadership role in the RAC facilities, nurses expressed a higher level of freedom in their job than did nursing assistants (King et al., 2012). These results suggest that aged care is not an unskilled job. Job control, as indicated by skill discretion and decision authority, is relevant to aged care work. Further, in the same survey, most nurses and nursing assistants attached great importance to positive relationships with supervisors and colleagues (King et al., 2012), indicating that social support is an essential component of work-related factors in RAC. The operationalization of coping resources in the JDCS model is applicable in the context of RAC work.

3.1.4. Job strains

In the original JDC model, Karasek (1979) conceptualized job strains as psychological strains (e.g. poor psychological health). Some empirical research using either the JDC model or the JDCS model has operationalized turnover intent as a form of psychological strain (e.g. Chiu, Chung, Wu, & Ho, 2009; Jex, Beehr, & Roberts, 1992; Widerszal-Bazyl, Radkiewicz, Hasselhorn, Conway, & van der Heijden, 2008). This operationalization, however, has been challenged by other researchers who argued that psychological strain and turnover intent are conceptually different; and turnover intent may be a secondary outcome of psychological strain rather than a direct consequence of high job demands and low coping resources (e.g. Beehr, Glaser, Canali, & Wallwey, 2001). The current research tests both frameworks, that is, (1) turnover as a sole direct outcome of job demands and coping resources, and (2) turnover linked to job demands and coping resources through psychological health.

3.1.5. Applicability of JDCS model in current research

Many models have been developed to explain the relationships between psychosocial job characteristics and staff employment and health outcomes. This section examines why the

conceptual framework guiding the current research selects the JDCS model over another popular model, the Attraction-Selection-Attrition (ASA) model (Schneider, 1987; Schneider, Goldstiein, & Smith, 1995).

The ASA model postulates that employees within an organization tend to share common characters which mirror the policy, practice, procedure and culture of the organization, as a consequence of attraction-selection-attrition process (Schneider, 1987; Schneider et al., 1995). Attraction tends to occur when an individual's personality fits the organizational culture. Then, if organizational needs and individual needs mutually fit, selection is likely to proceed. Finally, if the fit between the employees and the organizations no longer exists, attrition (i.e. turnover) of employees may happen. The ASA model focuses on "homogeneity of personality as a function of the job and organizational choices people make" (Schneider et al., 1995, p. 758). Given that work quantity and quality are modifiable, these two elements are essential to inform social policy and practice aimed at influencing employment outcomes of DCWs. However, the important impact of work quality and quantity is absent from the ASA model. In comparison, the JDCS model investigates work quality with job control and work-related social support, and explores work quantity with job demands (Karasek et al., 1998). For this reason, the JDCS model is more appropriate than the ASA model to direct the current research.

The JDCS model "has been empirically tested more frequently than any other model" (Luchman & González-Morales, 2013, p. 37). It is the most frequently used model in the investigation of staff employment and health outcomes, and has served as a foundation for later theory development in this area (Luchman & González-Morales, 2013). Recent reviews concluded that the JDCS model is still applicable to current working environments, although it was initially conceptualized in the late 1970s (see Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Luchman & González-Morales, 2013 for reviews). The JDCS model has been empirically tested with nurses from a wide range of health care settings in many countries (e.g. Chen, Brown, Bowers, & Chang, 2015; Peterson, McGillis Hall, O'Brien-Pallas, & Cockerill, 2011), including Australian aged care nurses (e.g. Rodwell & Martin, 2013; Rodwell, Noblet, Demir, & Steane, 2009). For example, a recent study of 222 Australian aged care nurses confirmed the explanatory power of JDCS model to examine well-being and work attitudes of Australian aged care nurses (Rodwell & Martin, 2013). Another Australian study of 168 aged care nurses found that the JDCS model explained 27% variance of job satisfaction and 33% variance of psychological distress (Rodwell et al., 2009). This empirical evidence suggests that the JDCS model has sufficient explanatory power to investigate the psychosocial job characteristics of RAC nursing in Australia.

Although the majority of research applying the JDCS model has utilized a quantitative approach, this model has also received support from qualitative research. For example, guided by

the JDCS model, a focus group study of Norwegian hospital nurses has confirmed that nurses perceived excessive job demands, along with insufficient job control and work-related support, as stressful (Berland, Natvig, & Gundersen, 2008). The conception of JDCS model is therefore also appropriate to inform relevant qualitative research.

The JDCS model is not without limitations. The major critique is that the JDCS model oversimplifies the psychosocial job environment (Janssen, De Jonge, & Bakker, 1999). However, some methodologists argue that parsimony is a strength rather than a limitation for a conceptual framework (Jonson-Reid & Drake, 2008). Despite empirical research producing a lengthy list of psychosocial factors related to staff employment and health outcomes, these factors fall into either the category of job demands or coping resources (Bakker & Demerouti, 2007). For example, in RAC workforce research, two constructs (the physically and psychologically demanding nature of care work and organizational resources) have been linked to DCWs' employment outcomes (Chenoweth et al., 2010; McGilton, Boscart, Brown, & Bowers, 2014). These two constructs are relevant to the conceptualization of job demands and coping resources respectively. As suggested by Bakker and Demerouti (2007), the constructs of job demands and coping resources cover the key factors related to psychosocial work environment.

Taken together, the constructs of job demands and coping resources specified in the JDCS model reflect the key psychosocial characteristics of the aged care nursing job in Australia, with an adequate explanatory power. Compared with the ASA model, the JDCS model appears to be more appropriate to investigate employment outcomes of RAC nurses and nursing assistants in Australia.

3.2. Empirical evidence

This section reviews empirical evidence related to structural relationships between job demands, coping resources, psychological health and employment outcomes of DCWs. Given that evidence from the RAC sector is limited, this review also includes studies conducted in other health care settings or with other occupations. In addition, other factors that may have confounding effects on the above relationships are examined.

3.2.1. *Job demands, coping resources, psychological health and turnover*

Empirical research following the original conception of the JDCS model has generally reached consistent results. This body of research operationalized job strains as variables relating to poor psychological health, for example, depression and emotional exhaustion. Higher job demands and lower coping resources have been found to be predictive of higher levels of depression in

Australian aged care nurses (Rodwell & Martin, 2013), higher levels of emotional exhaustion in nurses and nursing assistants working in the US and Dutch nursing homes (Janssen, Peeters, Jonge, Houkes, & Tummers, 2004), and higher levels of psychosomatic distress and emotional exhaustion in Belgian emergency nurses (Adriaenssens, De Gucht, & Maes, 2015; Adriaenssens, De Gucht, Van Der Doef, & Maes, 2011). These findings are in line with the JDCS model.

In comparison, studies that conceptualized job strains as turnover or turnover intention have produced mixed findings. These studies applied the JDCS model to directly predict turnover or turnover intention. For example, a survey of 373 hospital nurses in Taiwan revealed that high job demand itself was not related to turnover intention, but rather a combination of high job demands and low job control predicted high turnover intention (Chiu et al., 2009). Similarly, a survey of 343 hospital nurses in Finland conducted by Salminen (2012) found that turnover intention was related to an imbalance between job demands and coping resources. However, a survey of 254 Belgian emergency nurses found that high turnover intention was predicted by low job control and low social support but not by job demands (Adriaenssens et al., 2011). Empirical research conducted among aged care employees has also generated inconsistent findings. An Australian study of 208 aged care nurses, nursing assistants, allied health professionals and managers reported that job demands and supervisor support did not have significant direct effects on turnover intention (Karantzas et al., 2012). A cross-country comparative study of nurses and nursing assistants working in the US (N= 115) and Dutch (N=260) conducted by Janssen and colleagues (2004) found that higher job control and social support predicted high levels of job satisfaction in both samples; however, the negative association between job demands and job satisfaction was only confirmed in the Netherlands sample not the US sample. This mixed empirical evidence implies that the conceptualization of job strains as turnover or turnover intention requires further comprehensive exploration.

There are a number of explanations for the above inconsistencies. Takase (2010) claims that turnover and turnover intentions are negative consequences of psychological responses to the work environment. More specifically, Beehr and colleagues (2001) posits that psychosocial work environment as indicated by job demands and coping resources are predictive of psychological problems instead of job behaviors and attitudes (e.g. turnover and turnover intention). Therefore, it can be argued that turnover and turnover intention are indirect outcomes of job demands and coping resources. Moreover, another group of researchers propose that job demands and coping resources are related to different outcomes. In a survey of 477 Dutch call centre employees, Bakker and colleagues (2003) found that turnover intention started with a motivational process and was primarily predicted by inadequate coping resources; in contrast, health problems began with a health impairment process, and was mostly explained by excessive job demands. To shed light on

the underlying mechanism, Layne and colleagues (2004) tested a model with job demands, coping resources directly associated with turnover intention and indirectly linked through psychological strain, with a sample of 145 American rehabilitation counsellors. They found that both higher stressors (i.e. job demands) and lower coping resources were related to psychological strain, while turnover intention was predicted by higher stressors not by coping resources (Layne et al., 2004). Arguably, researchers have not reached consensus on how job demands and coping resources connect to psychological health and turnover.

In sum, previous studies applying the JDCS model to investigate employee turnover have generally only concentrated on one theoretical perspective. Some studies conceptualize turnover or turnover intention as a direct outcome of job demands and coping resources (e.g. Chiu et al., 2009). While, others operationalize that job demands and coping resources link to turnover or turnover intention through psychological health (e.g. Layne et al., 2004). Discrepancies in the study findings may be a consequence of variations in study samples. However, there is no study testing both models using the same sample to ascertain which model shows better predictive power.

3.2.2. Other factors

Previous quantitative and qualitative research has found that individual and workforce characteristics are important in turnover or turnover intention research (e.g. Chenoweth et al., 2010; Hayes et al., 2012; Hayes et al., 2006; Mor Barak et al., 2001). Specifically, the qualitative studies have revealed an impact of the perceived meaning of care work on turnover intention of aged care nurses and nursing assistants (e.g. Chenoweth et al., 2014; McGilton et al., 2014).

3.2.2.1 Individual and workforce characteristics

Past research has identified the following individual and workforce characteristics in predicting employee turnover or turnover intention: age, education, currently undertaking studies, remuneration, facility ownership, working hours, whether doing shift work and size of work group (e.g. Chenoweth et al., 2010; Hayes et al., 2012; Hayes et al., 2006; Mor Barak et al., 2001).

Age The median aged for RAC nurses and nursing assistants in Australia was 48 years in 2012 (King et al., 2012). An Australian study of 1369 nurses found that nurses in aged care were significantly older than their counterparts in other health care sectors (Eley et al., 2007). One explanation is that aged care remains an unattractive job for many younger nursing students (Shen & Xiao, 2011). A lack of knowledge about ageing and a lack of experience with older adults are

likely to increase fear and prejudice about ageing (Gomez, Young, & Gomez, 1991; Henderson, Xiao, Siegloff, Kelton, & Paterson, 2008; Shen & Xiao, 2011), leading younger people to choose other career paths. Another explanation is that older employees are generally less mobile and inclined to remain fixed to a workplace (Tourangeau & Cranley, 2006). Nurse turnover research conducted in non-aged care settings has revealed that younger age is associated with the risk of greater turnover intention (Adriaenssens et al., 2011; Heijden, Dam, & Meewis, 2013; Salminen, 2012). Age appears to be a factor that is related to turnover and turnover intention of RAC nurses and nursing assistants.

Formal education Empirical evidence has revealed that formal education predicts employment outcomes. For example, a survey of 2,328 nursing assistants in American nursing homes found that better educated nursing assistants were more likely to express an intention to leave their facilities and the nursing home industry (Stearns & D'Arcy, 2008). Similarly, a study of 626 nurses in American nursing homes suggested that higher levels of education were associated with a higher level of intention to leave their nursing homes (Johnson, Kash, Naufal, & Cortés, 2010). Higher levels of education provide employees with more alternative employment opportunities. When limited opportunities for personal growth are available in their current jobs, better educated nurses and nursing assistants may seek career advancement in other organizations or professions (Hayes et al., 2006).

Currently undertaking studies A lack of career advancement opportunities is one of the most common reasons contributing to nurse turnover (LeVasseur, Wang, Mathews, & Boland, 2009; Tummers, Groeneveld, & Lankhaar, 2013). An Australian study of 1,365 nurses working in aged care and other health care sectors found that nurses undertaking further education reported a higher level of job satisfaction (Eley, Francis, & Hegney, 2013). Hence, the opportunities to pursue further education should be taken into consideration while investigating employment outcomes of RAC nurses and nursing assistants.

Remuneration Generally, evidence from RAC workforce research suggests that wage levels in this sector are related to employment outcomes of nurses and nursing assistants in RAC facilities. One study found that a lower wage predicted intention to leave among 2,328 nursing assistants in American nursing homes (Stearns & D'Arcy, 2008). Based on a review of 25 studies on attraction and retention of nurses in aged and dementia care, in the U.S., Australia and other countries, Chenoweth and colleagues (2010) identified paying a fair wage as a crucial strategy to attract and retain nurses. This determinant role of wages in staff retention and recruitment, however, is not

widely supported by empirical evidence from other areas. For instance, a comprehensive literature review on the turnover and retention of midwives and consultants by Shen, Cox and McBride (2004) revealed that pay is irrelevant to voluntary turnover, since employees are aware of their wage when joining the organization.

However, the stigmatised perception of the aged care industry (Price, Alde, Provis, Harris, & Stack, 2004) may help to explain why wage levels have become a significant issue in the employment outcomes of DCWs. Organizations with an undesirable image need to offer competitive remuneration to improve organizational attractiveness (Aiman-Smith, Bauer, & Cable, 2001). In addition, equity theory suggests that job satisfaction is not necessarily influenced by the money value of a wage but the comparison of that money value to another individual who is doing comparable work (Adams, 1965). Remuneration should be included in the investigation of employment outcomes of nurses and nursing assistants in RAC.

Facility ownership Past research examining the relationship between DCWs' employment outcomes and facility ownership is mainly based on U.S. samples. The evidence from these studies has suggested that non-profit facilities are more likely to have better workforce retention, compared with for-profit facilities (Temple, Dobbs, & Andel, 2009). This has been consistently found in a survey of 854 American nursing homes (Castle & Engberg, 2006), a survey of 250 American nursing homes (Banaszak-Holl & Hines, 1996) and a survey of 944 American nursing homes (Temple et al., 2009). The argument is that for-profit facilities, with profit-seeking organizational goals, tend to focus on the generation of profits rather than staff benefits and resident outcomes (Castle & Engberg, 2006). By contrast, non-profit organizations, with less focus on immediate financial return, are more likely to offer their employees better resources and benefits (Temple et al., 2009).

The Australian aged care policy and organizational context are different from those of America. The RAC facilities in Australia are owned and operated by not-for-profit organizations, private organizations and the local and state Governments (Australian Institute of Health and Welfare, 2011). Despite differences in facility ownership in Australia and America, facility ownership is expected to affect employment outcomes of DCWs in Australia.

Working hours In 2012, the majority (72%) of DCWs in Australia were in permanent part-time positions, working less than 35 hours per week (King et al., 2012). Data drawn from a survey of 10,107 DCWs in Japan revealed that part-time DCWs were less likely to report intention to leave than were full-time DCWs (Kachi, Inoue, & Toyokawa, 2010). A possible explanation of this may be that part-time employment provides flexible working hours which are considered as a rewarding

feature of aged care work (Chenoweth et al., 2010). In 2012, 89% of DCWs were female (King et al., 2012). Women usually assume greater family responsibilities, including raising children, caring for older parents and other dependent family members, than do men (Wermeling & Smith, 2009). In the female dominated workforce, flexible work arrangements emerge as an important factor related to employment outcomes (Lee & Maurer, 1999; Robinson, Barbee, Martin, Singer, & Yegidis, 2003). Hence, the influence of working hours on DCWs' employment outcomes is an important consideration.

Shift work Previous nursing workforce research has suggested that work schedule is associated with turnover intention. For example, a survey of 1,257 nurses in Australian hospitals found that night shifts increased intention to leave (Pisarski et al., 2006). Shift work or nonstandard work schedules tend to disturb employees' sleeping patterns and affect their family and social lives (Khaleque, 1999), thus, may influence their employment outcomes. A flexible work schedule, however, may mitigate the negative influence of shift work (Staines & Pleck, 1986). A survey of 792 nurses in American hospitals observed that the work schedule that had minimum conflicts with nurses' social activities was related to less turnover intention (Choi, Jameson, Brekke, Anderson, & Podratz, 1989). Work schedules that promote a work-life balance link to better employment outcomes.

Size of work group Group size affects interactions between team members and between supervisors and subordinates (Cohen, Ben-Tura, & Vashdi, 2012). The quality of these interactions in a larger group with seven or more people is reported to be poorer than that in a smaller group with fewer than seven members (Cohen et al., 2012). As a consequence, job satisfaction in larger groups has been found to be lower than that in smaller groups (Carron & Spink, 1995). A mixed methods study using focus groups and a quantitative analysis of register data conducted by Sellgren and colleagues (2009) in a Swedish university hospital with about 9000 employees, found that a smaller work group size was associated with lower staff turnover. In RAC facilities, registered nurses assume supervisor roles, while nursing assistants are subordinates. The implications of working in a larger group for registered nurses may mean more job responsibility and less communication with subordinates; whereas for nursing assistants, this may indicate less support and lower quality interactions. These may increase job dissatisfaction and the likelihood of turnover (Currie & Carr Hill, 2012). Group size therefore appears to be a confounding factor of employment outcomes of nurses and nursing assistants.

3.2.2.2. Perceived meaning of care work

Evidence from qualitative research suggested that the perceived meaning of care work influences employment outcomes of nurses (Chenoweth et al., 2014). An Australian qualitative interview study found that RAC nurses identified long-term relationships with residents and their families and a sense of helping residents as meaningful and rewarding features of care work; while being devalued by the society and counterparts in other health care settings was a major cause of job dissatisfaction among RAC nurses (Venturato et al., 2006). The qualitative component of a mixed methods study of Australian nurses in aged and dementia care revealed that the intrinsic meaning of care work motivated nurses to care for older people, and a sense of feeling valued by their organizations and colleagues contributed to job satisfaction and retention of nurses (Chenoweth et al., 2014). It is, however, unclear whether the meaning of care work is perceived differently by nursing assistants and whether the culture of overseas born DCWs influences how care work is perceived. Further qualitative work is required to understand these aspects.

Given the empirical evidence reviewed above, individual and workforce characteristics (i.e. age, education, currently undertaking studies, remuneration, facility ownership, working hours, whether doing shift work and size of work group) and perceived meaning of care work should be included in a complete and full investigation of employment outcomes of nurses and nursing assistants.

3.3.   Proposed theoretical models

Informed by the JDCS model, the current research examines the employment outcomes of nurses and nursing assistants with a mixed methods approach.

Aim 1: To test predictive models of turnover of residential aged care nurses in Australia.

Two quantitative studies (Study 1 and Study 2) are used to explore theoretical explanations of turnover of RAC nurses. Study 1 tests two hypothesized models of turnover of RAC nurses:

Model A replicates previous research which conceptualized turnover as a direct outcome of job demands and coping resources (e.g. Chiu et al., 2009) (see Figure 3.1).

Figure 3.1: Model A
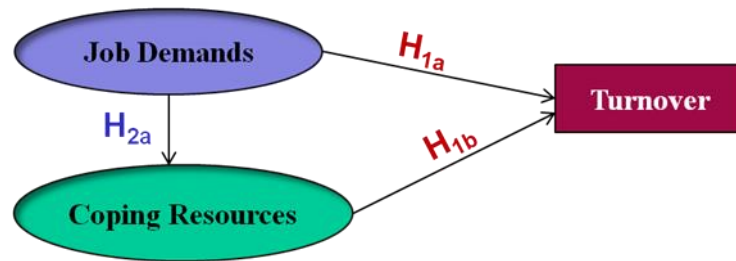
Model B hypothesizes that job demands and coping resources pose both direct and indirect effects through psychological health on turnover (see Figure 3.2). Model B is adapted from Layne and associates (2004) with two important additions:

1) Layne and associates' (2004) tested the model only with observed variables. In comparison, Model B applies latent constructs to indicate job demands, coping resources and psychological health. The introduction of latent constructs to the model improves the predictive power of the full model "by specifying a measurement model for each construct and separating measurement error from the true score" (Cheong & Mackinnon, 2011, p. 419).

2) Layne and associates (2004) measured all variables at a static point in time. In contrast, the criterion variable, Turnover, in the current Study 1, is measured after the predictor variables. This conception makes it possible to examine directional effects (Kline, 2011).

Figure 3.2: Model B

(Adapted from Layne and associates (2004))
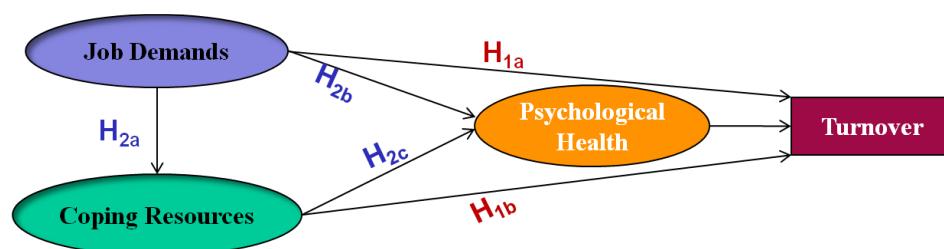
The investigation of two predictive models of RAC nurse turnover involves testing of nine hypotheses:

H_{1a}: Job demands would be directly associated with turnover.

H_{1b}: Coping resources would be negatively and directly associated with turnover.

H_{2a}: Job demands would be negatively associated with coping resources.

H_{2b}: Lower job demands would be directly associated with better psychological health.

H_{2c}: Higher coping resources would be directly associated with better psychological health.

H_{3a}: Coping resources would mediate the relationship between job demands and psychological health.

H_{3b}: Psychological health would mediate the association between coping resources and turnover.

H_{3c}: Coping resources would mediate the association between job demands and turnover.

H_{3d}: Psychological health would mediate the association between job demands and turnover.

Findings from Study 1 assist to identify areas that require further exploration. Study 2 is performed to more closely examine predictors of turnover of RAC nurses. For parsimony in presentation, theories and empirical evidence guiding Study 2 is delineated in Chapter Six.

Apart from the focal variables specified in Models A and B, the testing of models controls for the effects of individual and workforce characteristics. In terms of perceived meaning of care work, the quantitative approach alone is limited for a complete exploration of this phenomenon as it may compartmentalize and restrict complex understanding (Yin, 2009). In comparison, qualitative research has the strength of integrating multiple contextual factors to delineate complex phenomena (Creswell & Plano Clark, 2011), such as the meaning of care work. Therefore, following previous mixed methods research designs (e.g. Chenoweth et al., 2014), the effects of the perceived meaning of care work is examined in the subsequent qualitative study.

Aim 2: To understand perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants.

To shed light on Aim 2, qualitative research (Study 3) is employed to unfold individual DCWs' perceptions of the rewards and difficulties pertaining to job demands and coping resources of residential aged care work, how these are related to their employment intentions, and how these vary between nurses and nursing assistants, and the cultural diversity of workers. The effects of

individual and workforce characteristics and perceived meaning of care work are taken into consideration.

3.4. Summary

The key elements of Job Demand-Control-Support (JDCS) model reflect the psychosocial work environment of RAC work in Australia. The JDCS model has been applied in previous aged care workforce research, and has demonstrated satisfactory explanatory power of job strain related outcomes in Australian aged care nurse samples. Derived from the JDCS model, two theoretical explanations have been used to examine employee turnover: one proposes that job demands and coping resources are directly related to turnover; while the other maintains that job demands and coping resources link to turnover through psychological health. It is unclear which model provides better predictive power.

The current research will quantitatively test the two theoretical models stated above to shed light on the structural relationships between job demands, coping resources, psychological health and turnover of RAC nurses, taking into account a number of individual and workforce characteristics (i.e. age, education, currently undertaking studies, remuneration, facility ownership, working hours, whether doing shift work and size of work group). Furthermore, a qualitative approach will be used to closely explore perceived meaning of care work, in addition to perceived job demands, coping resources and workforce characteristics, and how these factors contribute to intention to stay or leave of nurses and nursing assistants. The next chapter presents the overall design of the current mixed methods research.

Chapter Four: Methodology

The previous chapter reviewed the theoretical and empirical backgrounds for this thesis. This chapter describes and justifies the overall design of the current research. Following a sequential mixed methods approach (Creswell, 2009), the current research uses quantitative and qualitative methods to investigate employment outcomes (i.e. turnover and intention to stay or leave) of direct care workers (DCWs, including nurses and nursing assistants) in Australian residential aged care (RAC) facilities. First, the rationale for a sequential mixed methods research design is discussed, followed by a description of the research design and a graphical illustration of the research activities undertaken. Strategies employed to enhance rigour of the quantitative and qualitative studies are discussed. Lastly, ethical issues are examined. This chapter focuses on overall design of the current mixed methods research. The more detailed descriptions of methods used in each study (e.g. data and sampling) are delineated in the following empirical Chapters Five, Six and Seven.

4.1. Rationale for mixed methods design

The complexity of DCWs' employment outcomes requires a full exploration of predictive models and hypotheses, and a deeper understanding of experiences and perceptions of individual nurses and nursing assistants. A mixed methods approach is appropriate for the current research, because neither quantitative nor qualitative methods alone are adequate to ascertain the predictive models and underlying dynamics of this complex issue (Ivankova, Creswell, & Stick, 2006).

Quantitative and qualitative methods have both advantages and disadvantages. The quantitative approach can generalize findings to a larger population, test hypotheses, identify trends, and predict factors associated with employment outcomes of DCWs in RAC (Jonson-Reid & Drake, 2008). However, it may compartmentalise and restrict complex understanding (Yin, 2009), and may not obtain valid and reliable data from nursing assistants with limited education and English proficiency. It is difficult to collect the quantitative data from some overseas born DCWs with English literacy limitations, as they are unlikely to respond to survey questions (Low et al., 2009).

On the other hand, qualitative research has a strength of integrating multiple contextual factors to delineate complex problems (Creswell & Plano Clark, 2011). It can uncover the meaning and nature of care work, explore unique perceptions of individual DCWs, provide an in-depth insight into what contributes to employment outcomes of DCWs, and capture the perspectives of DCWs who may not be able to understand survey questions due to insufficient English proficiency.

Qualitative approaches, however, are unable to generalize findings and identify trends (Creswell, 2009).

A mixed methods approach offers "the most informative, complete, balanced, and useful research results" (Johnson et al., 2007, p.129). Hence, the current research utilises a mixed methods approach to explore factors associated with employment outcomes of nurses and nursing assistants.

4.2. Research Design

The research design employs a sequential strategy with complementarity for the mixed methods (Creswell, 2009). A graphical illustration of the research design is shown in Figure 4.1. To address Aim 1, testing theoretical models for predicting turnover of RAC nurses, a quantitative approach is used with two studies (Studies 1 and 2). Then, informed by the quantitative results, an interview guide and sampling strategy are constructed to direct the subsequent qualitative study (Study 3) to explore Aim 2, understanding perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants.

The data used to explored Aim 1 are derived from Nurses and Midwives e-cohort Study (NMeS: Turner et al., 2009). The NMeS has generated a comprehensive source of data for studies of health and work life balance of nurses in a wide range of health care settings, including RAC nurses and acute care nurses, across three countries (Australia, New Zealand, and the United Kingdom) (Turner et al., 2009). On-line surveys were utilized to collect the longitudinal data (baseline: April 1st, 2006 -March 31st, 2008; and Survey 2: August 30th, 2008- September 26th, 2009). A number of strategies were used to recruit and retain nurse participants. For example, advertisements were posted in mass newsletters; personalized mails and emails were sent to nurses; reminder emails, mails and phone calls were made to encourage those who did not respond to the surveys; and nurses registered with the NMeS received a welcome message, quarterly newsletters, and birthday cards. Although response rate for the baseline survey was low (2.3%) (Schluter, Turner, & Benefer, 2012), the participants were statistically representative samples of the general nursing workforce, including the RAC nursing workforce, in the three countries (Schluter, Turner, Huntington, Bain, & McClure, 2011).

The NMeS data is selected for the current research for the following three reasons:

First, the NMeS data set included variables of interest relating to Aim 1, that is, Job Demands, Coping Resources, Turnover, Psychological Health and individual and workforce characteristics. The latent constructs, Job Demand, Coping Resources and Psychological Health were measured using validated instruments. The NMeS collected longitudinal data on nurses. The

Figure 4.1. Graphical illustration of the sequential mixed methods design*

Purpose	Phase	Procedure

Purpose

Aim 1:
To test predictive models of turnover of RAC nurses in Australia

Aim 2:
To understand perceptions of job demands, coping resources and employment intentions among Australian RAC nurses and nursing assistants

Phase

QUAN Data Collection

QUAN Study 1

Connecting Study 1 to Study 2

QUAN Study 2

Linking QUAN Studies to QUAL Study

QUAL Study 3 Data collection

QUAL Data Analysis

Integration of the QUAN and QUAL Findings

Procedure

Existing data from Nurses and Midwives e-Cohort Study

- Sample selection based on working in RAC at baseline (N=239)
- Multiple imputation of missing data
- Checking reliability of instruments
- Structural equation modelling
- Bootstrap resampling to test mediation hypotheses

- Identify areas requiring for further exploration, based on findings from Study 1
- Conceptualise Study 2

- Use the same sample as Study 1 (N=239)
- Multiple imputation of missing data
- Checking reliability of instruments
- Hierarchical logistic regression analyses
- Hierarchical linear regression analyses

- Identify areas requiring further exploration and conceptualise purposive sampling strategy for qualitative Study 3
- Develop interview questions and probes based on findings from Study1 and Study 2

- Individual semi-structured interviews with 16 participants (10 nursing assistants and 6 nurses)

- Coding
- Thematic analysis
- Constant comparison

- Interpret and synthesise findings from Study 1, Study 2 and Study 3.

*Adapted from Ivankova, Creswell, and Stick (2006).
QUAN: quantitative; QUAL: qualitative.

information on "work setting of main employment" on based line and a follow-up survey made it possible to investigate "actual" occupational turnover of RAC nurses.

Second, the NMeS sampled both RAC nurses and acute care nurses, which matches the original design of the current research. Initially, this thesis also attempted to examine the relationship between health care setting (i.e. RAC and acute care) and turnover of nurses. Due to the issue of measurement invariance (discussed later in this paragraph), the current research was unable to compare turnover between RAC nurses and acute care nurses. However, lessons learnt from this non-comparison might be useful for future research in this area. Therefore, this paragraph briefly introduces the reasons why the turnover of RAC nurses were not comparable to that of acute care nurses. Comparing turnover between RAC nurses and acute care nurses involves testing mean differences of latent constructs. One of the important steps before this group comparison procedure is to validate the equivalence of measurement instruments of latent construct across different populations (in this case, RAC and acute care nurses), despite whether the instrument shows sound reliability (Mellenbergh, 1989; Meredith, 1993; Schmitt & Kuljanin, 2008; Vandenberg & Lance, 2000). The three latent constructs (i.e. job demands, coping resources and psychological health) in the current research were measured with self-report questionnaires. The comparisons of these constructs between the two groups are only meaningful when the interpretations of the questionnaires are equivalent between the RAC nurses and acute care nurses. For example, two of the three dimensions of Job Demands are indicated using the Job Content Questionnaire (JCQ) with 18 items (Karasek et al., 1998). These items are assessed with four-point Likert-type response scales, ranging from "strongly disagree" to "strongly agree". An example item is "I get to do a variety of different things on my job". Given differences in job tasks and care setting, it is unclear whether the responses of "strongly agree" to this item from the RAC nurses are equivalent to those from the acute care nurses. Therefore, simply applying traditional parametric statistical tests, for example, *t*-test and ANOVA, to estimate mean differences of latent constructs between RAC and acute care nurses, without first validating measurement invariance across the two groups, is likely to produce invalid results (Gao & Newcombe, 2015). For the current research, a multi-group confirmatory factor analysis (CFA) model with structural equation modeling (SEM) is used to test measurement invariance of latent constructs between RAC and acute care nurse. The results showed that there was substantial non-equivalence of measurement instruments (Gao & Newcombe, 2015)[3]. Therefore, the current research is unable to simultaneously test RAC and acute care nurses in the

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[3] For the detailed results regarding non-equivalence of measurement instruments in RAC and acute care nurses, please refer to Gao and Newcombe (2015).

same models. The final research design excludes acute care nurses, with Aim 1 specifically focusing on the RAC nurses.

Third, the full Australian sample size at baseline was 5579. This study selected 254 respondents who indicated working in the RAC at baseline. Fifteen cases with extreme scores across the variables of interest were excluded from analyses. Consequently, the final sample size for the current research was 239. This sample size is adequate to perform relevant statistical tests to address Aim 1.

Overall, the NMeS included validated measures of the key constructs of the current research with an adequate sample size. The NMeS data are therefore appropriate to address Aim 1. Additionally, the NMeS data was the most comprehensive data set available to explore Aim 1 when the quantitative studies commenced in 2012.

To fully explore Aim 1, two distinct quantitative studies (Study 1 and Study 2) were conducted. Study 1 tested the two hypothesized models of turnover of RAC nurses specified in Chapter Three, using structural equation modelling (SEM). Two full SEM models were tested. This is considered as one of the best SEM practices to test theories (Guo et al., 2009). Based on findings from Study 1, areas that require further exploration were identified. An additional quantitative analysis on the NMeS data (Study 2) was conducted to more closely explore the relationships uncovered in Study 1. Thereafter, findings from Study 1 and Study 2 were integrated.

The NMeS only sampled nurses. Nursing assistants were excluded from the NMeS. Therefore, Study 1 and Study 2 did not investigate nursing assistants. Given that the variables relating to cultural and linguistic background, citizenship and immigration status had substantial missing responses, Studies 1 and 2 were unable to distinguish overseas born nurses from native born nurses. It was therefore unclear whether the quantitative findings based on the nurse sample were applicable to inform policy and practice for the nursing assistants, and for the overseas born DCWs.

To further explain the results from Study 1 and Study 2, especially some potentially unexpected findings, in-depth qualitative data are considered as informative (Morse, 1991). Hence, a qualitative study was conducted to address Aim 2, understanding perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants. Specifically, Study 3 attempted to delineate how cultural diversity affected DCWs' employment intentions, and to capture the perspectives of both nursing assistants and nurses. Findings from Study 1 and Study 2 were useful for the design of Study 3: they helped to develop interview questions and additional probes to guide the semi-structured interviews; and they informed the conceptualization of the purposive sampling strategy.

Study 3 recruited a purposive sample of DCWs from a well-established non-profit RAC facility located in an urban area of Queensland. In 2013, there were 60 high-care beds in this facility, with dementia-specific services. The ratio of nurses to nursing assistants was 2:3. Given the size and services provided and the skill mix of staff, it is a typical RAC facility in Australia. It was atypical in terms of cultural diversity (the staff and residents were from approximately 55 linguistic backgrounds). In light of the wide range of nurses and nursing assistants from diverse cultural backgrounds in this facility, it was possible to generate rich information from the participants with both within and across group comparisons. Therefore, this facility was included as a critical case rather than a typical case (Patton, 2014). The sample was limited to permanent full-time or part-time nursing assistants and nurses who had Australian citizenship or permanent residency as citizenship and residency status affect workers' employment intentions (Shutes, 2012). Those who did not have either Australian citizenship or permanent residency, casual nursing assistants and nurses, allied health professionals, and non-direct care workers, such as kitchen staff, were excluded. Nineteen DCWs expressed interest in participating, three did not meet the inclusion criteria, as they were casual nursing assistants. Consequently, the sample comprised 16 participants (ten nursing assistants and six nurses).

Study 3 applied a qualitative descriptive approach. Data collection occurred between June and September 2013 with face-to-face individual semi-structured interviews. Interviews were conducted at places suggested by the participants, and lasted between 23 and 47 minutes, given that busy DCWs were not able to spare more time. All interviews were audio recorded and transcribed verbatim. Three DCWs were born in China. As the researcher is bilingual in Chinese and English, the interviews with these three DCWs were conducted in Mandarin Chinese. Following Birbili (2000), the interviews were transcribed in Chinese verbatim, then translated into English, and finally translated back to Chinese to check translation accuracy. Thematic analysis was employed to analyze the interview data (Braun & Clarke, 2006). Constant comparison was applied to examine similarities and differences between groups (Glaser & Strauss, 1967).

Following Creswell, Plano Clark, Gutmann, and Hanson (2003), data from the three studies was integrated to fully understand and interpret factors related to employment outcomes of nurses and nursing assistants. As complementary studies, Study 3 extended findings from Study 1 and Study 2, and helped to shed light on the unexpected results from Study 1 and Study 2. Both qualitative and quantitative data from the three studies were then synthesized to draw out the final conclusions. Further details on methods used in each study are provided in Chapters Five, Six and Seven in the reporting of the three empirical studies.

4.3. Rigour

Researchers apply different criteria to evaluate the rigour of quantitative and qualitative inquires. Measurement in quantitative studies is generally assessed with statistical measures of reliability and validity (Jonson-Reid & Drake, 2008). These two terms, however, are not widely accepted (or interpreted) in the same way by qualitative researchers, who have developed numerous typologies to describe rigour of the qualitative inquiry (Creswell & Miller, 2000). In the ongoing debate of these typologies, a consensus is that rigorous qualitative research should satisfy the criterion of trustworthiness (Creswell & Miller, 2000). Hence, the rigour of Study 1 and Study 2 (quantitative) is evaluated against reliability and validity, while the rigour of Study 3 (qualitative) is examined according to the four aspects of trustworthiness (credibility, transferability, dependability and confirmability) set by Guba (1981).

4.3.1. *Quantitative studies: assessing reliability and validity*

The quantitative studies utilized the NMeS data set with three standardized instruments, *Job Content Questionnaire* (JCQ: Karasek et al., 1998), *Effort Reward Imbalance questionnaire* (ERI: Siegrist, 1996) and the *psychological health domains of SF-36* (Ware, 2000). This section examines the psychometric properties (i.e. reliability and validity) of these three instruments.

4.3.1.1. *Description of instruments*

The *Job Content Questionnaire (JCQ)* measures psychosocial job characteristics at a task level (Karasek et al., 1998). A total of 18 items assess five domains of job factors with four-point Likert-type response scales, ranging from "strongly disagree" to "strongly agree":

1) Psychological Demands (measuring mental workload of the job with three reverse-coded items; e.g. "I am free from conflicting demands that others make");

2) Physical Demands (assessing physical activities of the job with two items; e.g. "my work requires rapid and continuous physical activity");

3) Job Control (also known as Decision Latitude), consisting of two subscales, Decision Authority (indicating opportunities to participate in organizational decision making with three items; e.g. "on my job, I have very little freedom to decide how to do my work") and Skill Discretion (evaluating opportunities to utilize one's skills and knowledge with six items; e.g. "my job requires a high level of skill");

4)   Supervisor Support (assessing work-related support from supervisors with two items; e.g. "my supervisor is concerned about the welfare of those under him/her"); and

5)   Co-worker Support (evaluating opportunities and quality to interact with co-workers with two items; e.g. "People I work with are helpful in getting the job done").

Compared with the JCQ, the *Effort Reward Imbalance questionnaire (ERI)* extends the task level of job characteristics to a broader employment context, including two dimensions, Effort and Rewards (Siegrist, 1996).

1)   The Effort dimension consists of six items relating to responsibility, working overtime, interruptions and disturbances, time pressure, physical demands, and increasing demands.

2)   The Rewards dimension contains 11 items (e.g. "considering all my efforts and achievements, I receive the respect and prestige I deserve at work").

The responses to the ERI are assessed in two steps: the first step asks participants to indicate their agreement with each statement; and those indicating an agreement are asked to then evaluate their level of stress with four-point Likert-type response scales, ranging from "I am not at all stressed" to "I am very stressed".

The *Psychological health domains of SF-36* measure health-related quality of life (Ware, 2000). Participants respond to questions with a five-point Likert-type scale, either from "all of the time" to "none of the time", or from "not at all" to "extremely". There are four domains relating to psychological health:

1)   Vitality (4 items; e.g. "did you feel tired");

2)   Social Functioning (2 items; e.g. "during the past four weeks, how much of the time has your physical health or emotional problems interfered with your social activities");

3)   Role Emotional (3 items; e.g. "accomplished less than you would like"); and

4)   Mental Health (5 items; e.g. "have you been very nervous").

The data used in the current quantitative studies was derived from the NMeS (Turner et al., 2009). The instruments used in the NMeS have demonstrated sound psychometric properties (Dawson, Schluter, Hodges, Stewart, & Turner, 2011).

The JCQ has been validated with employees from a wide range of occupations, including nurses (e.g. Lee, Lee, Gillen, & Krause, 2014; Merrick, Duffield, Baldwin, & Fry, 2012; Sembajwe et al., 2012). The domains of JCQ have been found to demonstrate construct validity in a study of 885 American hospital nurses and health care workers (Seago & Faucett, 1997). A recent Australian study of 160 nurses in general practice has shown adequate internal consistency reliability for the JCQ, with Cronbach's alpha values[4] for each domain ranging from .71 to .86 (Merrick et al., 2012).

The ERI showed adequate psychometric properties in previous research using either general workforce samples or nurse samples (e.g. Calnan, Wadsworth, May, Smith, & Wainwright, 2004; Fillion et al., 2007; Lee et al., 2014). For example, an American study of 304 intensive-care unit nurses reported good internal consistency reliability as indicated by Cronbach's alpha values of .80 for Effort and .81 for Rewards (Lee et al., 2014). The validity of ERI has been established in a UK study of 4,135 people in paid employment (Calnan et al., 2004).

In terms of the SF-36, validity and reliability have been confirmed by an Australian national household study, the Household, Income and Labour Dynamics in Australia (HILDA) Survey, with 13,055 respondents across Australia (Butterworth & Crosier, 2004). In the HILDA, Cronbach's alpha values for the psychological health domains of SF-36 ranged from .82 and .83 (Butterworth & Crosier, 2004).

Overall, the JCQ, ERI and the psychological health dimensions of the SF-36 Health Survey appear to be psychometrically sound instruments for measuring the latent constructs of Job Demands, Coping Resources and Psychological Health in RAC nurse samples. A number of researchers propose combining the JDCS and the ERI to assess Job Demands to improve the predictive power of measurement, as Psychological and Physical Demands in the JDCS and Effort in the ERI appear to be similar concepts (Calnan et al., 2004; Fillion et al., 2007). In line with previous nursing research (e.g. Fillion et al., 2007), Job Demands were indicated by Physical Demands and Psychological Demands from the JCQ and Effort from the ERI. Coping Resources were indicated by Supervisor Support, Co-worker Support and Job Control from the JCQ. Psychological Health was measured by Mental Health, Role Emotional, Social Functioning and Vitality.

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[4] A Cronbach's alpha value of .70 or greater is considered as adequate (DeVellis, 2003; Nunnally & Bernstein, 1994).

4.3.2. *Qualitative study: facilitating trustworthiness*

The rigour of qualitative research is assessed with criteria of trustworthiness, including credibility, transferability, dependability and confirmability (Guba, 1981). *Credibility* addresses "internal validity", that is, establishing confidence in the "true value" of the qualitative findings; *transferability* is a term equivalent to "external validity" (i.e. "generalizability" of the findings); *dependability* involves "reliability" (i.e. consistency of the findings); and *confirmability* refers to "objectivity", that is, the interpretations of results are not influenced by the researcher's subjective interpretations and personal bias (Guba, 1981, p. 80). In Study 3, the threats to trustworthiness included a number of sources of bias. First, the perceptions and motivations of researchers may influence how they interpret the qualitative data (Cohen & Crabtree, 2008). Second, the qualitative study was conducted with a non-random and relatively small sample; hence, "the investigator risks invalidity when conducting the research in a more 'average' situation" (Morse, 2015, p. 5). Third, the interview questions and research design may be biased (Morse, 2015). This section discusses strategies utilized to address these biases and to enhance trustworthiness of the qualitative study.

To verify the criteria of trustworthiness, Creswell (1998) synthesizes eight essential strategies widely used by qualitative researchers: "prolonged engagement and persistent observation in the field", "triangulation", "peer review or debriefing", "negative case analysis", "clarifying researcher bias", "member checks", "rich, thick description" and "external audits" (pp. 201-203). Creswell (1998) suggests using at least two of these eight strategies to enhance trustworthiness in qualitative research, and that external audits and peer debriefing "are more rigorous" than triangulation, thick description and member checking (p.203). Therefore, Study 3 applies "prolonged engagement", "clarifying researcher bias", "external audits" and "peer debriefing" to facilitate the trustworthiness of the qualitative findings.

Prolonged engagement. Study 3 is not an ethnographic study. However, in order to acquaint myself with the daily routines of RAC work, I spent more than 30 days in the facility selected for interviews. This provided an opportunity to get to know staff in the facility and to become familiar with the daily routines, and for staff to get used to my presence in the facility. It also allowed for identification of the potential spaces where interviews might take place. This facilitated recruitment of research participants independent of their superiors. This was especially useful in soliciting perspectives from overseas born nurses and nursing assistants who might be reluctant to be interviewed by researchers due to English language limitation.

Clarifying researcher bias. Although the 30-day experience in a RAC facility was not extensive, it might potentially lead to personal bias on the issue, and a subjective interpretation of

the interview data (Creswell, 1998). To eliminate the potential bias, I used a diary to constantly record assumptions made and to document interview details (Creswell, 1998). I regularly discussed these memos with my advisors to clarify personal assumptions that might affect data collection and interpretations. This reflection procedure ensured *creditability* and *confirmability* of the interview data collection and interpretations (Creswell, 2009).

External audits. In terms of data collection, first, I developed a number of interview questions and probes, informed by the findings from Study 1 and Study 2. Then, the interview procedures were audited by my advisors. Comments from my advisors enhanced the interview guide and probes which helped me to focus on the key areas of interest, and at the same time, to obtain rich information from the participants.

With regard to the qualitative data analysis, first, I thoroughly reviewed the interview transcripts, coded the data and aggregated similar codes to generate themes. Then, two of my advisors independently verified a number of transcripts and conducted auditing on the accuracy of the codes. All four advisors reviewed and constantly discussed the codes, themes and associations between these themes. Through the discussions, disagreements were addressed, leading to an establishment of higher-order categories. This constant auditing procedure played an essential role to enhance *dependability* of the qualitative findings (Creswell, 1998).

Peer debriefing. Peer debriefing, also called peer review, "is the review of the data and research process by someone who is familiar with the research or the phenomenon being explored… This procedure is best used over time during the process of an entire study" (Creswell & Miller, 2000, p. 129). Before data collection, the qualitative research design was presented in a seminar to researchers and fellow research higher degree students in the School of Nursing, Midwifery and Social Work, the University of Queensland, with a professor external to this research leading the discussion and providing thoughtful written comments. The feedback from the audience and the professor helped improve the qualitative research design and the interview guide. After the completion of qualitative analysis, a second seminar presentation was held, with an associate professor external to this research thoroughly reviewing and critically commenting on the findings and research process. Comments from the second seminar provided valuable insights to enhance the interpretations of the qualitative data. The final interpretations of qualitative data incorporated extensive comments from experienced researchers with expertise in RAC workforce research. The implementation of peer debriefing further strengthened the *credibility* and *dependability* of the qualitative findings (Padgett, 1998).

Overall, the reliability and validity of Study 1 and Study 2 (quantitative) were enhanced by using three instruments with sound psychometric properties. The trustworthiness of Study 3

(qualitative) was achieved through prolonged engagement, extensive reflections to clarify the researcher's bias, constant external audits and comprehensive peer debriefing (Creswell, 1998).

4.4. Ethical considerations

Studies 1 and 2 utilized an existing data set derived from the NMeS. The NMeS was approved by the University of Queensland's Behavioural and Social Science Ethical Review Committee (No. 2005000696) and Massey University Human Ethics Committee (Wellington: No. 05/71).

Study 3 was approved by the University of Queensland Behavioural and Social Sciences Ethical Review Committee (No. 2013000721). Gatekeeper approval was sought from the General Manager of the sampled RAC facility. Prior to the interviews, informed consent was sought from each participant, both verbally and through written documents. The participants were informed about the following topics: (1) the purpose and procedures of the interview and how the interview data would be safeguarded; (2) the interview would be audio recorded; (3) the interview would take less than 60 minutes; (4) the participation was completely voluntary, which meant participants could decline participation and withdraw at any time during the interview without any penalty; and (5) the interview data would be treated in confidence. The personal identifiable information of participants was removed from transcribed files. Publications that use the interview data will not include the personal information of participants. To respect participants' privacy and encourage free talk, participants were able to contact the researcher directly to express interest in participation and to select the venue for an interview. The confidentiality of the information was protected at all times.

4.5. Summary

The current research followed a sequential mixed methods design, with two quantitative studies and one qualitative complementary study. Each study explored different domains of the problem, and findings from earlier studies informed the development of methods for the later studies (Collins & O'Cathain, 2009; Greene, Caracelli, & Graham, 1989). Two quantitative studies (Study 1 and Study 2) were conducted to address Aim 1, testing predictive models of turnover of residential aged care nurses in Australia. Findings from Study 1 helped to identify areas requiring further exploration. Study 2 was conducted to closely explore predictors of turnover of RAC nurses. The quantitative results informed the development of an interview guide and conceptualization of the purposive sampling strategy for qualitative Study 3. This study addressed Aim 2, understanding

perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants. The quantitative and qualitative studies complemented and illuminated each other. The findings from one method enhanced and clarified those from the other methods (Greene et al., 1989). Finally, all data were integrated to interpret factors associated with employment outcomes of DCWs in Australian residential aged care. The rigour of the three studies enhanced confidence in the final results of the current mixed methods research.

The following Chapters Five, Six and Seven further delineate the detailed design and methods used in each empirical study, as well as findings from individual studies. The synthesized final results based on the three studies are explored in Chapter Eight.

Chapter Five: Testing Models for Predicting Turnover of Residential Aged Care Nurses (Study 1)

The current sequential mixed methods research comprises two quantitative studies and one qualitative study. This chapter presents Study 1, a quantitative study that sought to address Aim 1, testing predictive models of turnover of residential aged care (RAC) nurses in Australia. The sample, 239 RAC nurses, came from the Nurses and Midwives e-cohort Study (NMeS: Turner et al., 2009). Using this sample, Study 1 tested two theoretical frameworks of turnover derived from the Job Demand-Control-Support model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990) with structural equation modelling.

Study 1 has been published in the International Journal of Nursing Studies (Gao, Newcombe, Tilse, Wilson, & Tuckett, 2014). The published paper can be accessed from http://www.sciencedirect.com/science/article/pii/S0020748914000182. The accepted author manuscript is formatted according to the University of Queensland requirements for "Including Publications in the Thesis" (University of Queensland, 2016). This chapter incorporates this accepted author manuscript. As the entire manuscript is inserted, there is some repetition of information from previous chapters. Sections 5.1, 5.2 and 5.3 primarily summarise the arguments made and frameworks presented in Chapters One to Four. The remaining sections focus on expanding the methods and detailing the analysis and results of Study 1.

5.1.   Introduction

Turnover of nurses in the residential aged care (RAC) industry is a pressing issue in many developed countries (Colombo et al., 2011). High turnover rates of nurses are associated with low quality of care (Castle & Engberg, 2005), poor wellbeing of nurses, and increased costs in staff recruitment and training (Hayes et al., 2006). Researchers have shown ongoing interest in exploring antecedents of RAC nurse turnover, given the detrimental effects of turnover, increasing demands for RAC nurses as a result of population ageing, and an attendant shortage in this health care workforce. In an investigation of personnel turnover, the impacts of job demands, coping resources, and psychological health have been of primary interest. However, it is unclear whether job demands and coping resources are directly associated with turnover or are indirectly linked through psychological health, and whether job demands predict different outcomes than do coping resources.

The purpose of this study was to shed light on these ongoing inquiries by testing the structural relationships between job demands, coping resources, psychological health and turnover of RAC nurses. Although this study was conducted using an Australian sample, it may provide useful insights into this phenomenon for other developed countries, where RAC nurses share commonalities in terms of job demands, coping resources, psychological health and turnover (Chenoweth et al., 2010). Additionally, due to the difficulties in collecting employee turnover data over time, many previous studies operationalized turnover as intention to leave or measured both turnover and its predictors at a static point in time (Mor Barak et al., 2001). The present study investigated actual turnover by following up with the same individuals over time, and provided more accurate predictive models of turnover behaviour (Hayes et al., 2006). A better understanding of these structural relationships will have significant implications for RAC service providers by assisting to develop tailored strategies to reduce turnover and improve nurses' psychological health. Policy makers could use this understanding to enhance retention and hence improve care standards.

5.2. Background

5.2.1 Australian RAC system and RAC nurse turnover

The Australian RAC system provides care for older people who are assessed as having care needs that cannot be met at home. Service providers include not-for-profit, for-profit and government organizations. RAC is funded by a mix of Australian government contributions linked to the care needs and means-tested user contributions (Department of Health and Ageing, 2012). Operating under the Aged Care Act 1997, the Australian government regulates entry to residential care through national assessment teams, sets policy and the required standards of care, and monitors compliance of providers through a standards agency and a system of inspection (Department of Health and Ageing, 2009).

The demand for aged care workforce in Australia is projected to approximately triple by 2050, as a result of population ageing and expected decline in the availability of informal caregivers (i.e. family, friends and neighbors) (Colombo et al., 2011). The last decade has seen a 23% increase in the total number of permanent residents in Australian RAC, with residents aged 85 years and older providing 89% of the total increase (Australian Institute of Health and Welfare, 2011), indicating a rapid rise in residents' dependency level and increasing complexity of the care needed. The Productivity Commission (2011), an independent research and advisory authority for the Australian Government, recently identified that a key challenge faced by RAC over the next 40

years is building an adequate workforce, including a considerable expansion of RAC nurses, in order to meet increasing service demands.

The RAC direct care workforce mainly comprises nurses and nursing assistants. Registered nurses play a key role in RAC, generally assuming professional leadership in care, and management of facilities, including preparing documentation for accountability to the Australian government. The escalating complexity of care highlights the need for quality nursing leadership and management in RAC.

However, attraction, retention and turnover of nurses are ongoing concerns for many RAC service providers. The aged care sector is reportedly seen as relatively unattractive for a range of reasons: stressful working environment, poor career path, inadequate professional development opportunities and training, relatively low remuneration, heavy workload, and devaluing of care work (Productivity Commission, 2011). About 20% of RAC nurses remained in their facilities for less than 12 months in 2007 (Martin & King, 2008), compared with 18.6% in other Australian health care and social assistance sectors (Australian Bureau of Statistics, 2008). A further problem is that attracting nurses is increasingly difficult as a result of overall shortage of health care workforce (Productivity Commission, 2011).

Undesirable turnover, attraction and retention of nurses may cause an inadequate staff-to-resident ratio, and subsequently lead to low quality of care and poor staff wellbeing (Collier & Harrington, 2008; Kash et al., 2006; Spilsbury et al., 2011). Additionally, high turnover results in frequent recruitment and training, which are likely to occupy already limited care resources (Castle, 2008a). Given that quality of care and costs are major concerns of service providers, funders, residents and residents' families (Schnelle, 2004), it is important to identify antecedents of RAC nurse turnover in Australia.

Surprisingly, compared with considerable amount of American research on nurse turnover in residential care, there is little evidence from Australia. To address the recent call from the Productivity Commission (2011) to identify ways to reduce turnover of RAC nurses, it is even more important than ever to extend our knowledge of this phenomenon to Australia where aged care policies and service delivery differ from America in many aspects. There is a need to understand how the factors that are amendable to change in current aged care policy, regulation and funding and in organizational procedures (e.g. job demands, coping resources, and psychological health of nurses) impact on turnover.

5.2.2. Job demands, coping resources and psychological health of RAC nurses

Job demands mainly refer to psychological demands and physical effort (Karasek et al., 1998). Widely reported job demands in RAC are heavy workloads, time pressures, violence against nurses, and emotional stress when responding to residents' and families' suffering and coping with death and dying (Cherry et al., 2007; Hasson & Arnetz, 2008). Additionally, the Australian RAC industry is constrained by several competing factors which increase job demands on nurses. About 70% of RAC residents are currently physically and mentally frail, and require a wide range of individualized care provided by sufficient staff with a relevant skill mix (Australian Institute of Health and Welfare, 2011). However, current aged care policies were developed when RAC services had a lower proportion of high-dependency residents. Arguably, there has been little attention to the staffing level and skilled nursing needed to provide care to the current population of aged care residents (Productivity Commission, 2011). Furthermore, the strictly regulated care costs and care standards limit the capacities of care models to respond to complex individual needs, set higher expectations for skill nursing care (Department of Health and Ageing, 2012), and constrain service providers' abilities to minimise job demands for their nurses. This situation is worsening as the Government attempts to reduce funding for RAC personnel (Productivity Commission, 2011). Clearly, in Australia, RAC nurses are at risk of excessive job demands as a result of high level of expectations for nurses and inadequate funding and resources to respond appropriately to the needs of the current population of residents.

Coping resources in the literature commonly relate to job control and work-related social support (Johnson & Hall, 1988; Karasek, 1979). Job control refers to the ability to make decisions and the possibility of skill utilization and skill development (Karasek et al., 1998). Work-related social support reflects the socio-emotional supports from both co-workers and supervisors and the effectiveness of interaction with co-workers (Johnson & Hall, 1988; Karasek et al., 1998). In terms of job control, Australian RAC nurses experience a lack of decision-making power and limited training and professional development opportunities (Productivity Commission, 2011). Conversely, nurses also acknowledge a number of rewarding features of care work which increases their sense of job control, for example, flexibility in working hours, long-term relationship with residents, and a sense of helping others (Chenoweth et al., 2010). With respect to work-related social support, supervisor support and co-worker support have been reported as important factors that are associated with nurses' job satisfaction in nursing homes (Choi, Flynn, & Aiken, 2012). In an Australian national survey of aged care workers, most RAC nurses were satisfied with support from supervisors and co-workers (Martin & King, 2008).

RAC nurses are vulnerable to psychological strain (Edvardsson et al., 2009). A number of studies have shown that RAC nurses experience psychological strain as evidenced by a lack of mental energy, work-related exhaustion, emotional distress, and depersonalization (e.g. Hasson & Arnetz, 2008).

To summarize, it appears that Australian RAC nurses are at risk of excessive job demands (e.g. Cherry et al., 2007) and poor psychological health (e.g. Hasson & Arnetz, 2008). However, it should be noted that these nurses also potentially enjoy some rewarding features of care work relating to the intrinsic rewards of caring (e.g.Price et al., 2004) and express a high level of job satisfaction with work-related support (e.g.Martin, 2007).

5.3.   Theoretical underpinnings and empirical evidence

5.3.1. *Job Demand-Control-Support (JDCS) model*

The JDCS model (Johnson & Hall, 1988; Karasek, 1979) has been widely used, implicitly or explicitly, in turnover research. About 30 years after it was first constructed, the model is still applicable in today's context (see Häusser et al., 2010 for a review). The JDCS model argues that the presence of job demands and the absence of job control and support (i.e. coping resources) may increase the risk of psychological problems (e.g. mental strains); meanwhile, a higher level of coping resources tend to reduce perceived job demands (Johnson & Hall, 1988; Karasek, 1979).

5.3.2. *Empirical evidence*

Some turnover studies applying the JDCS model assumed that turnover or turnover intention was a type of psychological outcome (e.g.Chiu et al., 2009; Widerszal-Bazyl et al., 2008). However, this assumption is not widely supported by empirical evidence. Studies conducted in a variety of employment sectors have found that high job demands may not necessarily pose negative impacts on turnover (see Podsakoff, LePine, & LePine, 2007 for a meta-analyses). It is not surprising that evidence from the aged care sector has also provided mixed findings on this phenomenon. For instance, a study of 115 US and 260 Dutch nurses and nurse assistants working in nursing homes observed that, for both samples, higher emotional exhaustion was directly associated with higher psychological job demands and lower social support, and job satisfaction was directly related to higher job control and social support; however, the negative direct relationship between psychological demands and job satisfaction was only found in the Dutch sample (Janssen et al.,

2004). One of the few Australian quantitative studies on turnover intention of aged care staff, a survey of 208 aged care employees, including nurses, personal carers and allied health professionals and managers, found that neither work stressors (i.e. job demands) nor supervisor support had significant direct effects on turnover intention, although both factors had significant indirect effects on turnover intention (Karantzas et al., 2012). A possible explanation of the above inconsistency is that job demands and coping resources predict psychological dysfunction rather than job attitudes and behaviours (e.g. turnover and job satisfaction); and turnover may be a secondary outcome of job demands and coping resources (Beehr et al., 2001).

Furthermore, another body of research conducted in other work settings has focused on whether job demands and coping resources predicted different outcomes. For instance, a study of 477 Dutch call centre employees observed that turnover intentions were mostly explained by coping resources through a motivational process, while health outcomes were mainly predicted by job demands via a health impairment process (Bakker et al., 2003). In contrast, a survey of 145 American rehabilitation counsellors found that higher stressors (i.e. job demands) predicted turnover intention, and both higher stressors and lower coping resources were related to psychological strain (Layne et al., 2004). Arguably, the underlying mechanism of how job demands and coping resources connect to psychological health and turnover remains unclear.

5.3.3. Proposed theoretical models

To shed light on this mechanism, it may be useful to examine the above theoretical explanations using the same sample and explore which model better explains the observed data on nurse turnover in RAC. Therefore, the current study tested two theoretical models, using the same sample of Australian RAC nurses. The first model (Model A) was a replication of previous studies which used the JDCS model to predict turnover (e.g.Chiu et al., 2009; Widerszal-Bazyl et al., 2008) (see Figure 5.1). Adapted from Layne and associates (2004), the second model (Model B) hypothesized that job demands and coping resources pose both direct and indirect effects through psychological health on turnover (see Figure 5.2). As mentioned above, Layne and associates' (2004) model has been tested using a sample of 145 American rehabilitation counsellors. Moving beyond testing the model only with observed variables as Layne and associates (2004) did, the current study introduced latent constructs of job demands, coping resources, and psychological health. An advantage of using latent constructs is to increase the predictive power of the full model "by specifying a measurement model for each construct and separating measurement error from the true score" (Cheong & Mackinnon, 2011, p. 419). Additionally, in contrast to Layne and associates (2004) who assessed all variables at a fixed point in time, this study measured the criterion variable,

Turnover, after the occurrence of predictor variables, which provided valuable insights into directional effects (Kline, 2011).
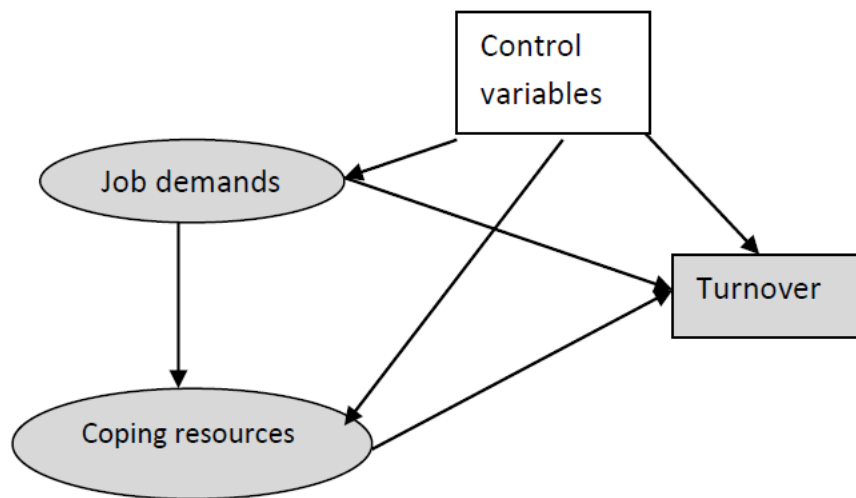
Figure 5.1. Hypothesized model A
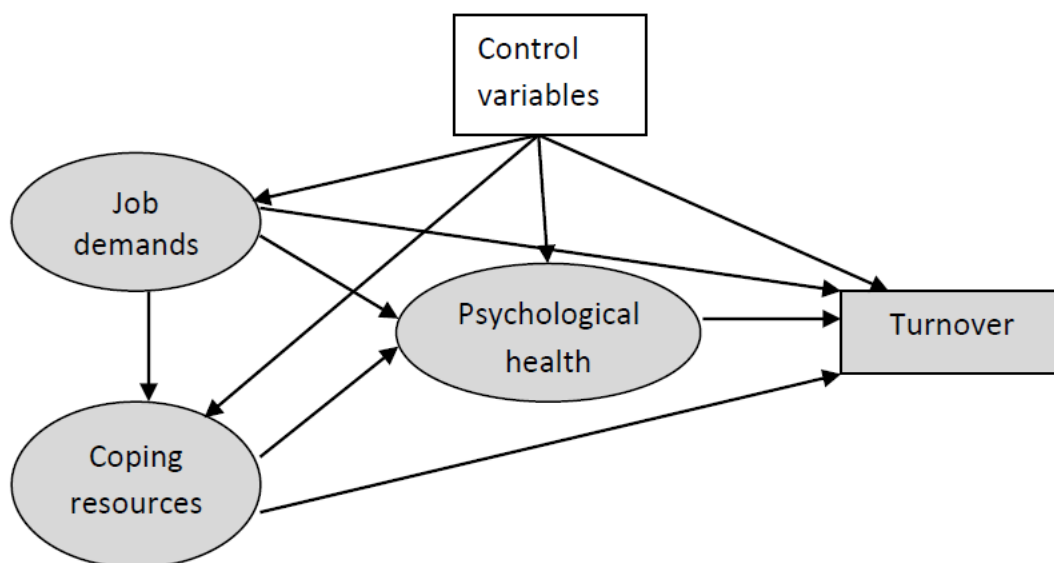
Figure 5.2. Hypothesized model B (adapted from Layne et.al (2004))

In line with existing literature (e.g. Chenoweth et al., 2010; Hayes et al., 2006; Mor Barak et al., 2001), this research controlled for the following individual and workforce characteristics that have been identified as associated with turnover, job demands, coping resources, and psychological health: age, education, remuneration, facility ownership, working hours, whether doing shift work,

currently undertaking studies, and size of work group. That is, the influences of these control variables were simultaneously measured in the four structural equations of Turnover, Job Demands, Coping Resources, and Psychological Health (see Figures 5.1 and 5.2).

In summary, this study attempted to test two predictive models of Australian aged care nurse turnover, with a focus on three sets of hypotheses. First, following previous research (e.g.Chiu et al., 2009; Widerszal-Bazyl et al., 2008), it was hypothesized that coping resources and job demands would be significantly and directly associated with turnover. In addition, in line with the JDCS model, it was proposed that job demands would be significantly and negatively associated with coping resources and that higher coping resources and lower job demands would be significantly and directly associated with better psychological health. Moreover, it was hypothesized that coping resources would mediate the relationship between job demands and psychological health, psychological health would mediate the association between coping resources and turnover, and both coping resources and psychological health would mediate the association between job demands and turnover.

5.4. Methods

5.4.1. *Data source and sample*

This study used survey data from the Nurses and Midwives e-cohort Study (NMeS: Turner et al., 2009). The NMeS investigated issues related to work life balance and health among nurses and midwives from a variety of health care settings, including RAC sector, in Australia, New Zealand, and the United Kingdom, using three-wave panel surveys (Turner et al., 2009). The surveys were posted on line (http://nurses.e-cohort.net/), along with participant information and informed consent, and were publicized among nurses through a range of media, such as personalized emails, mails, and advertisements on mass newsletters and publications. Reminders were sent to those who did not respond through personalised emails and mails, and via telephone. To facilitate participation, a welcome message, birthday card, and quarterly newsletters, were emailed to each nurse registered with the NMeS. The baseline data was gathered between April 1st, 2006 and March 31st, 2008, and the Survey 2 was conducted between August 30th, 2008 and September 26th, 2009. The baseline survey response rate was low (2.3%) (Schluter et al., 2012). However, based on a comparison of demographics and workplace features between the NMeS baseline participants and the general nursing workforce, Schluter and colleagues (2011) concluded that the NMeS respondents were a representative sample of the nursing workforce in the three countries. This supports that it is possible to generalize study findings derived from the NMeS data

to a wider Australian nursing workforce (Bogossian et al., 2012), including RAC nursing workforce. For a full description of the data collection procedure and representativeness of the sample, please refer to Turner et.al (2009) and Schluter, et al (2011).

There were 6505 Australian nurses, midwives, and undergraduate nursing students registered for the study. Of these, 5579 completed baseline survey. For this study, 254 Australian nurses who reported working in RAC at baseline were chosen for analysis. Four individuals who reported retiring at the time of Survey 2, and 11 cases with extreme scores across the predictors were eliminated from subsequent analyses, leading to a baseline sample size of 239.

5.4.2. *Measures and instruments*

5.4.2.1. Turnover

There were no direct measures of Turnover in the NMeS data set. Turnover was operationalized by comparing whether baseline RAC nurses had left RAC nursing profession at Survey 2, resulting in a dichotomous criterion variable (leaving=1 and staying= 0).

5.4.2.2. Job Demands and Coping Resources

Following previous research (e.g. Fillion et al., 2007), Job Demands and Coping Resources were measured with the Job Content Questionnaire (JCQ: Karasek et al., 1998) and the Effort Reward Imbalance questionnaire (ERI: Siegrist, 1996).

The JCQ consists of 18 items, with 4-point Likert-type scales from "strongly disagree" to "strongly agree". These items measured occupational stress in five domains: (a) Job Control, including two subscales, skill discretion (6 items; e.g. "my job requires that I learn new things") and decision authority (3 items; e.g. "my job allows me to make a lot of decisions on my own") ; (b) Psychological Demands (3 reverse-coded items; e.g. "I have enough time to get the job done"); (c) Physical Demands (2 items; e.g. "my job requires lots of physical effort"); (d) Co-worker Support (2 items; e.g. "people I work with take personal interest in me"); and (e) Supervisor Support (2 items; e.g. "my supervisor pays attention to what I am saying").

In terms of the ERI, the Effort domain contained six items (i.e. time pressure, interruptions and disturbances, responsibility, working overtime, physical demands, and increasing demands), while the Rewards domain included 11 items (e.g. salary, respect, promotion, job security, and support). Participants responded to these items in two steps. If they agreed with the statements in

the first step, they were asked to assess the level of stress on 4-point Likert-type scales from "I am not at all stressed" to "I am very stressed".

The sub-dimensions of JCQ and ERI have been found to be distinct measures of psychosocial factors in the workplace (Sembajwe et al., 2012). Additionally, previous research revealed that using a combination of both JCQ and ERI may increase the predictive power of psychosocial factors on health related outcomes (e.g. Fillion et al., 2007).Therefore, in the hypothesized model, the latent variable of Job Demands was indicated by two JCQ subscales (Psychological Demands and Physical Demands) and one ERI domain (Effort), with higher scores indicating higher level of job demands. Coping Resources were indicated by three JCQ subscales (Job Control, Supervisor Support, and Co-worker Support) and one ERI domain (Rewards), with higher scores indicating greater coping resources. Given that Rewards had substantial missing data and was found to be a less reliable measure of coping resource as indicated by its low correlation with other indicators ($R^2=0.10$), this variable was dropped from subsequent analysis.

5.4.2.3. Psychological Health

The latent construct, Psychological Health, was indicated by the psychological health domains of SF-36 (Ware, 2000), including Vitality (4 items; e.g. "did you feel tired"), Social Functioning (2 items; e.g. "during the past four weeks, how much of the time has your physical health or emotional problems interfered with your social activities"), Role Emotional (3 items; e.g. "accomplished less than you would like"), and Mental Health (5 items; e.g. "have you been very nervous"), with a higher score indicating better psychological health. The decision to use this subset of SF-36 scales was based on previous research showing that these scales are significant and positive indicators of mental component summary score (Ware, 2000). The individual items of each domain were responded to on a 5-point Likert-type scale responses either from "all of the time" to "none of the time", or from "not at all" to "extremely". Following Ware (2000), all raw domain scores were converted to a 0 (worst psychological health) to 100 (best psychological health) scale[5]. To adjust for skewness of distribution, reversed reciprocal squared root transformation was applied to Mental Health, and reversed reciprocal log transformation was applied to Role Emotional and Social Functioning.

Cronbach's alpha coefficients for the domains of JCQ, ERI, and SF-36 used to indicate Job Demands, Coping Resources, and Psychological Health, ranged from .72 to .89 (see Table 5.1),

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[5] Converted scale scores=[(raw scale score-minimum raw scale score)*100]/ [(maximum raw scale score-minimum raw scale score].

suggesting acceptable to good internal consistency of these composite scales. A description of all items in each subscale was presented in Table 5.2.

Table 5.1. Means, standard deviations, internal consistencies *(diagonal shows Cronbach's alpha)* and correlations among observed variables of latent constructs [ab] (N=239)

	1	2	3	4	5	6	7	8	9	10
Job Demands										
1.physical	.82									
2.psychological	.17**	.73								
3.effort	.27***	.58***	.83							
Coping Resources										
4.control	-.32***	-.01	-.05	.81						
5.coworker support	-.09	-.19**	-.22**	.38***	.72					
6.supervisor support	-.16*	-.18**	-.22**	.56***	.50***	.89				
Psychological health										
7.mental health[c]	-.06	-.15*	-.28***	.23***	.17*	.22***	.84			
8.role emotional[d]	-.03	-.19**	-.21**	.16*	.11	.11	.59***	.87		
9.social functioning[e]	-.07	-.10	-.17**	.19*	.05	.13	.51***	.43***	.79	
10.vitality	-.10	-.17**	-.28***	.25***	.09	.17*	.64***	.48***	.47***	.85
Original mean	4.96	16.85	16.30	72.08	5.93	6.03	70.70	80.98	83.50	49.89
(SD)	(1.57)	(3.68)	(4.99)	(11.00)	(1.01)	(1.44)	(17.31)	(23.90)	(22.86)	(19.16)
Original scale range[f]	2-8	6-24	6-30	24-96	2-8	2-8	0-100	0-100	0-100	0-100
Transformed mean							-5.27	-1.86	-1.68	
(SD)							(1.59)	(1.75)	(1.73)	

Notes: a. *p<.05, **p<.01, ***p<.001.
b. For the indicators of job demands and coping resources, higher scores indicated higher level of demands or resources. For the indicators of psychological health, higher scores represented better psychological health.
c. transformed mental health (MH)=-sqrt(101-MH).
d. transformed role emotional (RE)=-log(101-RE).
e. transformed social functioning (SF) =-log(101-SF).
f. scale range based on non-transformed data.

Table 5.2: Items of JCQ, ERI, and SF-36 used to indicate Job Demands, Coping Resources, and Psychological Health

Indicators of latent construct	Item text
Job Demands	
JCQ subscales	
Physical Demands	My job requires lots of physical effort.
	My work requires rapid and continuous physical activity.
Psychological Demands	I am not asked to do an excessive amount of work.
	I have enough time to get the job done.
	I am free from conflicting demands that others make.
ERI subscale	
Effort	I have constant time pressure due to a heavy work load.
	I have many interruptions and disturbances in my job.
	I have a lot of responsibility in my job.
	I am often pressured to work overtime.
	My job is physically demanding.
	Over the past few years, my job has become more and more demanding.
Coping Resources	
JCQ subscales	
Job Control	My job requires that I learn new things.
	My job involves a lot of repetitive work.
	My job requires me to be creative.
	My job requires a high level of skill.
	I get to do a variety of different things on my job.
	I have an opportunity to develop my own special abilities/skills.
	My job allows me to make a lot of decisions on my own.
	On my job, I have very little freedom to decide how to do my work.
	I have a lot of say about what happens on my job.
Supervisor Support	My supervisor is concerned about the welfare of those under him/her.
	My supervisor pays attention to what I am saying
Co-worker Support	People I work with take personal interest in me.
	People I work with are helpful in getting the job done.
Psychological Health	
Psychological health domains of SF-36	
Vitality	Did you feel full of life?
	Did you have a lot of energy?
	Did you feel worn out?
	Did you feel tired?
Social Functioning	During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

	During the past four weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc)?
Role Emotional	Cut down on the amount of time you spent on work or other activities.
	Accomplished less than you would like.
	Did work or other activities less carefully than usual.
Mental Health	Have you been very nervous?
	Have you felt so down in the dumps that nothing could cheer you up?
	Have you felt calm and peaceful?
	Have you felt down-hearted and depressed?
	Have you been happy?

5.4.3. Control variables

These included three continuous variables - Age, Annual Salary, and Average Working Hours Per Week; four dichotomous variables- Currently Undertaking Study (Yes=1/No=0), Highest Qualification (Tertiary-based certificate and higher education=1/ Otherwise=0), Doing Shift Work (Yes=1/No=0), and Size of Work Group (More than 10 people=1/Otherwise=0); and a nominal variable - Facility Ownership (Government, For-profit, and Not-for-profit; dummy coded as Government vs. For-profit, and Not-for-profit vs. For-profit).

5.4.4. Missing data

Missing data resulted from sample attrition in the follow-up surveys and non-responses to some questions. Some data points were recovered by examining related questions. For example, for those respondents with unknown work setting at Survey 2, the following questions were used to identify whether they left or stayed in RAC nursing profession: "are you currently employed", "why are you working outside of nursing", "are you currently seeking work", "reasons not in labour force", and "reasons for not working in nursing". Consequently, the number of missing values for the outcome variable, Turnover, reduced from 56 to 40, accounting for 16.7% of the sample. In terms of the standardized instrument domain scores, less than 8% of the observations had missing values, with the exception of the Rewards subscale, where 72.4% of the data was missing. As mentioned above, the Rewards subscale was subsequently removed from analysis. With regards to control variables, 0-35.6% of observations had missing information.

Multiple imputation by chained equations (MICE: Azur et al., 2011) was used to handle missing data. MICE fits a sequence of regression models according to type of variables and is

reported to be suitable to impute missing data that involves both continuous and categorical variables (Azur et al., 2011). To yield less biased estimates and confidence intervals, methodologists recommend that imputation should include auxiliary variables that are likely to be associated with missingness (Schafer, 2003). Based on results from the Missing Value Analysis Module using SPSS 20 (IBM Corporation, 2011) and taking into account theoretical justifications and sample size, the following variables were selected as auxiliary variables to be included in the imputation model: General Health, Physical Functioning, Bodily Pain, and Role Physical. IVEware0.2 package for SAS software (Raghunathan, Lepkowski, & Hoewyk, 2001) based on MICE was used to generate five implicates.

5.4.5. Statistical analysis

The hypothesized models were tested using structural equation modeling (SEM), with Mplus 7 statistical software (Muthén & Muthén, 2012). Following Anderson and Gerbing (1988), a two-step analytic approach was employed by first estimating measurement models using confirmatory factor analysis and then testing structural models. The measurement models were assessed with the maximum likelihood (ML) estimator. Given that the outcome variable Turnover is a binary variable, the structural models were tested with the estimator of weighted least squares means and variance adjusted (WLSMV: Muthén, 1993; Muthén, du Toit, & Spisic, 1997). Identical statistical analyses were performed on the five imputed data sets. Results were then combined to yield goodness-of-fit indices, parameter estimates, and standard errors (Rubin, 2009). The fit of model was assessed against the cut-off criteria for fit indices proposed by Hu and Bentler (1999) where a model is considered as a close fit of the data when the Root Mean Square Error of Approximation (RMSEA)$\leq$.06, both the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI)$\geq$.95, the Standardized Root Mean Square Residual (SRMR)$\leq$.08, and the Weighted Root Mean Square Residual (WRMR)$\leq$.90.

To test mediation hypotheses, a bootstrap resampling procedure was employed. Traditionally, the most widely used approach in mediation analyses is the causal step approach proposed by Baron and Kenny (1986). Despite its popularity, methodologists argue that a causal step approach is not suitable for small and medium samples, where the normality assumption of sampling distribution of indirect effects (i.e. the product term a×b) might be potentially violated (Hayes, 2009). In contrast, as a nonparametric resampling procedure, the bootstrapping method can accommodate non-normality of sampling distribution (Preacher & Hayes, 2008). Additionally, previous simulation studies (e.g. MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004) have found that bootstrapping demonstrates stronger

power and lower Type I error rate than the causal step approach. This research followed the bootstrap resampling procedure indicated in Preacher and Hayes (2008), that is, using random sample with placement, 1,000 bootstrap samples (i.e. 200 samples for each implicates) was randomly generated from the original sample of 239 cases; then, indirect effects were calculated for each bootstrap sample and results were rolled up to yield standard errors for parameter estimates of indirect effects.

5.5. Results

5.5.1. *Sample characteristics and descriptive information*

At baseline, the study sample comprised 239 participants (92.05% females) who fit the inclusion criteria. Of those nurses who initially indicated that they worked in RAC facilities, 40.67% had left RAC nursing profession at Survey 2. The age of the respondents ranged from 22 to 66 (median= 49 years, IQR=42-55 years). On average, they worked 33.02 hours per week (SD= 11.56 hours) and earned 47,054.98 AUD (SD=19,140.47 AUD). About two thirds (68.62%) of the respondents had attained tertiary-based certificates and higher education. Most of the respondents worked for not-for-profit facilities (52.55%), were doing shift work (69.04%), were not currently undertaking studies (70.29%), and worked in a group with 10 or less people (57.99%).

Within each latent construct, the observed indicators were positively and significantly intercorrelated. As can be seen from Table 5.1, most of the indicators of Job Demands were negatively and significantly associated with Coping Resources indicators (six out of nine correlations) and Psychological Health indicators (seven out of 12 correlations). Most of Coping Resources indicators were positively and significantly associated with Psychological Health indicators (seven out of 12 correlations).

5.5.2. *Measurement models*

There were two latent variables (Job Demands and Coping Resources) in Model A, and three latent variables (Job Demands, Coping Resources, and Psychological Health) in Model B. Both measurement models were first order model. The original measurement models did not fit the data adequately (Model A: χ^2(8,N=239)=34.38, p<.001, RMSEA=.11 (90% low CI limit=.08 and 90% upper CI limit=.16), CFI=.91, TLI=.82, SRMR=.07; Model B: χ^2(32,N=239)=57.02, p=.0042, RMSEA=.06 (90% low CI limit=.03 and 90% upper CI limit=.08), CFI=.96, TLI=.94, SRMR=.05).

On the basis of modification indices and theoretical justifications, the error between Physical Demands and Job Control was set to be correlated. Both modified measurement models were then a close fit of the data, as indicated by their goodness-of-fit statistics (Model A: χ^2(7,N=239)=10.86, p=.15, RMSEA=.05 (90% low CI limit=.00 and 90% upper CI limit=.10), CFI=.99, TLI=.97, SRMR=.04; Model B: χ^2(31,N=239)=32.74, p=.38, RMSEA=.02 (90% low CI limit=.00 and 90% upper CI limit=.05), CFI=1.00, TLI=1.00, SRMR=.04). That is, the latent variables in both models were adequately measured by their indicators.

In both measurement models, the composite reliability for Job Demands was .68 and for Coping Resources was .74. In measurement model B, the composite reliability for Psychological Health was .82. A composite reliability value greater than .6 indicates desirable construct reliability (Diamantopoulos & Siguaw, 2000). Therefore, Physical Demands, Psychological Demands, and Effort provided reliable measurement of Job Demands; Job Control, Supervisor Support, and Co-worker Support offered reliable measurement of Coping Resources; and Vitality, Social Functioning, Role Emotional, and Mental Health provided reliable measurement of Psychological Health. In terms of validity, all path coefficients between each latent variable and its indicators were significant at a .001 level, suggesting that the indicators of each latent constructs, Job Demands, Coping Resources, and Psychological Health, were valid. To sum up, the operationalizations of all latent constructs in both measurement models showed satisfactory reliability and validity.

For the fitted measurement models, higher Job Demands were significantly associated with both lower Coping Resources (Model A: γ=-.29, p<.001; Model B: γ=-.27, p=.001) and poorer Psychological Health (Model B: γ=-.35, p<.001); and higher Coping Resources were significantly related to better Psychological Health (Model B: γ=.32, p<.001). Estimates and model fit indices for the measurement models appear in Table 5.3.

Table 5.3: Standardized estimates (unstandardized estimates in brackets) and model fit indices for the fitted measurement models (N=239)

	Model A		Model B	
Model fit indices				
df	7		31	
x^2	10.86		32.74	
p-value	.15		.38	
RMSEA	.05		.02	
CFI	.99		1.00	
IFI	.97		1.00	
SRMR	.04		.04	
	factor loading	R^2	factor loading	R^2
job demands				
Physical demands	.35 (1)***	.12**	.34 (1)***	.11*
Psychological demands	.66 (4.35)***	.43***	.62 (4.27)***	.38***
Effort	.88 (7.86)***	.77***	.93 (8.70)***	.87***
coping resources"				
Control	.63 (1)***	.40***	.65 (1)***	.43***
Supervisor support	.86 (.18)***	.74***	.83 (.17)***	.69***
Co-worker support	.59 (.09)***	.35***	.60 (.08)***	.36***
psychological health				
Vitality	-	-	.74 (1)***	.55***
Social functioning [a]	-	-	.61 (.07)***	.37***
Role emotional [b]	-	-	.68 (.08)***	.46***
Mental health [c]	-	-	.86 (.10)***	.74***
Modified path				
Physical demands correlated with job control	-.36 (-4.55)***	-	-.37 (-4.57)***	-

Notes: * p<.05, ** p<.01, ***p<.001

     a. transformed social functioning (SF) =-log(101-SF).

     b. transformed role emotional (RE)=-log(101-RE).

     c. transformed mental health (MH)=-sqrt(101-MH).

5.5.3. Structural models

The structural models integrated the measurement models and hypothesized paths specified in Figures 5.1 and 5.2. The initial structural models did not fit adequately to the data[6] (Model A: χ^2(47,N=239)=76.70, RMSEA=.05, CFI=.89, TLI=.81, WRMR=.71; Model B: χ^2(101,N=239)=133.07, RMSEA=.04, CFI=.92, TLI=.88, WRMR=.65). Based on modification

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[6] The measurement model used the ML estimator, while the structural model employed the WLSMV estimator. In Mplus 7, Chi-square p-values with multiple imputation are computed only for the ML estimator.

indices and theoretical justifications, a path from Shift Work to Physical Demands was added to both structural models, resulting in an improvement in overall model fit. As indicated by the fitted models' goodness-of-fit statistics (Model A: χ^2(46,N=239)=60.13, RMSEA=.04, CFI=.95, TLI=.91, WRMR=.61; Model B: χ^2(100,N=239)=114.19, RMSEA=.02, CFI=.97, TLI=.95, WRMR=.59), Model A showed an acceptable fit to the data, while Model B was a close fit to the observed data from the sample of Australian RAC nurses.

The first set of hypotheses was partially supported (see Figures 5.3 and 5.4). In both models, controlling for individual and workforce characteristics, Coping Resources demonstrated a significant direct negative relationship with Turnover (Model A: β=-.25, p=.03; Model B: β=-.25, p=.02), indicating that nurses with higher coping resources were less likely to leave. The direct association between Job Demands and Turnover was not statistically significant.

The second set of hypotheses was retained. Job Demands were significantly and negatively related to Coping Resources in both models (Model A: β=-.30, p<.001; Model B: β=-.31, p=.001), suggesting that nurses experiencing higher job demands tended to perceive their coping resources were poorer. In Model B, Psychological Health was significantly and negatively associated with Job Demands (β=-.29, p=.01), and was significantly and positively related to Coping Resources (β=.25, p=.02), indicating that nurses with lower job demands and higher coping resources were prone to self rate better psychological health.

The third set of hypotheses on mediation effects was rejected. The results of bootstrap standard errors indicated that none of the indirect effects specified in the hypothesized models was significant (Table 5.4). That is, this study did not find evidence to support the proposition that coping resources and psychological health act as mediators in the predictive models of RAC nurse turnover.

Additionally, Doing Shift Work was significantly and negatively associated with Turnover (*β* =-.22, *p*=.02), indicating that those doing shift work were more likely to stay. Doing Shift Work was significantly and positively correlated with Physical Demands in both models (*β* =.27, *p*=<0.001), suggesting that doing shift work was associated with increased physical demands.

Based on the above data, Model B fit the data well, while Model A showed an acceptable fit. This did not necessarily reject Model A. Instead, it suggested that the model including job demands, coping resources, and psychological health better explained the observed data on turnover of Australian RAC nurses, compared with the model excluding psychological health.
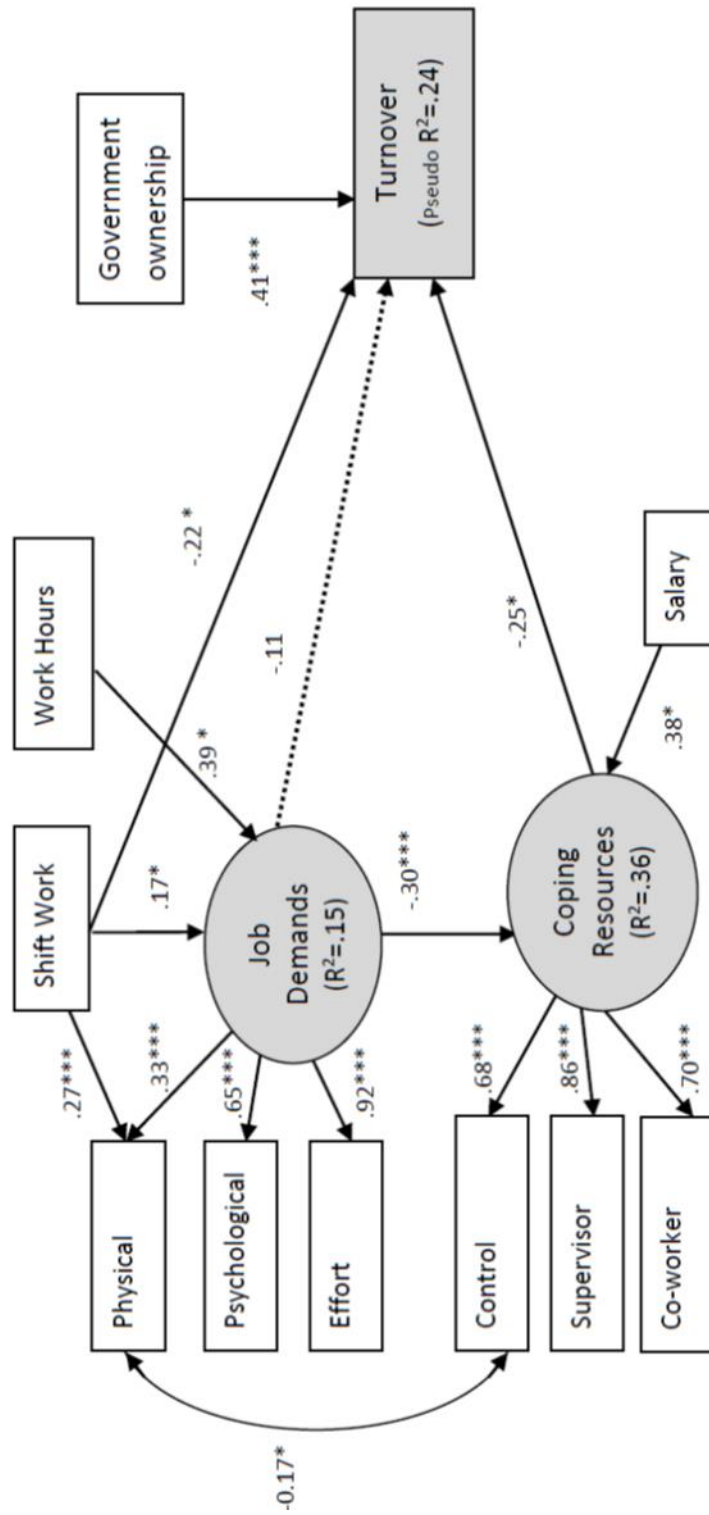
Figure 5.3. Final Model A with standardized path loadings
Notes: * p<.05, ** p<.01, ***p<.001
a. Solid line= path differing significantly from zero: dashed line= path not differing significantly from zero.
b. Only significant control variables (p<.05) are shown on this figure for parsimony. Details of individual unstandardized and standardized estimates can be requested from the first author.
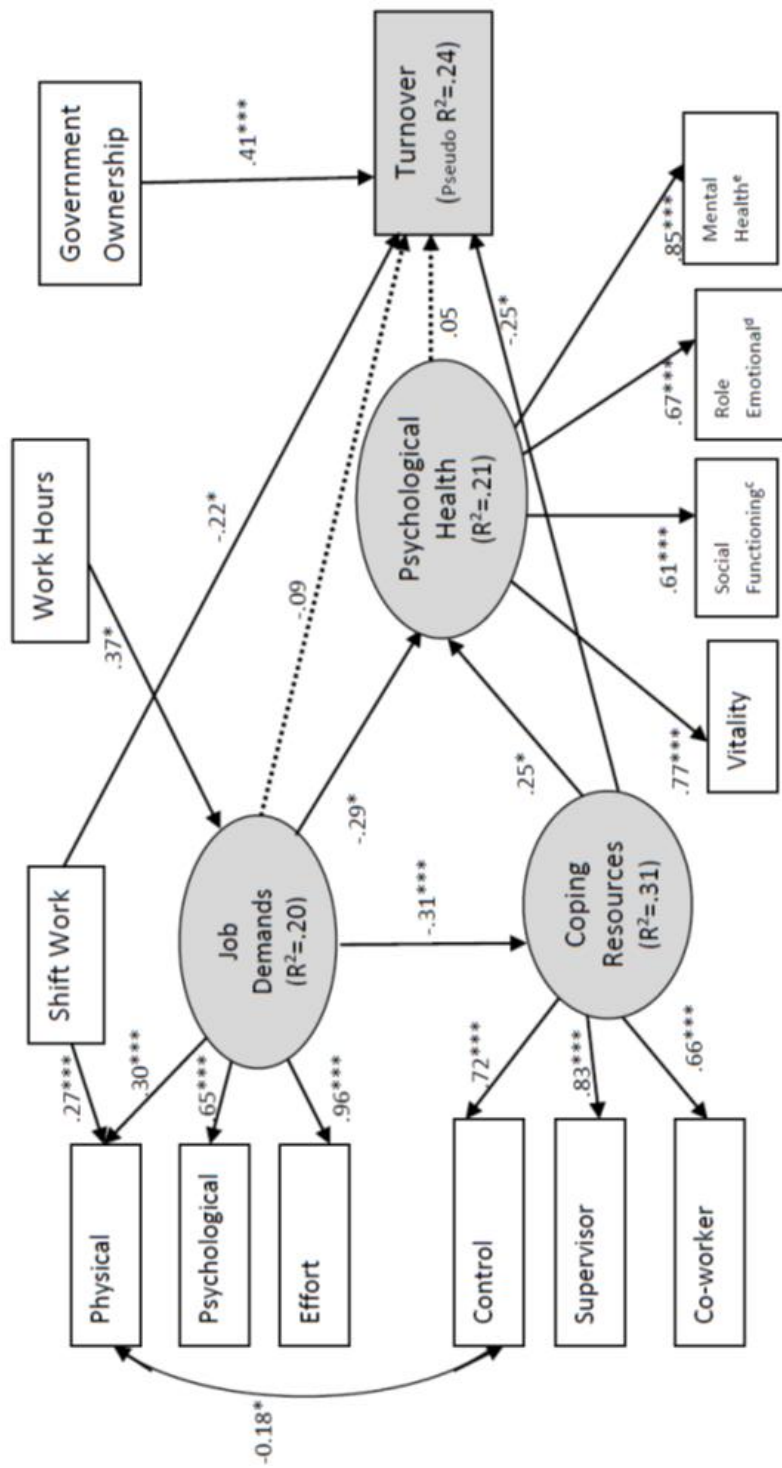c. A table of direct and indirect effects appears in Table 5.4.

Figure 5.4. Final Model B with standardized path loadings

Notes: * p<.05, ** p<.01, ***p<.001

a. Solid line= path differing significantly from zero; dashed line= path not differing significantly from zero.

b. Only significant control variables are shown on this figure for parsimony. Details of individual unstandardized and standardized estimates can be requested from the first author.

c. transformed social functioning (SF) =-log(101-SF).

d. transformed role emotional (RE)=-log(101-RE).

e. transformed mental health (MH)=-sqrt(101-MH).

f. A table of direct and indirect effects appears in Table 5.4.

Table 5.4: Standardized direct and indirect effects of the structural models (N=239)

	Model A	Model B
Job Demands → Turnover		
Direct effects	-.11	-.09
Indirect effects	.08	.06
Coping Resource→Turnover		
Direct effects	-.25*	-.25*
Indirect effects	-	.01
Psychological Health→Turnover		
Direct effects	-	.05
Job Demands → Coping Resource		
Direct effects	-.30***	-.31***
Job Demands → Psychological Health		
Direct effects	-	-.29*
Indirect effects	-	-.08
Coping Resource → Psychological Health		
Direct effects	-	.25*

Notes: * p<.05, ** p<.01, ***p<.001

5.6.   Discussion

This study has a number of strengths that improve confidence in the findings. The predictor variables were measured at baseline, while the criterion variable, Turnover, at a follow-up data collection. Directional causal effects can be inferred when predictor variables are assessed prior to criterion variables, and the associations are not spurious (Kline, 2011). Additionally, two theoretical models were tested in a single analysis. Latent constructs were used to indicate Job Demands, Coping Resources, and Psychological Health, which improved predictive power of the models (Cheong & Mackinnon, 2011). These strengths facilitate practical significance of the findings.

This study observed that lower coping resources were directly associated with turnover. This is in line with previous research that reported coping resources to be directly and positively related to job satisfaction (Fillion et al., 2007) and negatively associated with turnover intention (Bakker et al., 2003). Given that Coping Resources occurred before Turnover, the above finding indicated that lower coping resources might be one factor that leads to an increase in the risk of RAC nurse turnover.

Furthermore, findings from this study also supported the JDCS model that both higher job demands and lower coping resources were related to poorer psychological health, and higher job demands being related to lower coping resources. Given that Job Demands, Coping Resources, and Psychological Health used in this study were all concurrently measured at baseline, the relationships

between these variables could not be interpreted causally.

It was interesting to note that shift work increased the propensity to stay, although it was associated with higher physical demands. It is possible that shift work offers flexible work schedules for nurses and it is this flexibility that promotes their retention (McNall, Masuda, & Nicklin, 2010), despite the high physical demands.

Additionally, the direct association between Job Demands and Turnover was negative. Although this association was not significant, it requires commentary. Previous research has reported mixed findings regarding the relationship between job demands and employment outcomes. Based on their meta-analysis, Podsakoff and colleagues (2007) argued that there were two types of stressors (i.e. job demands) - challenge and hindrance stressors - that impacted employment outcomes differently. Challenge stressors tend to reduce turnover, while hindrance stressors are positively related to turnover. Podsakoff and colleagues (2007) operationalize challenge stressors as "job or role demands, pressure to complete tasks, time urgency, and quantitative and subjective workloads" and hindrance stressors as "situational constraints, hassles, organizational politics, resource inadequacies, role ambiguity, role conflict, and role overload" (p442). Based on these operationalizations, the construct of Job Demands measured in the current study may be considered as challenge stressors. Some RAC nurses may respond to challenge stressors well and thus tend to stay, even though the job demands may adversely affect their psychological health (McCauley, Ruderman, Ohlott, & Morrow, 1994). This may explain why psychological health was positively, but not significantly, associated with turnover. Future research should utilize instruments capable of measuring hindrance job demands in order to explore the impact of hindrance job demands on turnover.

This study has several limitations. First, the NMeS was not specially designed to study turnover of RAC nurses, which limited the availability of variables of interest. For example, additional questions should be asked about job demands, coping resources and psychological health specific to RAC nursing to improve the predictive power of the proposed models for this population (Fillion et al., 2007). Moreover, some other factors (e.g. alternative employment opportunities and inadequate staffing level) may also influence nurse turnover (Collier & Harrington, 2008; Mor Barak et al., 2001). We were unable to conduct analyses on these factors due to the limitations of data set. Nevertheless, given that the findings of this study derived from more comprehensive models than some of the previous work, this study did provide useful information for the RAC nurse turnover research. Second, Psychological Health indicators used in this study were measured at baseline, which limited causal inferences of its relationships with Job Demands and Coping Resources. An outcome variable is acceptable for data imputation when its missing values are less than 20% (Little & Rubin, 2002). Given that some indicators of Psychological Health at follow-up

data collections had more than 20% of observations with missing values, it was impossible to use the assessments of these indicators at the follow-up surveys. Third, a larger sample needs to be collected in order to detect smaller effect sizes. A rule of thumb for reasonable sample size is 10 cases per free parameter (Nunnally, 1967). However, in SEM analysis, when latent variables are measured by a number of indicators with large factor loadings, even five cases per free parameter would be appropriate (Bentler & Chou, 1987). Therefore, the present study did provide important insights into how job demands and coping resources link to turnover of RAC nurses. Fourth, it is unclear how the meanings of job demands and coping resources affect psychological health and turnover. A qualitative study should be conducted to explore further the mechanism of such associations.

5.7.   Conclusions

This study has made three important contributions to the RAC nurse turnover literature. First, moving beyond previous research that examined only one theoretical perspective, this study tested two theoretical models using the same sample, and supported that turnover may be a direct outcome of inadequate coping resources, and that adverse psychological health may be a consequence of both high job demands and low coping resources. Second, the present study examined actual turnover rather than turnover intentions, and measured it after the occurrence of its predictor variables, which improved upon some of previous work. Third, as the issues of job demands, coping resources, psychological health and turnover of RAC nurses in many developed counties have some similarities (Chenoweth et al., 2010), findings from this Australian study may provide noteworthy practical and policy implications for other developed countries.

In conclusion, this study addressed the call of Australian Productivity Commission to identify ways to reduce turnover of RAC nurses (Productivity Commission, 2011), and pointed towards the policy and practice implications of RAC job design. In order to reduce turnover and improve nurses' psychological health, aged care policy, regulation, funding and organizational procedures might better focus on optimal job demands and sufficient coping resources. To optimize job demands, aged care policy makers could develop appropriate care models in response to complex needs of current aged care residents, and acknowledge adequate staffing levels with skill mix. The design of work processes might consider increasing coping resources by improving nurses' job control (i.e. decision-making power, professional development opportunities, and career path), by providing adequate supervisor support, and by facilitating co-worker interaction. Such initiatives will be challenging to introduce given concerns about financing the sector to meet the needs of an increasing frail group of older people entering residential aged care in Australia. This

challenge, however, has to be met to reduce nurse turnover and thus potentially improve the quality of care.[7]

5.8.   Summary

Study 1 tested two theoretical models of turnover to examine the structural relationships between Job Demands, Coping Resources, Psychological Health and Turnover of RAC nurses. The sample, 239 Australian RAC nurses, came from the NMeS data set. Structural equation modeling was used to test the measurement and structural models. It was found that controlling for a number of workforce and individual characteristics, Coping Resources (measured by Job Control, Supervisor Support, and Co-Worker Support) were negatively and directly associated with Turnover. Additionally, the findings supported the Job Demand-Control-Support model in that higher Coping Resources and lower Job Demands (indicated by Psychological Demands, Physical Demands, and Effort) were related to better Psychological Health (measured by Vitality, Social Functioning, Role Emotional, and Mental Health), and higher Job Demands were related to lower Coping Resources.

An unexpected finding from Study 1 was that the direct association between Job Demands and Turnover was not significant. It is possible that the sample size was inadequate to detect the small effect size of this association. It is also possible that Turnover is associated with the "perception" of job demands (also called the appraisal of job demands) rather than stress related to job demands (Boswell, Olson-Buchanan, & LePine, 2004). To shed light on this nonsignificant association between Job Demands and Turnover, it was considered useful to more closely explore the differential effects of the "perception" of job demands and stress related to job demands on Turnover using the same sample of RAC nurses. Therefore, a follow-up analysis of the NMeS data (Study 2) was conducted. The next chapter reports that analysis.

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[7] This is the end of the published article.

Chapter Six: Challenge-Related Stress and Felt Challenge: Further Exploring Predictors of Turnover in Residential Aged Care Nurses (Study 2)

An important finding from Study 1 was that the hypothesized direct association between Job Demands and Turnover was not significant. To explore further this unexpected finding, Study 2 was conducted with the same sample of 239 residential aged care (RAC) nurses derived from the NMeS data set.

As stated in Section 5.6., there are two dimensions of job demands: challenges (i.e. job demands with potential for personal growth) and hindrances (i.e. job demands that hinder personal growth). As the NMeS did not collect data related to hindrances, the current research can only explore the differing impact of Challenge-related Stress (i.e. stress derived from job demands with potential for personal growth) and Felt Challenge (i.e. a sense of undertaking challenging job with potential for personal growth) on Turnover and Psychological Health of RAC nurses. It would be informative to incorporate both Felt Challenge and Challenge-related Stress to retest the two structural equation models specified in Study 1. However, the sample size was inadequate to satisfy statistical power of testing the two structural equation models. Hence, Study 2 applied hierarchical regression analyses to further explore the structural relationships. The specific aims of Study 2 were to examine the differential impacts of Challenge-related Stress and Felt Challenge on Turnover and Psychological Health in RAC nurses, and to explore the coping resources that may help RAC nurses reduce their level of stress related to job challenges, an under-explored area.

Study 2 has been accepted by a peer-reviewed journal, Collegian. The article (Gao, Newcombe, Tilse, Wilson, & Tuckett, 2016) can be accessed from http://www.sciencedirect.com.ezproxy.library.uq.edu.au/science/article/pii/S1322769616300610 . The author manuscript is formatted according to the University of Queensland requirements for "Including Publications in the Thesis" (University of Queensland, 2016). This chapter incorporates this author manuscript. As the entire manuscript is inserted, there is some repetition of information from previous chapters. Sections 6.1, 6.2 and 6.3 primarily summarize the arguments made and frameworks presented in Chapters One to Four. The remaining sections focus on expanding the methods and detailing the analysis and results of Study 2.

6.1.   Introduction

With global population ageing and increased longevity, all countries experience increasing needs for residential aged care (RAC, also known as long-term care or nursing home care) services

(Scheil-Adlung, 2015). Between 2010 and 2050, the demand for RAC nurses is projected to more than double in the United States and Canada, and nearly triple in Australia and New Zealand (Colombo et al., 2011). However, many RAC facilities struggle with staff shortage as a consequence of high turnover and poor psychological health of RAC nurses (Chenoweth et al., 2010).

Poor psychological health contributes to frequent sick leave and absenteeism among nurses, leading to insufficient staffing levels, increased organizational costs and poor quality of care (Andrews & Wan, 2009; Oyama & Fukahori, 2015). The shortage and high turnover of nurses result in inadequate nurse-to-resident ratios, work overload, recurring recruitment and low productivity of nurses (Spilsbury et al., 2011). Consequently, instability in the nurse workforce may negatively impact on health and safety of nurses, compromise quality of care, and increase financial costs (Hayes et al., 2006; Roche et al., 2015). Given these deleterious effects, it is pivotal to examine possible antecedents of turnover and psychological health among RAC nurses.

Over the last three decades, theoretical and empirical work has linked employee turnover and psychological health to challenge-related stress (i.e. stress derived from challenging job demands with potential for personal gains) (Podsakoff et al., 2007). In addition to the assessment of stressfulness, an emerging trend is toward investigating the potential impact of "perceptions" of job challenges (i.e. felt challenge) on employee turnover and psychological health (Webster, Beehr, & Love, 2011). Exploring the different influences of challenge-related stress and felt challenge among RAC nurses will assist service providers to improve job designs and to develop interventions to reduce nurse turnover and improve their psychological health.

This is one of the first studies to examine the differential impacts of challenge-related stress and felt challenge on actual turnover and psychological health, and to explore causality between actual turnover and its antecedents in RAC nurses. Furthermore, the present study sheds light on the coping resources that may help RAC nurses reduce their level of stress related to job challenges, an under-explored area. Given that RAC nursing in many developed countries share similarities regarding turnover, psychological health and occupational stress (Chenoweth et al., 2010), findings from this Australian quantitative study may inform RAC nursing management in other developed countries.

6.2.   Residential aged care nursing job characteristics

In Australia, RAC facilities accommodate older people who are unable to live at home independently. Over three-quarters of permanent RAC residents have been assessed as requiring intensive skilled nursing care (Australian Institute of Health and Welfare, 2013). The RAC facilities

are owned and operated by not-for-profit organizations, private organizations and local and state governments (Australian Institute of Health and Welfare, 2014). The care costs, covered by both government funding and means-tested user contributions, are strictly regulated by the Australian Government (Productivity Commission, 2011). Based on a review of aged care coverage deficits in 46 countries, Scheil-Adlung (2015) concluded that RAC facilities are underfunded in most countries, including Australia. Within the highly regulated limited budget, service providers are required to deliver optimal person centre care. This creates excessive stress for RAC nurses.

In RAC facilities, registered nurses assume high levels of responsibility, including skilled nursing care, coordinating health care professionals to meet residents' health care needs, supervising nursing assistants and other workers (e.g. kitchen staff), assessing the care needs of residents, interacting with residents' families, and preparing documentation (Gao et al., 2014). Aged care work requires high levels of competence (e.g. specific knowledge of dementia), commitment and confidence in working with older adults with complex needs in a physically and emotionally demanding environment (Chenoweth et al., 2010; Eley et al., 2007; Elliott, Scott, Stirling, Martin, & Robinson, 2012). Due to inadequate resources and staffing levels, RAC nurses experience constant time pressures and a heavy workload (King et al., 2012). RAC nursing appears to be a challenging job. Working in this challenging environment, RAC nurses are at risk of poor psychological health and frequent turnover (Chenoweth et al., 2010). It is, therefore, important to understand how job challenge related variables are associated with psychological health and turnover of RAC nurses.

6.3.   Theoretical frameworks and empirical evidence

6.3.1.   Theoretical frameworks

The current study was informed by the Job Demand-Control-Support (JDCS) model (Johnson & Hall, 1988; Karasek, 1979) and the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984).

The JDCS model proposes that employees' job demands, along with their coping resources, are associated with a range of psychological health problems and behaviour outcomes (e.g. turnover) (Johnson & Hall, 1988; Karasek, 1979). Coping resources include skill discretion (i.e. the possibility to utilize and develop skill sets), decision authority (i.e. the chance to participate in organizational decision making process) and social and emotional support provided by co-workers and supervisors (Johnson & Hall, 1988; Karasek, 1979). The JDCS model has been empirically tested with nurses from a wide range of health care settings in many countries (e.g. Chen et al.,

2015; Peterson et al., 2011), including Australian aged care nurses (e.g. Rodwell & Martin, 2013; Rodwell et al., 2009).

The Transactional Model of Stress and Coping proposes that an individual's responses to stressful events involve their perceptions of the stressors (i.e. demands) and evaluations of available resources to cope with those stressors (Lazarus & Folkman, 1984). If an individual's perceptions of demands exceed their coping resources, adverse effects, such as negative health and work outcomes, may occur (Lazarus & Folkman, 1984). Health problems and work outcomes (e.g. turnover) for an employee are not only a function of the level of stress the employee has experienced, but also a function of how the employee feels about their job demands and coping resources.

6.3.2. Empirical evidence and hypotheses proposed

The connection between job demands (also known as job stressors) and psychological health proposed by the JDCS model has been consistently found in the past empirical research (e.g. Adriaenssens et al., 2015; Adriaenssens et al., 2011; Rodwell & Martin, 2013).

However, the relationship between job stressors and turnover remains inconclusive. A meta-analysis conducted by Podsakoff and colleagues (2007) revealed that two dimensions of job stressors affect turnover in an opposite direction. These two dimensions are challenge-related stress and hindrance-related stress. According to Cavanaugh and colleagues (2000), challenge-related stress derives from challenging job demands such as levels of responsibility, time pressures and heavy workload, and these facilitate personal growth; in contrast, hindrance-related stress stems from job demands such as organizational politics and job insecurity, and these impede employees from accomplishing work tasks and achieving personal goals.

In contrast to hindrance-related stress, challenge-related stress has been shown to be negatively associated with turnover and intention to quit (Podsakoff et al., 2007); while both challenge- and hindrance-related stress are positively associated with poor psychological health (Ozer, Chang, & Schaubroeck, 2014).

Building on the JDCS model and prior empirical evidence, it was hypothesized that:

H_1: Challenge-related stress would be negatively associated with turnover, controlling for skill discretion, decision authority, co-worker support and supervisor support.

H₂: Challenge-related stress would be positively associated with poorer psychological health, controlling for skill discretion, decision authority, co-worker support and supervisor support.

Apart from the assessment of stressfulness, Lazarus and Folkman's (1984) Transactional Model of Stress and Coping highlights the potential impact of perception of job demands, in this case perception of job challenges (i.e. felt challenge), on employee turnover and psychological health. However, little research has investigated felt challenge. This is in part due to the concern about percept-percept bias -- that is, an individual's concurrent assessments on positive aspects of their job (e.g. challenging job demands with potential for personal gains) and positive work outcomes (e.g. intention to stay) may be similar, resulting in inflations in their correlations (Cavanaugh et al., 2000; Crampton & Wagner, 1994). Boswell and colleagues (2004), one of the few research teams to directly investigate this underexplored area, found that felt challenge was negatively associated with intention to quit among university staff. Based on the Transactional Model of Stress and Coping and prior empirical evidence, it was proposed that:

H₃: Felt challenge would be negatively associated with turnover, controlling for skill discretion, decision authority, co-worker support and supervisor support.

H₄: Felt challenge would be positively associated with poorer psychological health, controlling for skill discretion, decision authority, co-worker support and supervisor support.

The negative effects of both challenge- and hindrance-related stress on psychological health have been reported in past research (e.g. Crawford, LePine, & Rich, 2010), with intervention literature focusing on how to reduce the level of hindrance-related stress. In contrast, given that challenge-related stress may be viewed in a positive way (Dawson, O'Brien, & Beehr, 2016), minimal attention has been paid to the interventions to alleviate the negative effects of challenge-related stress (e.g. mental strain).

Past research has revealed an inverse relationship between coping resources and job stress (e.g. Garrosa, Rainho, Moreno-Jiménez, & Monteiro, 2010). As challenge-related stress is a form of job stress, it was hypothesized that:

H₅: An increase in skill discretion, decision authority, co-worker support and supervisor support would be associated with a reduction in the level of challenge-related stress.

Taken together, the current study tested five hypotheses to examine the differing impacts of challenge-related stress and felt challenge on turnover and psychological health, and to explore whether coping resources were related to challenge-related stress in RAC nurses.

6.4. Methods

6.4.1. *Data source and sample*

The current research used an existing data set derived from the Nurses and Midwives e-cohort Study (NMeS: Turner et al., 2009) to explore the five hypotheses. The NMeS gathered data from nurses across three countries (Australia, New Zealand and the United Kingdom) for research of health and work life balance (Turner et al., 2009) . In the NMeS, on-line surveys were utilized to collect the longitudinal data (baseline: 1st April 2006 - 31st March 2008; and Survey 2: 30th August 2008- 26th September 2009). A number of strategies were used to recruit and retain nurse participants. For example, personalized mails and emails were sent to nurses; and reminder emails, mails and phone calls were made to encourage those who did not respond to the surveys. The participants were statistically representative samples of the general nursing workforce, including the RAC nursing workforce, in the three counties (Schluter et al., 2011).

The full Australian sample size at baseline was 5579, of which 254 respondents indicated working in RAC. Fifteen cases with extreme scores across the variables of interest were excluded from analyses, leaving N = 239.

6.4.2. *Measures*

All measures included in the present research were initially selected or developed and validated in the NMeS.

Turnover Participants' responses to "work setting of main employment" at the baseline and in Survey 2 were used to measure Turnover. The current study selected respondents who reported working in RAC at baseline. Those who remained in the RAC at Survey 2 were coded as 0 ('staying'), and those who left the RAC were coded as 1 ('leaving').

Psychological Health This was indicated by a summary measure, Mental Health Component Score of the SF-36 (Ware, 2000). A lower value suggested poorer psychological health. Cronbach's alpha for Psychological Health was 0.82, indicating good internal consistency.

Challenge-related Stress In the literature, this commonly refers to stress associated with high level of responsibility, heavy workload and time pressure (Cavanaugh et al., 2000). An existing scale, the Effort domain of Effort Reward Imbalance questionnaire (ERI: Siegrist, 1996) was modified to indicate Challenge-related Stress. Respondents were asked whether they agreed with each of six statements (e.g., "I have constant time pressure due to a heavy work load"). If they agreed with the statements, there was a follow-up question regarding the level of stress they experienced with a four-point response option ranging from "I am not at all stressed" to "I am very stressed". To identify the subscale structure of the Effort measurement and to eliminate items unrelated to Challenge-related Stress, a principal component analysis was conducted. The findings indicated only one factor with eigenvalue > 1, explaining 53.28 % of the variance. However, the item related to physical demands (i.e. "My job is physically demanding") did not match the conceptual operationalisation of Challenge-related Stress, although it loaded onto this factor (0.43). The item was removed from the measurement of Challenge-related Stress due to poor face validity. Challenge-related Stress was created by summing the responses to the remaining five items (Time Pressure, Interruptions and Disturbances, Responsibility, Working Overtime and Increasing Demands). Higher scores indicate greater level of stress. The five items were significantly correlated with each other (all rs ≥ 0.36, $p<0.001$). Cronbach's alpha for Challenge-related Stress was 0.84, suggesting good internal consistency.

Felt Challenge This was measured by responses to the five statements related to workload, time pressure and job responsibility in the ERI (e.g. "I have a lot of responsibility in my job"). Agreement with a statement was coded as 1, and a disagreement with a statement was coded as 0. Felt Challenge was assessed by summing up the responses to the five statements, with higher scores indicating a feeling of greater challenges in their job.

Coping resources related variables   These included four variables: Skill Discretion (6 items, e.g. "my job requires a high level of skill"), Decision Authority (3 items, e.g. "I have a lot of say about what happens on my job"), Co-worker Support (2 items, e.g. "people I work with are helpful in getting the job done") and Supervisor Support (2 items, e.g. "my supervisor is concerned about the welfare of those under him/her"). Participants responded to these items on four-point Likert-type scales from "strongly disagree" to "strongly agree" with higher scores indicating greater coping resources (e.g. higher level of Skill Discretion). Cronbach's alpha for coping resources related variables ranged from 0.69 to 0.89 *(Table 6.1)*, indicating acceptable to good internal consistency.

Individual and workforce characteristics Apart from the focal variables outlined above, the effects of individual and workforce characteristics on the outcome variables specified were also considered in each hypothesis. These variables included three continuous variables (i.e. Age,

Table 6.1. Intercorrelations between focal variables and internal consistencies of standardized instruments *(diagonal shows Cronbach's alpha)* **(N=239)**

	1	2	3	4	5	6	7	8
1.Turnover	-							
2. Psychological Health [b]	.02	*.82*						
3. Challenge-related Stress [c]	-.11	-.23**	*.84*					
4. Felt Challenge [d]	-.17*	-.10	.78***	-				
5. Skill Discretion [e]	-.08	.13	.07	.07	*.74*			
6. Decision Authority [e]	-.11	.25**	-.05	-.02	.61***	*.69*		
7. Co-worker Support [e]	-.08	.13	-.19**	-.13	.31***	.37***	*.72*	
8. Supervisor Support [e]	-.15*	.20**	-.20**	-.17**	.45***	.55***	.50***	*.89*

Notes: a. * *P* <.05, ** *P* <.01, *** *P* <.001.

b. Higher scores indicated better psychological health.

c. Higher scores represented higher level of stress.

d. Higher scores suggested greater sense of job challenge.

e. Higher scores indicated higher level of skill utilization or decision authority or co-worker support or supervisor support.

Annual Salary, and Working Hours), one ordinal variable - Group Size (1 = I work alone, 2 = 2-5 people, 3 = 6-10 people, 4 = 11-20 people, and 5 = 21 or more"), one nominal variable (i.e. Facility Ownership, dummy coded as Government vs. Non-Government), and three dichotomous variables (i.e. Currently Undertaking Study (Yes=1/No=0), Doing Shift Work (Yes=1/No=0), and Highest Qualification (Tertiary-based certificate and higher education=1/ Otherwise=0).

Table 6.2 shows the characteristics of the sample and descriptive statistics for all the variables of interest.

Table 6.2. Sample Descriptive Statistics (N=239)

Variables	M(SD)	%	Range
Focal variables			
Turnover (yes)		40.67%	
Psychological Health [a]	46.85 (10.76)		3.76-66.78
Challenge-related Stress [b]	14.06 (4.58)		5-25
Felt Challenge [c]	3.84 (1.19)		0-5
Skill Discretion [d]	35.98 (5.31)		22-48
Decision Authority [d]	36.21(6.94)		16-48
Co-worker Support [d]	5.93 (1.01)		2-8
Supervisor Support [d]	6.03 (1.44)		2-8
Individual and workforce variables			
Age	47.89 (9.28)		22-66
Highest qualification			
Tertiary-based and higher (yes)		68.62%	
Currently studying (yes)		29.71%	
Average working hours per week	33.02(11.56)		5-64
Annual salary (AUD)	47,054.98 (19,140.47)		3,300-92,000
Facility ownership			
Government		22.43%	
Non-government		77.57%	
Doing shift work (yes)		69.04%	
Group size			
Work alone		4.94%	
2-5 people		30.96%	
6-10 people		22.09%	
11-20 people		13.22%	
>20 people		28.79%	

Notes: a. Higher scores indicated better psychological health.
 b. Higher scores represented higher level of stress.
 c. Higher scores suggested greater sense of job challenge.
 d. Higher scores indicated higher level of skill utilization or decision authority or co-worker support or supervisor support.

6.4.3. Missing data

Multiple imputation by chained equations (MICE: Azur et al., 2011) was used to impute missing values. Five implicates with no missing data were created using IVEware 0.2 package

based on MICE (Raghunathan et al., 2001). Following Rubin (1976) and Saunders and colleagues (2006), results from the five implicates were combined to produce less biased estimates.

6.4.4. Analysis

Given the sample size and to ensure adequate statistical power, the individual and workforce characteristics variables that were not significantly correlated with the outcome variables in each hypothesis were removed from subsequent hypothesis testing.

To test H_1, the relationship between Challenge-related Stress and Turnover, hierarchical logistic regression was performed in three steps: the individual and workforce variables were introduced at Step 1; coping resource variables (i.e. Skill Utilization, Decision Authority, Co-worker Support and Supervisor Support) at Step 2; and finally, Challenge-related Stress at Step 3 to examine its unique impact on Turnover. H_3 (the association between Felt Challenge and Turnover) was tested using similar procedures, with Felt Challenge instead of Challenge-related Stress, entering at Step 3.

To test H_2 and H_4, the relationship between Psychological Health and either Challenge related Stress (H_2) or Felt Challenge (H_4), hierarchical multiple regression was conducted in three steps: Step 1 introduced individual and workforce characteristics variables, Step 2 added coping resource variables, and Step 3 included either Challenge-related Stress (H_2) or Felt Challenge (H_4).

To test H_5, the relationship between coping resources related variables and Challenge-related Stress, hierarchical multiple regression was conducted in two steps. Individual and workforce characteristics variables were entered at Step 1, followed by coping resource variables at Step 2.

Given that Challenge-related Stress and Felt Challenge were highly correlated ($r = 0.78$, $p < 0.001$), it was deemed inappropriate to simultaneously include them in the same models for predicting either Turnover or Psychological Health due to the concern of multicollinearity.

All analyses were performed using SPSS 22 (IBM Corporation, 2011).

6.5.   Results

Turnover was negatively related to Felt Challenge ($r = -0.17$, $p < 0.05$), and better Psychological Health was associated with lower levels of Challenge-related Stress ($r = -0.23$, $p < 0.01$) (*Table 6.1*). The four coping resources related variables were significantly and positively correlated with each other. Among the eight individual and workforce characteristic variables, Facility Ownership was significantly associated with Turnover; Age was significantly related to

Psychological Health; and Annual Salary, Working Hours and Group Size were significantly related to Challenge-related Stress. The directions of all these significant correlations were as predicted.

In exploring the hypotheses that Turnover would be predicted by Challenge-related Stress (H_1, Model 1) or Felt Challenge (H_3, Model 3), the Hosmer and Lemeshow statistics were nonsignificant, implying that both models fitted the observed data on turnover of RAC nurses in Australia. Results from Step 1, in which only Facility Ownership was included as a predictor of Turnover, revealed a significant model, $\chi^2(1,N=239)=21.61$, $p<0.001$ (*Table 6.3*). At Step 2, inclusion of coping resources related variables produced a nonsignificant change in model Chi-Square, $\chi^2(4,N=239)=5.21$, $p=0.266$, indicating that coping resources related variables did not have a unique impact on Turnover. At Step 3, when adding Challenge-related Stress (Model 1), change in model Chi-Square was not significant, $\chi^2(1,N=239)=3.41$, $p=0.065$, suggesting that Challenge-related Stress did not uniquely contribute to the prediction of Turnover. In comparison, for Model 3, when entering Felt Challenge instead of Challenge-related Stress at the Step 3, the model became significant, $\chi^2(1,N=239)=6.11$, $p=0.013$. The significant predictors for Turnover included Facility Ownership ($\beta =1.44$, odds ratio=4.22, $p<0.001$), Felt Challenge ($\beta =-0.36$, odds ratio $=0.70$, $p=0.006$) and Supervisor Support ($\beta =-0.32$, odds ratio=0.72, $p=0.044$). This suggested that, controlling for other factors, the likelihood of turnover for a nurse would decline as the level of feeling job challenge increases. Findings rejected H_1, but retained H_3.

With regard to testing the hypotheses that Psychological Health would be associated with Challenge-related Stress (H_2, Model 2) or Felt Challenge (H_4, Model 4), both full models were significant (Model 2: $R^2=0.108$, F(6,238)=4.68, $p<0.001$; and Model 4: $R^2=0.078$, F (6,238)=3.26, $p=0.004$) (*Table 6.4*). At Step 1, Age approached significance and explained 1.4% of the total variance in Psychological Health (F(1,238)=3.36, $p=0.068$). Adding coping resources related variables at Step 2 significantly improved the model, $R^2_{change} =0 .062$, $F_{change}(4,233)=3.88$, $p=0.005$. At Step 3, entering Challenge-related Stress (Model 2) contributed an additional 3.2% variance in Psychological Health ($F_{change}(1,232)= 8.41$, $p=0.004$), suggesting that Challenge-related Stress had unique impact on Psychological Health. A greater level of Challenge-related Stress was significantly related to poorer Psychological Health ($\beta=-0.22$, $p=0.002$). In comparison, adding Felt Challenge at Step 3 (Model 4), contributed an additional non-significant 0.2% variance in Psychological Health ($\beta=-0.08$, $p=0.289$, $F_{change}(1,232)=0.55$, $p=0.460$). Therefore, H_2 was retained while H_4 was rejected.

Table 6.3. Hierarchical logistic regressions on Turnover (N=239)

	Step 1			Step 2			Step 3 (Challenge Stress)			Step 3 (Felt Challenge)		
	β	OR	P value	β	OR	P value	β	OR	P value	β	OR	P value
Facility ownership	1.42***	4.16	<.001	1.46***	4.32	<.001	1.45***	4.25	<.001	1.44***	4.22	<.001
Skill Discretion [a]				.01	1.01	.803	.02	1.02	.587	.03	1.03	.531
Decision Authority [a]				-.01	0.99	.845	-.01	.99	.824	-.01	0.99	.872
Co-worker Support [a]				.05	1.06	.744	.01	1.01	.949	.02	1.02	.914
Supervisor Support [a]				-.25	.78	.098	-.30	.74	.059	-.32*	.72	.044
Challenge Stress [b]							-.07	.94	.060			
Felt Challenge [c]										-.36**	.70	.006
-2 Log likelihood χ²		300.41			295.20			291.79			289.09	
Improvement χ²	χ²(1,N=239)=21.61, P <.001			χ²(4,N=239)=5.21, P =.266			χ²(1,N=239)=3.41, P =.065			χ²(1,N=239)=6.11, P =.013		
df		1			4			1			1	

Notes: β: Beta weights; OR: odds ratio.
   * *P* <.05, ** *P* <.01, *** *P* <.001.
   a. Higher scores indicated higher level of skill utilization or decision authority or co-worker support or supervisor support.
   b. Higher scores represented higher level of stress related to challenge.
   c. Higher scores indicated higher sense of job challenge.

Table 6.4. Hierarchical multiple regressions on Psychological Health (N=239)

	Regression coefficients (Beta weights)							
	Step 1		Step 2		Step 3 (Challenge Stress)		Step 3 (Felt Challenge)	
	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Age	.15	.13	.14	.12	.15*	.13*	.15	.13
Skill Discretion			-.17	-.08	-.08	-.04	-.14	-.07
Decision Authority			.33*	.21*	.33*	.21*	.34*	.22*
Co-worker Support			.39	.04	.07	.01	.33	.03
Supervisor Support			.77	.10	.42	.06	.63	.08
Challenge Stress					-.52**	-.22**		
Felt Challenge							-.77	-.08
Δ R²	.014		.062**		.032**		.002	
R²	.014		.076**		.108***		.078**	

Notes: * $P < .05$, ** $P < .01$, *** $P < .001$.

Higher scores indicated higher level of skill utilization or decision authority or co-worker support or supervisor support.

Higher scores represented higher level of stress.

Higher scores indicated higher sense of job challenge.

In examining H_5 that coping resource variables would be associated with a reduction in the level of stress caused by job challenges, the full model was significant, $R^2=0.202$, $F(7,238)=8.36$, $p<0.001$ (*Table 6.5*). At Step 1, Working Hours and Group Size were significant predictors and explained 12.0% of the total variance (F_{change} $(3,235)=10.73$, $p<0.001$). At Step 2, the inclusion of Skill Discretion, Decision Authority, Co-worker Support and Supervisor Support accounted for an additional 8.2% of variance ($F_{change}(4,231)=5.90$, $p<0.001$). Supervisor Support was significantly related to Challenge related Stress ($\beta=-0.24$, $p=0.004$), however, Skill Discretion, Decision Authority, and Co-worker Support were not. The findings therefore partially supported H_5.

Table 6.5. Hierarchical multiple regression on Challenge-related Stress (N=239)

	Regression coefficients (Beta weights)			
	Step 1		Step 2	
	Unstandardized	Standardized	Unstandardized	Standardized
Working hours	.12*	.30*	.11*	.26*
Annual salary	-2.525E-05	-.11	-1.578E-05	-.07
Group size	.54*	.15*	.60*	.17*
Skill Discretion [b]			.11	.13
Decision Authority [b]			-.02	-.03
Co-worker Support [b]			-.49	-.11
Supervisor Support [b]			-.75**	-.24**
Δ R²	.120***		.082***	
R²	.120***		.202***	

Notes: a. * $P<.05$, ** $P<.01$, *** $P<.001$.
b. Higher scores indicated higher level of skill utilization or decision authority or co-worker support or supervisor support.

6.6. Discussion

The current study found that Turnover was negatively predicted by Felt Challenge but not by Challenge-related Stress, controlling for a number of workforce and individual characteristics. Boswell and colleagues (2004) revealed a negative association between Felt Challenge and Intent to Quit among university staff. The current study has improved on Boswell and colleagues (2004) by examining a causal relationship between Felt Challenge and actual Turnover in RAC nurses. The criterion variable, Turnover, was assessed at the second wave, while the predictor, Felt Challenge, at baseline. When criterion variables are measured after predictors, a causal link may be established (Kline, 2011). This suggested that a greater sense of feeling job challenges tended to reduce RAC nurse turnover. This was not surprising. The job challenges have potentials for personal gain

(Lazarus & Folkman, 1984), thus, eliminating the risk of turnover. Given the unique impact of Felt Challenge on Turnover, Felt Challenge should be included in future studies of Turnover.

As expected, a higher level of Challenge-related Stress was associated with poorer Psychological Health, controlling for a number of workforce and individual characteristics. This is consistent with previous research (e.g. Crawford et al., 2010). This result implies that interventions to reduce the level of challenge-related stress might help improve the psychological health of RAC nurses.

The current study observed that a collective increase in Skill Discretion, Decision Authority, Co-worker Support and Supervisor Support was related to a decrease in the level of stress caused by job challenges, controlling for a number of workforce and individual characteristics. This is consistent with the JDCS model that coping resources are negatively related to job demands and stress (Johnson & Hall, 1988; Karasek, 1979). Challenge-related Stress was significantly and negatively associated with Supervisor Support, but not with Skill Discretion, Decision Authority and Co-worker Support. This finding can be explained by the Job Demands-Resources (JD-R) model, which proposes that different types of coping resources play different roles in helping employees cope with different types of job demands (Bakker & Demerouti, 2007). The support, appreciation and constructive feedback from supervisors motivate employees to accomplish challenging work tasks and achieve personal goals, thus, helping employees relieve stress related to job challenges (Bakker & Demerouti, 2007). Although past research has established the link between supervisor support and well-being of aged care nurses (e.g. Rodwell & Martin, 2013), few studies have explored the unique impact of supervisor support on challenge-related stress. The current study fills this gap by showing that, compared with other coping resources, supervisor support is the most effective to assist RAC nurses in managing challenge-related stress.

6.7. Implications for nursing practice

Findings from the current study have important implications for aged care nursing management. In our RAC nurse sample, lower level of turnover appeared to be related to a greater sense of job challenges, but not the level of stress caused by job challenges. These results indicate that, to reduce turnover of RAC nurses, nurse managers may consider identifying individual intrinsic needs for personal growth, and assigning appropriate responsibilities and workload to individual nurses based on their needs and capacities.

Furthermore, our findings showed that poorer psychological health of RAC nurses was related to a high level of stress caused by job challenges; and the level of stress caused by job challenges appeared to be negatively related to a joint increase in coping resources related variables

(i.e. Skill Discretion, Decision Authority, Co-worker Support and Supervisor Support), with higher level of Supervisor Support having a significant unique contribution to the reduction of stress related to job challenges. These findings suggest that, when assigning job responsibilities and workload to RAC nurses, nurse managers might consider work-related interventions to reduce the risk of psychological health problems caused by challenge-related stress. These interventions might involve increasing work-related coping resources, such as supervisor support, co-worker support and opportunities for skill utilization, skill development and decision making. Particularly, nurses' immediate supervisors might consider regularly assessing job related resources that individual nurses require to accomplish their challenging job tasks, and providing targeted support to help them cope with stress related to job challenges.

6.8.   Strengths and Limitations

The confidence in, and practical significance of, the findings were enhanced by the measurement of Turnover and several analytic strategies. The current study investigated "actual" turnover in contrast to much of the previous research that has conceptualized turnover as intention to quit (Hayes et al., 2006) . Turnover was measured after its predictors, avoiding percept-percept bias (Crampton & Wagner, 1994). Further, the missing data was addressed by multiple imputation, thus, producing more efficient and less biased results (Rubin, 1976). Five sets of hierarchical logistic and linear regression models were tested using the same sample. This offered a comprehensive understanding of the relationships between Challenge-related Stress, Felt Challenge, Turnover and Psychological Health.

Despite the strengths mentioned above, the current study is not without limitations. First, it is limited by the available variables in the secondary data set. Some information specific to the job challenges of RAC nursing (e.g. supervising nursing assistants) was not collected in the data. Nonetheless, the current study provided a valuable starting-point for developing more comprehensive models to further test the relationships between Felt Challenge and Turnover and Psychological Health among RAC nurses. Second, the measurement of Felt Challenge was constrained by only asking participants about their agreements with the potential job challenges. This might oversimplify how the nurses perceived their job challenges in RAC. Further exploration is needed to understand how individual nurses appraise and identify the scope of responsibility, time pressure and workload specific to the RAC nursing job. Third, constrained by the sample size and to satisfy statistical power, the current study only controlled limited significant variables related to workforce and individual characteristics. Nevertheless, it does provide valuable insights by considering the important effects of coping resources, while testing the relationships between Felt

Challenge, Challenge-related Stress and their outcomes (Turnover and Psychological Health). Fourth, the underlying mechanisms between Felt Challenge and Turnover were not identifiable in the current study. Qualitative research should be conducted to provide a more nuanced perspective on this phenomenon.

6.9. Conclusions

In conclusion, the current study has contributed to the empirical literature regarding job challenges by examining the differing impacts of Challenge-related Stress and Felt Challenge on Turnover and Psychological Health using the same sample of Australian RAC nurses. Five hypotheses were tested. The findings retained the two hypotheses that Challenge-related Stress would be positively associated with poorer Psychological Health (H_2), and Felt Challenge would be negatively associated with Turnover (H_3). The findings rejected the two hypotheses that Challenge-related Stress would be negatively associated with Turnover (H_1) and Felt challenge would be positively associated with poorer Psychological Health (H_4). The hypothesis that an increase in Skill Discretion, Decision Authority, Co-Worker Support and Supervisor Support would be associated with a reduction in the level of Challenge-related Stress (H_5) was partially supported. These results indicated that a greater sense of job challenges appeared to reduce Turnover, but was unrelated to Psychological Health in the RAC nurses. In contrast, a higher level of Challenge-related Stress was predictive of poorer Psychological Health, but did not contribute to Turnover of the RAC nurses. Furthermore, the current study extends the knowledge of coping resources and job stress by identifying Supervisor Support as a valuable resource to manage stress related to job challenges. Findings suggest that, with job designs that promote positive challenging aspects of the job and targeted interventions that help reduce the stress associated with the job challenges, RAC facilities may be better placed to retain their qualified nursing staff and meet the future demands of our ageing population.[8]

6.10. Summary

Study 2 explored the differing impacts of Challenge-related Stress and Felt Challenge on Turnover and Psychological Health in RAC nurses. Hierarchical regression analyses were conducted using the data of 239 Australian RAC nurses derived from the NMeS data set. It was found that a greater sense of job challenge appeared to reduce Turnover. A higher level of

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[8] This is the end of the author manuscript.

Challenge-related Stress predicted poorer Psychological Health. Supervisor Support was negatively associated with Challenge-related Stress. Study 2 extended findings from Study 1, and further shed light on Aim 1 (testing predictive models of turnover of residential aged care nurses in Australia).

Findings from Study 1 and Study 2 only included available data from RAC nurses in the NMeS data set. Findings based on nurses may not be applicable to nursing assistants in light of variations in their work tasks. Given that the variables relating to cultural and linguistic background, citizenship and immigration status had substantial missing responses, Studies 1 and 2 were unable to distinguish overseas born nurses from native born nurses. The findings demonstrated a need to provide comprehensive descriptions of job demands and coping resources specific to DCWs, to investigate how cultural diversity affects DCWs' employment outcomes, and to understand how DCWs put various factors together in determining whether to stay or leave aged care. The subsequent Study 3 utilised a qualitative approach to explore perspectives of both nurses and nursing assistants, and how their experiences differed. Study 3 also included DCWs from culturally and linguistically diverse backgrounds. The next chapter presents the findings from that study.

Chapter Seven: Understanding Perceptions and Employment Intentions of Residential Aged Care Nurses and Nursing Assistants (Study 3)

The previous two chapters have presented Study 1 and Study 2, addressing Aim 1 (testing predictive models of turnover of residential aged care nurses in Australia). This chapter reports Study 3, which addressed Aim 2, exploring perceptions of job demands, coping resources (also known as job resources) and employment intentions among Australian residential aged care (RAC) nurses and nursing assistants. Study 3 sought to understand the influence of cultural diversity within staff and the views of both nursing assistants and nurses through an in-depth investigation of staff in one facility with a high level of cultural diversity in staff and residents. Informed by the findings from Study 1, an interview guide was developed to direct semi-structured individual interviews to collect data for Study 3. Thematic analysis and constant comparative analysis were completed to compare and contrast the perceptions and employment intentions of different groups of DCWs (i.e. nurses vs. nursing assistants; overseas born DCWs vs. others).

Study 3 has been published in the Journal of Aging Studies (Gao, Tilse, Wilson, Tuckett, & Newcombe, 2015). The published paper can be accessed from http://www.sciencedirect.com/science/article/pii/S0890406515300700. The accepted author manuscript is formatted according to the University of Queensland requirements for "Including Publications in the Thesis" (University of Queensland, 2016). This chapter incorporates this accepted author manuscript. As the entire manuscript is inserted, there is some repetition of information from previous chapters. Sections 7.1 and 7.2 primarily summarize the arguments made and frameworks presented in Chapters One to Four. The remaining sections focus on expanding the methods and detailing the analysis and results of Study 3.

7.1.   Introduction

The shortage of direct care workers (DCWs) in the residential aged care[9] industry has fuelled a groundswell of international interest in their employment intentions (i.e. to stay or leave aged care) (Colombo et al., 2011). In the coming decades, the residential aged care industry in the United States (US), the United Kingdom (UK), and Australia, will experience serious challenges in developing a sufficient direct care workforce with appropriate skill mix to cater for escalating needs

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[9] Residential aged care is also called nursing home care in the literature.

of a diverse and growing aging population (Chenoweth et al., 2014; Rosen et al., 2011; Szczepura, 2011). Staff shortages and high turnover rates among DCWs are also documented, and linked to increased costs and reduced quality of care (Castle & Engberg, 2005; Duffield et al., 2014; Hayes et al., 2006; Karantzas et al., 2012; Spilsbury et al., 2011).

Effectively addressing staff shortages and staff turnover is further complicated by the rising numbers of older residents from culturally and linguistically diverse backgrounds requiring culturally appropriate care (Howe, 2009). In 2026, about 25% of older Australians aged 80 and older are expected to be from culturally and linguistically diverse backgrounds (Gibson et al., 2001). To address staff shortages and expanding care demands, the residential aged care industry in the US, the UK, and Australia seeks to attract overseas born DCWs (Martin, Lowell, Gzodziak, Bump, & Breeding, 2009; Productivity Commission, 2011; Shutes, 2012). As a result, the residential aged care sector is increasingly culturally diverse. Shutes (2012) argues that this impacts on worker turnover and employment intentions. To reduce turnover of DCWs in current multicultural environments, it is crucial to explore their perceptions of care work and employment intentions, as employment intentions are strong predictors of actual turnover (Karantzas et al., 2012).

This Australian qualitative study contributes to the growing body of knowledge on employment intentions of DCWs, which is especially relevant for countries where residential aged care has similar organizational and employment characteristics. The core DCW workforce constitutes registered nurses and nursing assistants (also called assistants in nursing or personal carers). This study simultaneously investigated nursing assistants, an understudied group who in Australian residential aged care facilities provide the majority of direct care, and nurses. As residency status and cultural and linguistic backgrounds strongly impact on DCWs' employment intentions (Howe, 2009; Shutes, 2012), this study differentiated the participants as either "Australian born DCWs" or "overseas born DCWs from culturally and linguistically diverse backgrounds with either Australian citizenship or permanent residency" (abbreviated as "overseas born DCWs" in this paper). This is one of the first studies to examine the perspectives of overseas born DCWs in residential aged care sector. It sheds light on variations in the perceptions and employment intentions of different groups of DCWs (e.g. nurses vs. nursing assistants; overseas born DCWs vs. others) in a multicultural environment. Findings from this study may inform the development of policies and programs to improve retention of different groups of DCWs - a key issue for the residential aged care industry.

7.2. Background

The residential aged care system in Australia delivers long-term care services for eligible older Australians in residential facilities located in major cities and regional and remote areas. National assessment teams assess the eligibility of older people based on inability to meet care needs at home (Department of Health and Ageing, 2009). At the time when this research was conducted, older people were assessed as requiring a low level of daily assistance (i.e. accommodation, personal and social care, and domestic assistance) or a high level of care (i.e. intensive nursing services in addition to daily assistance) (Howe, 2009; Marshall & Mackenzie, 2008). Most permanent residents (76%) require high level care and 52% have dementia (Australian Institute of Health and Welfare, 2013). Funding for these services comes from both government and means-tested user contributions (Department of Health and Ageing, 2012). The residential aged care facilities are owned and run by not-for-profit, private for-profit and government organizations (Productivity Commission, 2011). To accommodate the special needs of older people from culturally and linguistically diverse backgrounds, 25.5% of facilities specialize in delivering care for older adults from a particular cultural or ethnic group (King et al., 2012).

By 2047, about 25% of Australians will be aged 65 and older, with the age cohort of 85 and older rising from less than 2% of the population in 2012 to more than 5%, suggesting that there will be a rapid rise in people with high dependency needs (Department of Health and Ageing, 2012). Given the population trend, the demand for DCWs is expected to about triple by 2050 (Colombo et al., 2011). However, the residential aged care industry is experiencing high turnover of DCWs (Colombo et al., 2011).

To compensate for the current shortage of DCWs and to meet the special needs of residents from culturally and linguistically diverse backgrounds, the attraction and retention of overseas born DCWs is a policy imperative of the Australian Government (Productivity Commission, 2011). In 2012, the number of overseas born DCWs occupied about 23% of the total DCW workforce in Australia (King et al., 2012). Similarly, in European countries and the US, there is a high representation of non-native born DCWs in the residential aged care industry, where they are playing an increasingly important role (Anderson, 2012; Martin et al., 2009). While some research (e.g. Walsh & O'Shea, 2010) identified overseas born DCWs as a concern for providing quality care for residential aged care residents due to language and communication barriers, others have reported that overseas born DCWs have applied their language capacity and cultural knowledge to provide optimal care for residents from culturally and linguistically diverse backgrounds (Richardson & Martin, 2004). There is a need to understand overseas born DCWs' perspectives on the rewards and challenges associated with delivering quality care. However, little research has

explored the perceptions and employment intentions of this group, especially in the Australian context.

Direct care workers are numerically the foundation of the aged care workforce (King et al., 2012). Nurses have comprehensive responsibilities, including supervising nursing assistants, management of residential aged care facilities, providing assessments of residents, producing documentation, communication with residents' families, assisting doctors with residents' health care, and offering skilled nursing care (Gao et al., 2014). In contrast, the nursing assistants' job involves more physical work, and is mainly comprised of personal care, social care and domestic assistance for residents. Nursing assistants are generally unskilled or semi-skilled workers. The nursing assistants' role is crucial in providing quality care, though most Australian and international studies about perceptions and employment intentions of DCWs to date have focused on residential aged care nurses. Given the different work tasks, findings regarding residential aged care nurses cannot be used to inform policies and practice for nursing assistants, particularly on how their perceptions and employment intentions differ from those of nurses.

To reduce the turnover of DCWs, issues such as the nature of care work, employment characteristics, organizational resources, and meanings of care work have gained attention in the research literature (Castle & Engberg, 2006; Manthorpe, 2014; Tuckett, Parker, et al., 2009; Twigg, 2011). Previous research has characterized care work as body work, dirty work (Twigg, 2011; Wellin & Jaffe, 2004), and emotional work (Fillion et al., 2007; Fjær & Vabø, 2013), all bringing challenges to staff. The employment characteristics and organizational resources of residential aged care work feature low remuneration, an undesirable working environment, heavy workload, poor career pathway, and limited professional development opportunities (Castle, Degenholtz, & Rosen, 2006; DeForge, van Wyk, Hall, & Salmoni, 2011; Rigby & O'Connor, 2012; Tuckett, Parker, et al., 2009). Care work is also socially undervalued (Holroyd et al., 2009). Such limitations were found to be associated with high turnover of DCWs in the US (Castle & Engberg, 2006), in the UK (Perry, Carpenter, Challis, & Hope, 2003; Rigby & O'Connor, 2012), in Canada (Mallidou, Cummings, Schalm, & Estabrooks, 2013; McGilton et al., 2014), and in Australia (Chenoweth et al., 2010).

Arguably, while DCWs may recognise these limitations of care work, they remain working in residential aged care, suggesting that certain attractors might outweigh the limitations (McGilton et al., 2014). The positive aspects of residential aged care work are understudied (Productivity Commission, 2011). It is important to explore both the rewarding and difficult aspects of residential aged care work, and how these contribute to DCWs' employment intentions. A qualitative study is appropriate to ascertain how workers put various factors together in making decisions about their future employment intentions, and to explore the views of those who are unlikely to respond to surveys because of English literacy limitations.

7.3. The Study

7.3.1. Aim

The aim of this research was to understand individual DCWs' perceptions of the rewards and difficulties of residential aged care work, how these were related to their employment intentions, and how these varied between nurses and nursing assistants, and the cultural diversity of workers.

7.3.2. Design

This paper is part of a large mixed-methods sequential study exploring turnover and employment intentions of DCWs in the Australian residential aged care sector. Using the existing Nurses and Midwives e-cohort Study data (NMeS: Turner et al., 2009), the quantitative research tested predictive models of turnover of residential aged care nurses (Gao et al., 2014). Given that the variables relating to cultural and linguistic background, citizenship and immigration status in the NMeS data set had substantial missing responses, Studies 1 and 2 were unable to distinguish overseas born nurses from native born nurses. The quantitative results demonstrated that there is a need to provide comprehensive descriptions of job demands and organizational resources specific to DCWs, to explore those aspects of the work which may affect DCWs' employment outcomes (i.e. turnover or intentions to stay or leave aged care), to investigate how cultural diversity affects nurses' employment outcomes, and to understand how workers consider these aspects as a whole in their decision making process of staying or leaving aged care. Understanding these issues in more depth may assist in understanding a finding from the prior quantitative research -why job demands were not significantly related to nurses' employment outcomes. It is also unclear whether the factors identified in the quantitative analysis of the nurse sample are transferable to the nursing assistants. Findings from the quantitative research helped to develop an interview guide and to conceptualise the purposive sampling strategy for the qualitative study. Therefore, this qualitative study sought to understand the influence of cultural diversity within staff and the views of both nursing assistants and nurses through an in-depth investigation of staff in one facility with high levels of cultural diversity in staff and residents. The study was conducted, using a descriptive method with interviews and thematic analysis (Braun & Clarke, 2006). This paper reports key findings from the qualitative study.

7.3.3. Participants

Participants were recruited from a well-established non-profit residential aged care facility located in an urban area of Queensland, Australia. It is a typical residential aged care facility in Australia in terms of its skill mix of staff (nurses, 40% and nursing assistants, 60%), and size and service provided (60 high-care beds and dementia-specific services). It is atypical in cultural diversity (the staff and residents were from about 55 linguistic backgrounds) and some specific resources to support overseas born DCWs. Given that the facility had a wide range of nurses and nursing assistants from diverse cultural backgrounds, data obtained from this facility could generate rich information by within and across group comparisons, and illuminate some of our earlier quantitative findings. Therefore, it was included as a critical case rather than a typical case (Patton, 2014). Importantly, the manager of this facility welcomed researchers which suggested that staff might be willing to talk openly with the researcher. The first author is bilingual in Chinese and English, and shares a similar cultural background with a number of participants from Asia. This made it possible to approach some overseas born DCWs who might normally be unwilling to participate in research.

A purposive sample of DCWs were recruited from the above facility. The sample was limited to permanent full-time or part-time nursing assistants and nurses who had Australian citizenship or permanent residency as citizenship and residency status affect workers' employment intentions (Shutes, 2012). Those who did not have either Australian citizenship or permanent residency, casual nursing assistants and nurses, allied health professionals, and non-direct care workers, such as kitchen staff, were excluded from this study.

Although 19 DCWs responded to the recruitment flyer, three did not meet the inclusion criteria, as they were casual nursing assistants. Consequently, the sample comprised 16 participants (ten nursing assistants and six nurses) which reflected the proportions of nursing assistants and nurses who met inclusion criteria at the facility, and was similar to the proportions of nursing assistants and nurses in Australian residential aged care facilities (Martin & King, 2008). As overseas born DCWs were one focus of this study, they were over-represented, occupying 56.3% of the sample. None of the overseas born nursing assistant participants worked as regulated workers (i.e. registered or enrolled nurses) in their country of origin. Table 7.1 summarises the characteristics of participants.

Table 7.1. Characteristics of participants (N=16)

Characteristics	Occupation				Total	
	nursing assistants		nurse			
	n	%	n	%	n	%
Gender						
female	8	80.0%	3	50.0%	11	68.8%
male	2	20.0%	3	50.0%	5	31.3%
Age						
25-34	3	30.0%	1	16.7%	4	25.0%
35-44	2	20.0%	1	16.7%	3	18.8%
45-54	1	10.0%	3	50.0%	4	25.0%
55-65	4	40.0%	1	16.7%	5	31.3%
Employment basis						
full-time	2	20.0%	3	50.0%	5	31.3%
part-time	8	80.0%	3	50.0%	11	68.8%
Are you overseas born						
no	4	40.0%	3	50.0%	7	43.8%
yes	6	60.0%	3	50.0%	9	56.3%
Overseas born participants' length of time in Australia						
less than 5 years	2	33.3%	0	0	2	22.2%
more than 5 years	4	66.7%	3	100.0%	7	77.8%
Length of time at the facility						
less than 1 year	3	30.0%	0	0	3	18.8%
1 to 5 years	4	40.0%	4	66.7%	8	50.0%
6 or more years	3	30.0%	2	33.3%	5	31.3%
Intentions to stay or leave						
stay	7	70.0%	4	66.7%	11	68.8%
leave	3	30.0%	2	33.3%	5	31.3%
Total	10	100.0%	6	100.0%	16	100.0%

7.3.4. Data collection

Data were collected between June and September 2013 through face-to-face individual semi-structured interviews. Our earlier quantitative research found that turnover might be a direct consequence of insufficient job resources related to employment characteristics and organizational resources, and both low job resources and high job demands might be related to poor psychological health among residential aged care nurses (Gao et al., 2014). Informed by these findings, an

interview guide (Table 7.2) was developed to direct the semi-structured interviews. In the interview guide, "what does your typical day look like' was an additional question. This question was only asked when the participants were willing to spend more time to talk about their experiences with the researcher. The purpose of asking this open question was to encourage the participants to freely talk about their job. Additional probes that further explored the points participants were making were also used. Interviews were conducted at the places suggested by the participants, and lasted between 23 and 47 minutes, given that busy DCWs were not able to spare more time. All interviews were audio recorded and those in English were professionally transcribed verbatim. The interviews with three Chinese born DCWs were conducted in Mandarin Chinese, then underwent a process of transcribing in Chinese verbatim, then translating into English, and finally translating back to Chinese to check translation accuracy (Birbili, 2000) .

Table 7.2. Interview Guide

Domains	Questions
Rewarding features	What is the most rewarding aspect of your job or the best part of your job? *Probes:* Why is that important to you? Is it the reason that keeps you here? Apart from the best part of your job, what else would keep you here? Do you think other people think like that?
Difficult aspects	What is the most difficult part of your job?How do you manage this? *Probes:* Is it the reason that would make you leave? Apart from this, what else would make you leave? Do you think other people think like that?
Attraction	What brought you to this job? If you have to sell your job to somebody else, what would you say to encourage them to work in aged care? What makes it so difficult to attract more workers to work in aged care?
Retention	Do you intend to stay in this facility in the future? How do you see yourself in five years time? Are you going to work in aged care until retirement? Could you please tell me three things that the organization can do in order to encourage workers to stay?
Additional question	What does your typical day look like?

7.3.5. Ethical considerations

This study was approved by the University of Queensland Behavioural & Social Sciences Ethical Review Committee (No. 2013000721). Gatekeeper approval was obtained from the General Manager of the facility. Prior to the interviews, informed consent was sought from each participant. To respect participants' privacy and encourage free talk, participants were able to contact the researcher directly to express interest in participation and to select the venue for an interview. The confidentiality of the information was protected at all times.

7.3.6. Data analysis

Thematic analysis was employed to code the data, group the responses, capture themes, and assign higher-order labels (Braun & Clarke, 2006). Similarities and differences between groups were explored using the method of constant comparison (Glaser & Strauss, 1967). Repetitions within the data were noted, suggesting that the data reached saturation (Creswell & Plano Clark, 2011). The consistency of the data indicated sufficient information had been obtained from this facility.

7.3.7. Rigour

Although not an ethnographic study, the first author spent over 30 days in the facility to become familiar with the routines and known to staff. Staff were able to indicate interest in participating in the research independent from senior staff or management. Interviews were semi-structured with probes to ensure a focus on the topics of interest and the opportunity to include additional comments. The first author completed repeated readings of the transcripts, and coded the interviews. Themes were extracted from the coded segments. The second and third authors independently reviewed several transcripts, and checked the accuracy of the coding categories. All authors reviewed the preliminary codes and related verbatim texts, regularly discussed the coding segments, themes, and interrelationships between coding categories, and the assignment of higher-order labels. Through co-researcher discussions of the paper, differences in interpretation were resolved. This often involved agreeing on higher order categories. To further support rigour in coding, as part of the constant comparison, each theme was examined for cases and comments that did not fit and this has been reported. To clarify any personal bias that may impact on the

interpretation of data, a diary was used by the first author (interviewer) to document assumptions made, and these assumptions were discussed among all authors to ensure the findings were supported by the data (Creswell, 2009). Trustworthiness of the data collection and analysis was enhanced by a peer debriefing, a negative case analysis and an audit trail (Padgett, 1998).

7.4.   Results

Seven nursing assistants and four nurses intended to stay in their facility, three nursing assistants indicated that their job was a stepping stone to other non-aged care employment, and two nurses reported an intention to leave aged care. DCWs' employment intentions were found to be related to their perceptions and management of rewards and difficulties of care work in four major domains: nature of care work, employment characteristics, organizational resources, and meaning of care work. Although reported separately here, DCWs' views in one domain impacted on their views on the other three domains. Perceptions of the positives and negatives of each domain varied between nursing assistants and nurses, and differed between overseas born and locally born DCWs.

7.4.1. Nature of care work

All participants reported the demanding nature of care work, with nursing assistants focusing more on physical demands, and nurses emphasizing psychological demands. These demands were identified as both positives and challenges. The fit between job demands and an individual's personality, ability, and expectations, affected their employment intentions.

All nursing assistants stressed the high and consistent physical demands to keep up with the pace of work, and to have the strength and skill to move residents and machines:

> *It can be very physically busy. We have to change their pads all the time and wipe them. It's smelly and it's quick. So that's always what I like the least...We have to keep pulling machines out...Your body and neck, you feel it. (Nursing assistant 6)*

However, some nursing assistants perceived the physical demands as a reward:

> *I like the physicalness of the job. I don't like sitting for long periods. I love that rush. It doesn't faze me. (Nursing assistant 10)*

Compared with nursing assistants, all nurses reported that the breadth of their responsibility was psychologically demanding:

In aged care, there's a lot more responsibility and assessments that you have to do...Many things come up which is not related to medical. You need to manage all of them. It is stressful. (Nurse 2)

One floor, 14 residents. If one or two of them are sick, you will become very busy; sometime, feel very tired and feel incapable to handle it. The stress comes from all areas, all waiting for your solutions. (Nurse 6)

This responsibility, however, was perceived as a positive of residential aged care work by several nurses:

I quite like the variety of the job. I don't think I want to go back into mainstream nursing. (Nurse 5)

In terms of psychological demands, all participants reported challenges associated with coping with grief and loss. Nursing assistants reported their own sense of loss when residents deteriorated or died. In comparison, nurses tended to attribute emotional stress to informing residents' families of the sad news:

(The most difficult part of my job is) the grieving. When you lose people that you looked after for years and years that really hurt. (Nursing assistant 3)

You are with family who are very emotional about their loved ones. You have to reassure them, make them feel better but there is nobody who's actually reassuring you back. So eventually it builds up as a mental stress for you. (Nurse 1)

Participants' perceptions of the nature of care work intersected with their personality, ability, and expectations to influence their intentions to stay or leave aged care. For example, some nursing assistants pointed out that they were attracted to aged care because the intensive labour nature of the work fitted their personality and expectations. Some nurses reported that they were able to manage the responsibility of aged care nursing; it increased their sense of achievement, thus, retaining them

in aged care. In contrast, several overseas born nursing assistants stated that they were satisfied with the nursing assistant job because the level of responsibility involved suited their perceived abilities.

7.4.2. Employment characteristics

Participants' perceptions of the nature of care work were influenced by the characteristics of their employment. These included the level of remuneration in relation to the nature of the work, the work schedules as either facilitating or hindering work life balance, and the management of cultural diversity. Overseas born DCWs were generally identified as valuable colleagues in this facility.

All participants, except one nurse, evaluated their remuneration as low. Nurses compared their salaries with their hospital peers, while nursing assistants compared theirs with other unskilled jobs. When the nature of care work was taken into consideration, remuneration in other work arenas was seen to be considerably higher than the DCWs' salaries:

The wages are terrible for nursing assistants. If I was just packing shelves in supermarket, you're just looking at putting items in the right place. Whereas here you're dealing with people's lives, their emotions, their health, their wellbeing, the whole lot. (Nurse 5)

Despite the disparity in remuneration, some participants stated that many non-cash benefits of residential aged care work outweighed the impact of low wages, thus, facilitating attraction and retention of DCWs:

There are many people that still want to do this, even though the money is really poor. We're still here, because we get a lot back from it. (Nursing assistant 10)

One of the positives identified by most participants was the flexibility of shift work. It provided opportunities for some to attend studies to enhance qualifications, and helped others save commuting time to workplace by avoiding traffic. For DCWs, especially women with children, the shift work arrangements helped them meet family responsibility:

For 10 years of my nursing, I worked at night, so that I could look after my children as well and be there when they came home from school. (Nursing assistant 10, female)

However, the participants with shorter tenure at the facility expressed their frustration with not getting preferred shifts. The shift work at unwanted hours led to difficulties when it affected sleeping patterns, disturbed daily routine, and cut down time with families:

> *If you are working different hours, it disturbs your sleep pattern...If your wife works Monday to Friday in the morning, and then she comes back in the evening, that is when you are going back to work. So you don't see her, you don't feel your children. (Nurse 1)*

The multicultural working environment was generally viewed as a positive aspect of the work. Most informants, especially overseas born DCWs, reported that they enjoyed the multicultural environment. However, cultural diversity could create difficulties in communication and hence in relationships with residents and other staff:

> *I told him (a resident) that it was not good to add too much honey in his meal because it would raise his blood sugar. But, he felt that I didn't allow him to eat (honey). Thereafter, he didn't allow me to assist him. That was cultural difference. In our culture, it is thoughtful to say something like this. (Nursing assistant 1, overseas born)*

All nine overseas born participants reported that English communication was the most challenging part of their job. The English native speaker workers also expressed communication difficulties with their non-native speaker colleagues:

> *Sometime, I don't understand what the residents are saying. (Nursing assistant 2, overseas born)*

> *If they (non- native English speakers) speak quickly, I have no idea what they asked me and I'm in trouble. (Nursing assistant 8, Australian born)*

Despite the communication problems, some locally born DCWs noted that once the overseas born DCWs were familiar with the routine, they were able to provide quality care, and were good colleagues to work with:

> *I find that foreign ones are very good. Once they know the job well, they're very quick but they're very efficient...I actually prefer it (to work with overseas born workers). Because I do think they've got a high standard work ethic. (Nursing assistant 3, Australian born)*

The limitation of low wages was found to be unrelated to DCWs' employment intentions. When the other aspects of employment characteristics satisfied the essential needs of DCWs, they were prone to remain. For instance, some participants reported that the flexible work schedule and convenient location of their workplace attracted and retained them. Some overseas born DCWs expressed intentions to stay in the facility because of cultural awareness of the management: *"This is a multicultural community. People understand different culture. It is easy for migrant workers. (Nursing assistant 9, overseas born)"*. The next section further explores the match between organizational resources and individual needs.

7.4.3. Organizational resources

All participants identified that staff retention was related to availability of organizational resources, including supervisor support, co-worker interaction, opportunities for personal development, physical amenity, and staffing levels. Individual DCWs expressed different needs for organizational resources. The levels of organizational support intersected with individuals' coping strategies of stress to affect their employment intentions. Importantly, nursing assistants identified that care work was not a menial job, and that it enhanced their professional and personal development.

Most nursing assistants and nurses noted that supportive management helped to relieve their job stress, and encouraged them to stay in the facility:

> *She (the general manager) always makes us feel that we are a team... Nobody is more important than the other... it's important that we can cope with our job. Otherwise, you have injuries; you have a lot of sickies that kind of thing happens. Here, we don't have a lot. (Nursing assistant 10)*

Supervisor support was particularly helpful for new workers for whom getting started is a difficult time:

> *When I just entered aged care, I felt it was stressful, because you don't know routine. I lost two kilogram. There was a senior staff member who provided on-the-job support. One month later, I can manage very well. (Nursing assistant 2)*

Some nursing assistants and nurses identified that the good relationships among co-workers increased their job satisfaction:

(The most rewarding parts of my job) Firstly is the resident... Secondly is the colleague... If you work with a good colleague, you're happy too. (Nursing assistant 7)

However, like many other workplaces, there were some tensions between colleagues. These tensions were attributed to different views about work ethics and conflicting working styles, especially between long-term workers and new workers:

We often have people saying - working with another staff member, she's too slow or he's too slow... You sometimes find the person that's a bit slower is the person that's doing the job very well... Sometimes people who have been in the industry for a long time are resistive to any changes. When new staff come in with new ideas, they feel a bit a threatened. (Nurse 5)

In terms of opportunities for personal development, most nursing assistants and nurses noted that their workplace offered on-going training and educational opportunities to develop their competence and skill sets. This helped them to meet the challenges associated with care work, and increased their job satisfaction:

I get access to a lot of education. I was privileged to be able to go on a study tour. I was sponsored to go to a wound care conference. It's continual. The actual provision for ongoing education is very good here. (Nurse 5)

For overseas born DCWs, English language support from the organization was described as a particularly useful resource which retained them in the facility:

We have an English teacher on site. That helps to keep migrants. (Nursing assistant 9, overseas born)

Furthermore, nurses and nursing assistants viewed caring for residents as facilitating personal development:

Talking to the residents and caring for them, it's an education for us. You learn about culture. You learn a lot about respect. (Nurse 3)

I'm doing nursing at the moment and in regards to any information that we're given (in the class) I can understand it a lot better than other people. That was the whole reason I did this was to gain that experience while I was studying. When I do finish my nursing and want to become a nurse that having this experience will be a lot more attractive on a resume. (Nursing assistant 5)

Job opportunities available in nursing motivated some nursing assistants to undertake further nursing courses. Through care work, they gained practical knowledge and experiences in nursing, attributes sought after in the health care industry. All three nursing assistants who intended to leave aged care were undertaking nursing courses, and perceived their personal care job as a valuable stepping stone for their future nursing career. They were all under 30 years old. Some participants stated that younger nursing assistants were more likely to leave for career advancement than older nursing assistants:

We have quite a few that started as nursing assistants, young, and then slowly studied more and more as they could afford. They will move along and move on. There's probably not as many of me at my age, in my fifties that stay for a long time. I prefer stability in a job or in a workplace. (Nursing assistant 10)

Two of the three nursing assistants who intended to leave were overseas born workers. Aged care offered them opportunities to enter the local job market and improve their access to other employment:

Once they (overseas born DCWs) speak the language a bit more, then they really are - can choose and can apply for things that they want to do. (Nursing assistant 3, Australian born)

Compared with nursing assistants, two nurses who intended to leave stated that career progress was difficult in aged care:

This facility is a very small facility, which means there's very limited opportunity for you to go up. If you are a registered nurse and you want to move forward then it's going to be really hard because there's only one manager. So you have to probably look for something else or probably changing careers if you want to do that. (Nurse 1)

The nursing assistants with an intention to leave stated that after completion of their nursing courses, they preferred acute care rather than aged care, because aged care was understaffed which increased job stress:

In a hospital, you can have a lot of people surrounding you, helping you. It's quite hard to work in aged care because normally you just have two RNs (registered nurses) in a shift. When you want to contact doctor you need to call them and maybe they not come here straight away. You need to wait until weekends or a few days later. It is more stressful in aged care. (Nursing assistant 9)

(In aged care), you're limited as to what support you get. Whereas if you were in an acute hospital, you would likely have other people working beside you; so you've got a lot more background support. (Nurse 4)

Organizational resources such as physical amenity and staffing levels were reported by some to impact on the provision of quality care:

If we enlarge the balconies, if we have more staff, if we have more resources, I will be more satisfied with my job... (Nursing assistant 1)

Participants who reported they were able to manage stress tended to express intentions to stay. Some participants reported that when they experienced challenging situations, they would seek support from their supervisors and/or co-workers, discuss the problems in the staff meetings, and/or utilize the learning from seminars to manage stress:

Even though I know I'm very busy, I can still make 10 minutes with somebody without feeling that overwhelming pressure to get back into routine or say if somebody gets sick, I have to send them to the hospital or the doctor comes. I just cope with that. I'm reasonably happy with my job. I would tend to stay at the same place, if I'm happy there. (Nurse 4)

However, some informants did not feel comfortable to talk to their supervisors and co-workers about their stress. This stress they linked to their intention to leave:

Sometimes, (I) feel very tired and feel incapable to handle it. I am not comfortable to talk to my supervisor. Often time, your boss will think you are incompetent. It is very difficult to work in aged care for a long time. (Nurse 6)

DCWs' employment intentions depended on whether the organizational resources met their essential needs, and these varied between nurses and nursing assistants and between locally born and overseas born workers. Nurses and younger nursing assistants had a stronger desire to enhance personal development, while older nursing assistants preferred stability in a workplace. The nurses' intentions to leave aged care were related to their unmet needs of career advancement and coping with job stress. In comparison, the nursing assistants' intentions to leave aged care were linked to limited resources and inadequate staffing levels in aged care. The overseas born DCWs' intentions to stay seemed to be related to English language support from the organization and the meaningful nature of aged care work.

7.4.4. Meaning of care work

Taking all these factors into account, most participants perceived their job as worthwhile. The perceived rewards and challenges created meaning for them in their care work. These included building meaningful relationships with residents and their families, reciprocity, and a sense of helping others. Expectations associated with the establishment of relationships with the residents and their families, along with loss of the relationships, presented different challenges for nurses and nursing assistants. The meaning of care work to individuals might turn challenges into rewards. Seeing their jobs as meaningful was a shared perception for DCWs who intended to stay.

All nursing assistants reported enjoying long-term relationships with residents, while all nurses identified getting to know residents' families as rewarding. Attachment to the residents was most likely to be expressed by workers with long-term tenure in the facility and by overseas born DCWs with fewer family members in Australia. Participants also noted challenges associated with some established relationships with residents. Reflecting on their work tasks, nursing assistants more commonly reported struggling to meet the challenging and changing needs of residents, while nurses focused on the stresses arising from contact with residents' families when there was limited understanding of the ageing process, and/or when family members lacked trust in the facility's ability to manage some medical problems:

You look after someone for years... It really become like a family...But, you also have to tolerate their (residents') bad temper...Residents can be demanding and need everything then and there. (Nursing assistant 7)

In terms of building relationships, (aged care) it's rewarding.... (However,) it is challenging to deal with family that are not understanding or who change their mind...because they do not accept that the person is old and sick. (Nurse 4)

Participants, especially overseas born DCWs, consistently highlighted that what motivated them to stay in the job was having long-term relationships with residents, and a sense of family associated with caring for residents:

I will stay I think if I can. I don't want to retire unless I'm dead. I feel very happy every day. I can see papa, mamma. (Nursing assistant 6, overseas born)

Reciprocity was another intrinsic meaning that some overseas born nursing assistants and nurses attached to their job. They reported a sense of mutual support as other people also looked after their parents or grandparents:

You look at your residents and you think of your parents and your grandparents. You think of what you do for them somehow they get it from someone else. It's a good feeling. (Nurse 2, overseas born)

However, reciprocity was not the only explanation. Some Asian workers explained their commitment to care work by karma (cause and effect)[10]. They believed that helping older adults would accumulate blessings in the future. In comparison, several workers from Africa and Europe perceived caring for older adults as a form of intergenerational benevolence and investment in future wellness - they were helping older people now, and when they grew old, some younger people would help them. Karma and intergenerational benevolence convinced the overseas born workers to devote to care work and helped them reduce job stress:

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[10] Karma (cause and effect) is a causation belief in Buddhism, Hinduism and Jainism (Roof & Juergensmeyer, 2011). The essential meaning of karma is that good intents and actions will result in fortunate and happy life in the future, and bad intents and actions will lead to difficult future life. If the consequences do not happen straight away, they may even appear across lives (Roof & Juergensmeyer, 2011).

It is a difficult job. But, I don't feel stressed. I believe in karma. If you look after the residents with 100 percent of effort, you will get returned when you are old. (Nursing assistant 1, overseas born)

It's their time to look after them. One day, it will be my time too. So, that's the only thing that's taken me to stay in this job... It's all about from your heart. (Nursing assistant 6, overseas born)

Compared with the overseas born DCWs, the locally born nursing assistants and nurses reported that a sense of helping others provided meaning in their care work, and made other issues less relevant:

I thought I'd be uncomfortable the first time I had to shower people. But I'm surprised how natural it was. It was because they're so frail, your more caring side comes out than embarrass. It overrides any of the difficult days. (Nursing assistant 8, Australian born)

Most nurses and nursing assistants reported that they felt valued when the importance of care work was recognized and acknowledged by residents and their families, colleagues, and visitors. Being valued eliminated all the difficulties, as it made them experience a sense of achievement, and built their confidence in doing the job:

I don't do it just to be thanked. It's my own feedback mechanism... At the end of the day, it doesn't matter what the day has been like and tired whatever, I feel that I have achieved something. (Nurse 4)

Being valued and a sense of helping others counterbalanced DCWs' perceptions of difficulties, and might even turn difficulties into rewards, when nurses and nursing assistants were able to meet the challenges in day to day work:

I feel satisfaction from being able to rectify a situation or solve a problem for somebody. In aged care, the people tend to appreciate what you're doing a bit more. It's a good feeling that you're helping and supporting them. (Nurse 3)

Being valued, a sense of helping others, and feeling proud to be in a nursing job motivated some nurses and nursing assistants to work in aged care:

> *You are caring for someone in their life, in their day-to-day needs. So if you wanted a job that was fulfilling in any way I feel like this would be it...Whatever we do for them, my pleasure is the fact that they appreciate. I get great pride in looking after them to the best of my capability. (Nursing assistant 4)*

> *I feel proud to wear my nurse watch. I think that's what would keep me, is just feeling pride for nurses. That gives you the pride to stay in this job even if you don't like the job. (Nurse 2)*

Nurses and nursing assistants reported both being greatly appreciated by residents and their families and being devalued by the general public. For most DCWs, a strong sense of undertaking a meaningful job buffered the influences of low recognition by the society. Evaluating their jobs as meaningful was associated with workers' intentions to stay:

> *People don't understand the value of your job. Recognition is one. Wages second. The sense of not being worth much, but because I feel so strongly about my job, those things don't worry. I really enjoy what I do. That joy of seeing that we've done the right thing, it's a genuine, real rapport that you have with helping people. I think you either have it or you don't. If you don't have it, they don't stay long. (Nursing assistant 10)*

Some nursing assistants perceived being devalued by the society as a limitation, and this led to their intentions to leave aged care job:

> *People from outside see Assistants in Nursing in a very low way. We don't have the worth in society that we should have. (Nursing assistant 4)*

> *When I do finish my nursing I see myself hopefully may have a job in a hospital. I want to be working in something much higher up. I think most people would go for - if they were going to be in any sort of nursing field it would be registered nursing or specifying a particular field. (Nursing assistant 5)*

Generally speaking, the perceived meaning of care work was the most important dimension associated with DCWs' employment intentions. When DCWs felt valued, and when they were able

to meet the challenges in day to day work, difficulties might become rewards. For each participant, balancing up the four dimensions contributed to their overall views on whether they would stay or leave aged care. Informants viewed the nature of care work in terms of the fit with their personality, ability and expectations as rewards, and excessive job demands as difficulties. Participants perceived the employment characteristics and organizational resources that accommodated their essential needs as rewards, and those that impeded their essential needs as limitations.

7.5. Discussion

This study found that individual DCWs' perceptions of the rewarding aspects of care work, moderated by their personality, ability, expectations, and essential needs, served to counterbalance the challenges of care work, and promoted their intentions to stay. By soliciting the perspectives from two groups of DCWs, the current study fills a gap in existing literature on DCW employment intentions which has predominately focused on nurses without distinction between locally and overseas born workers. The DCW workforce is not only comprised of those who intended to stay and those who intended to leave, but also those who never intended to stay over the long term. Nursing assistants and nurses, overseas born and locally born nursing assistants and nurses, and nursing assistants and nurses with different employment intentions, form heterogeneous groups requiring individually tailored strategies to improve their job satisfaction and retention.

Findings from this research provided valuable insights into how the meaning of care work is perceived differently by DCWs from diverse cultural backgrounds. Consistent with previous research, the locally born DCWs perceived care work was meaningful as it created a sense of helping others, and this helped them tolerate the demanding nature of care work (Chenoweth et al., 2014). Uniquely, it was found that overseas born DCWs attached special meaning to care work, including reciprocity, religious beliefs (e.g. karma), and intergenerational benevolence. These might not be the original motivations for the overseas born workers to choose care work. However, these attached meanings could alleviate the limitations of care work, thus, enhancing overseas born DCWs' willingness to provide quality care and motivating them to continue in the job. These findings may assist aged care policy makers and service providers to introduce tailored interventions to help overseas born DCWs to cope with job stress and retain them in aged care. Moreover, future research may use these findings to develop hypotheses to test the relationships between religious beliefs, employment intentions, and quality of care. Further in depth qualitative work is needed to further understand cultural differences in the meaning of care work.

Compared with their locally born peers, overseas born DCWs appeared to have less ability to achieve their goals because insufficient English proficiency might limit their confidence to

pursue a job that perhaps better fits their personality, and better meets their expectations and needs. Language and communication issues have been reported as a barrier to overseas born DCWs delivering quality care in residential aged care (Walsh & O'Shea, 2010). However, our findings demonstrated that overseas born DCWs were able to provide optimal care with English language support. They were keen to build long-term good relationships with residents and their families. They were identified as good colleagues to work with. These suggest that overseas born DCWs are valuable resources in residential aged care facility rather than a limitation, but they do require organizational support.

Overseas born DCWs' intention to stay seemed to be linked to cultural awareness of the management, English language support, a sense of family, and appropriate job responsibility. Although provision of language classes was highly valued by overseas born workers, this was an initiative of management of this particular facility. Such initiatives are not generally funded nor promoted through usual government funding arrangements. Aged care policy makers and service providers might consider using findings from the current study to promote cultural awareness and to address communication barriers, not only for residents but for a diverse workforce. Additionally, supporting overseas born DCWs progressing to management roles may facilitate retention of a multicultural workforce (Aged and Community Services Australia, 2015).

Individual DCW's personality, ability, expectations, and essential needs appeared to play important roles in their decision making process of either remaining or leaving aged care. For example, nurses and younger nursing assistants tended to focus more on their personal growth than did older nursing assistants. Personal needs, such as flexible work arrangements, seemed important to older nursing assistants and female nursing assistants. New workers required more support, as starting a new job was a stressful time. This is in line with previous research that has identified the first year as an essential period to retain new nurses (Rhéaume, Clément, & LeBel, 2011). Aged care providers should offer extensive supervisor support and training for new DCWs.

Compared with the older nursing assistants who preferred stable employment in aged care, three younger nursing assistants never intended to stay in aged care for the long term, because of the perceived difficulties of aged care work, including its low social status and limited resources. These younger nursing assistants were undertaking nursing courses with an intention to pursue a job in acute care. However, the supply of graduate nurses temporarily exceeds the demands in Australian acute care sector (Aged and Community Services Australia, 2015). Aged care providers may consider attracting and retaining student nurses and new graduate nurses by offering career advancement and professional development opportunities, by supporting them undertaking tertiary Masters level education in aged care, and by providing them with rewarding experiences in aged care (Aged and Community Services Australia, 2015; Productivity Commission, 2011).

Moreover, it was noted that DCWs with an intention to stay were able to acquire resources to cope with difficulties, which is in line with the findings of our complementary quantitative research that inadequate coping resources might be related to staff turnover (Gao et al., 2014). This highlights the need to identify coping resources at an individual and organisational level for different groups of DCWs.

Job stress for nurses were more related to psychological demands, but for nursing assistants were more associated with physical demands. High levels of psychological demands (e.g. huge responsibility) and intensive physical work were evaluated by some nurses and nursing assistants respectively as positives. An interesting finding was that when DCWs were able to resolve the difficulties, difficulties might turn into rewards. These findings regarding job demands perhaps explain our previous finding that high levels of job demands were not significantly related to staff turnover (Gao et al., 2014). Future research might consider exploring how to help DCWs turn challenges into rewards.

This study found that the perception of being in a meaningful job was the most important attractor that retained DCWs. Building relationships was perceived as a rewarding feature of residential aged care work. Low wages were not related to employment intentions. Some non-cash benefits, such as flexible work arrangements, outweighed the limitations of low wages. These findings were consistent with previous studies (e.g. Ball, Lepore, Perkins, Hollingsworth, & Sweatman, 2009; Chenoweth et al., 2014; Manthorpe, 2014). Difficulties of residential aged care work included low remuneration, poor physical amenity, inadequate resources, insufficient staffing levels, and undesirable career pathways. Findings from previous residential aged care workforce research conducted in the US (Castle et al., 2006; Castle & Engberg, 2006), the UK (Perry et al., 2003; Rigby & O'Connor, 2012), and Canada (Banerjee, Armstrong, Daly, Armstrong, & Braedley, 2015; Mallidou et al., 2013; McGilton et al., 2014) indicated that these difficulties were not limited to residential aged care nurses and nursing assistants working in Australia. Therefore, findings from this Australian study might be valuable for other developed counties.

7.6. Limitations

This research has several limitations. First, the data were only collected from one residential aged care facility. Although facility variations may exist, the organization involved in this study was a critical case as a residential aged care facility with a wide range of nurses and nursing assistants from different cultural backgrounds. It is, therefore, meaningful to collect the data from this residential aged care facility. Second, participants were recruited from a facility well-regarded by the residents and their families. Given that supportive management is related to high job

satisfaction among DCWs (Bishop, Squillace, Meagher, Anderson, & Wiener, 2009; Choi et al., 2012), findings from this research might be more positive than would be the case if respondents from a poorly managed facility were also sampled. Future research should investigate perceptions of DCWs from residential aged care facilities with high turnover rates. Third, the interviews were limited to the perceptions of DCWs at one point in time, with an examination of workers' intentions to leave or stay. To provide a more accurate picture of DCW turnover, longitudinal research should be conducted by following up with same individuals over a longer period of time. Fourth, the sample only included 16 participants, which limited generalizability. Nevertheless, given the focused nature of the questions and the consistency in the data, this research did provide important information for the residential aged care workforce research. The participants recruited provided diversity in level of appointment and cultural background that was important to this study. This qualitative study was part of the large mixed-methods study. The complementary quantitative research has been conducted to generalize the findings to a larger population, and to provide a full exploration of predictive models in order to better understand the complexity of employment outcomes of DCWs in residential aged care.

7.7.   Conclusions

The findings suggest the importance of understanding individual DCWs' positive and negative perceptions and their employment intentions within the context of their respective roles (i.e. nurses or nursing assistants) and their cultural backgrounds. Aged care service providers may consider exploring the individual differences of DCWs and accordingly improve employment characteristics and organizational resources to better match characteristics of a heterogeneous workforce and special needs of individual nursing assistants and nurses. To facilitate retention of DCWs from diverse cultural backgrounds, it is particularly important to introduce innovative and locally responsive systems, for example, offering English language classes for those with a first language other than English, providing seminars to improve cultural awareness and cross-cultural communication among DCWs, organizing spirituality workshops to help DCWs cope with job stress, and assigning appropriate job responsibility to match individual DCWs' ability and expectations. For those DCWs using aged care as a stepping stone to other employment, service providers could offer incentives to encourage them to remain in the residential aged care sector. Given that personal development is important to many DCWs, there is a need to offer them professional development opportunities and reasonable career pathways. To help DCWs cope with job stress, sufficient organizational resources should be easily accessible. Furthermore, fair wages are essential to make DCWs feel valued. These initiatives would require adequate funding support.

Appropriately targeted funding could encourage service providers to introduce tailored interventions to reduce staff turnover. Finally, there is a need to increase public awareness of the importance of aged care work, and to advocate the positive aspects of aged care work. Valuing care work and retaining DCWs are the fundamental means of providing quality care in residential aged care. [11]

7.8.   Summary

Study 3 applied a qualitative descriptive approach to understand perceptions of the rewards and difficulties of RAC work for nurses and nursing assistants, how these were related to their intentions to stay or leave, and how these varied between nurses and nursing assistants, and between locally and overseas born workers. Individual interviews were conducted with 16 DCWs in an Australian RAC facility with a specific focus on people from culturally and linguistically diverse backgrounds. It was found that DCWs' employment intentions were related to their perceptions and management of the rewards and difficulties of care work. Their experiences of care work, the employment characteristics, and the organizational resources that fitted their personality, ability, expectations, and essential needs were viewed as rewards. Evaluating their jobs as meaningful was a shared perception for direct care workers who intended to stay. Individual workers' perceptions of the rewarding aspects of care work served to counterbalance the challenges of care work, and promoted their intentions to stay. Perceptions and employment intentions varied by occupational groups and by cultural backgrounds. Overseas born DCWs are valuable resources in the RAC facility rather than a limitation, but they do require organizational support, such as cultural awareness of the management, English language support, a sense of family, and appropriate job responsibility. Overall, Study 3 confirmed and extended findings from Studies 1 and 2.

Chapter Eight reports and discusses the synthesized final results based on the three studies.

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[11] This is the end of the published article.

Chapter Eight: General Discussion, Implications and Conclusions

In Australia, many residential aged care (RAC) facilities are experiencing a shortage of direct care workers (DCWs, including nurses and nursing assistants) (Chenoweth et al., 2010). The current research addressed the call of Australian Productivity Commission (2011) to identify ways to establish a stable and adequate DCW workforce. By using a mixed methods approach, the current research addressed an overarching aim, that is, to describe and explore factors associated with employment outcomes (i.e. turnover or intention to stay or leave) of DCWs in Australian RAC facilities. Thus far, the quantitative and qualitative findings have been reported and discussed separately in the context of three complementary studies. This final chapter integrates both the quantitative and qualitative results to understand more fully the complexity of the problem and offer recommendations in the context of the research's strengths and limitations. This chapter also discusses the implications of study findings for aged care policy and practice, and the contributions to aged care workforce knowledge development and research.

8.1. General discussion of overall findings

Guided by the Job Demand-Control-Support (JDCS) model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990), the current mixed methods research incorporated three sequential studies. This section first summarises the findings from the individual empirical studies. Then, results from the three studies are integrated to inform the overarching aim of the current research.

8.1.1. *Summary of the individual study findings*

Quantitative Studies 1 and 2 addressed Aim 1 (to test predictive models of turnover of residential aged care nurses in Australia). Qualitative Study 3 then explored Aim 2 (to understand perceptions of job demands, coping resources and employment intentions among Australian residential aged care nurses and nursing assistants).

Study 1 tested two predictive models of turnover of RAC nurses, with a sample of 239 Australian RAC nurses, deriving from the Nurses and Midwives e-cohort Study (NMeS) (Turner et al., 2009). Two full structural equation models were tested. This is considered as one of the best structural equation modeling practices to test theories (Guo et al., 2009). Study 1 found that coping resources were negatively and directly related to turnover of RAC nurses, controlling for a range of individual and workforce characteristics. Consistent with the JDCS model, it was found that poorer

psychological health was predicted by lower coping resources and higher job demands, and higher coping resources were associated with lower job demands among the RAC nurses.

An unexpected finding from Study 1 was that job demands were not significantly related to turnover of RAC nurses. A possible explanation is that turnover is related to nurses' appraisal of job demands rather than stress related to job demands (Webster et al., 2011). Base on the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), the JDCS model (Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990) and previous empirical evidence (e.g. Boswell et al., 2004), a number of hypotheses were proposed. A follow-up quantitative analysis of the NMeS data (Study 2) was conducted to test these hypotheses, using hierarchical logistic and linear regressions. Given the limitation of the available NMeS data, Study 2 was only able to explore one of the two dimensions of job demands, that is, challenge-related job demands (i.e. job demands with potential for personal growth). The other unexplored dimension of job demands was hindrance-related job demands (i.e. job demands that hinder personal growth). Study 2 found that turnover was predicted by felt challenge (i.e. perception of undertaking challenging job) rather than challenge-related stress. A greater sense of job challenge appeared to reduce turnover. These findings illuminated the nonsignificant association between job demands and turnover found in Study 1. Further, Study 2 found that poorer psychological health was predicted by a higher level of challenge-related stress, but not by felt challenge. Study 2 identified supervisor support as a valuable resource to manage stress related to job challenges.

In addressing Aim 1, Studies 1 and 2 provided a comprehensive exploration of predictors of turnover of RAC nurses. However, given that the variables relating to cultural and linguistic background, citizenship and immigration status had substantial missing responses, Studies 1 and 2 were unable to distinguish overseas born nurses from native born nurses. Since the sample examined in Studies 1 and 2 did not include nursing assistants, it was unclear whether the findings based on nurses were applicable to nursing assistants. Findings from the two quantitative studies indicated a need to capture job demands and coping resources specific to the RAC work, to delineate the perspective of nursing assistants, to examine how cultural backgrounds influence DCWs' employment outcomes, and to explore how DCWs put various factors together to determine whether to stay or leave aged care.

In response to the limitations of the quantitative studies, a complementary qualitative Study 3 was conducted to address Aim 2. Informed by the quantitative results, an interview guide was developed to direct semi-structured individual interviews to collect the qualitative data. Sixteen participants, including six nurses and ten nursing assistants, from a non-profit RAC facility in Queensland, were interviewed. Thematic analysis and constant comparative analysis were completed to compare and contrast the perceptions and employment intentions of different groups

of DCWs (i.e. nurses vs. nursing assistants; overseas born DCWs vs. others). Analysis of the interview data revealed that nurses' and nursing assistants' perceptions and management of the positives and negatives of care work contributed to their intentions to stay or leave. Nurses and nursing assistants evaluated the nature of care work and employment and organizational characteristics according to their personality, ability, expectations and essential needs. The perception of undertaking a meaningful job was most significant in retaining DCWs. Those with an intention to stay were able to acquire resources to cope with job stress. Perceptions and employment intentions varied by occupational groups and by cultural and linguistic backgrounds. Study 3 confirmed and extended findings from Studies 1 and 2. Study 3 demonstrated that job demands may not be negatives, and challenging job demands with potential for personal growth might increase DCWs' job satisfaction. These further shed light on the unexpected finding from Study 1 regarding the nonsignificant relationship between job demands and turnover.

Overall, the three sequential complementary studies explored different domains of the problem, and findings from earlier studies informed the development of methods for the later studies (Collins & O'Cathain, 2009; Greene et al., 1989).

8.1.2. *Synthesis of findings from the three studies*

Findings from the three studies showed that DCWs' employment outcomes were affected by their job demands and the availability of resources that help them cope with these job demands. This section further synthesises the three studies' results to examine the impact of job demands and coping resources on employment outcomes of DCWs.

8.1.2.1. *Job demands and employment outcomes*

There are two distinct perspectives of job demands examined in previous research. Some researchers (e.g. Karasek et al., 1998) have classified job demands by the nature of workload, that is, physical demands and psychological demands. Others (e.g. Lepine, Podsakoff, & Lepine, 2005) have explored job demands by either the positive or negative effects they may produce. Challenge-related job demands (i.e. job demands with potential for personal growth) are perceived as positives; in contrast, hindrance-related job demands (i.e. job demands creating barriers for personal growth or goal attainments) are evaluated as negatives (Cavanaugh et al., 2000). Improving on previous research which only focused on one perspective of job demands, the current research explored both the nature of the workload and the perceived positives and negatives of job demands, and how they were related to employment outcomes of DCWs.

Studies 1 and 2 found that greater job demands were associated with poorer psychological health of RAC nurses, which is consistent with the Job Demand-Control-Support model (JDCS: Johnson & Hall, 1988; Karasek, 1979; Karasek & Theorell, 1990). This finding was confirmed by Study 3 which noted that a high level of job demands resulted in job stress in DCWs.

Study 2 found that a greater sense of challenge-related job demands (i.e. felt challenge) predicted turnover of RAC nurses. This is consistent with Boswell and colleagues (2004) who showed that felt challenge was negatively related to intent to quit among university staff. This quantitative finding can be further explained by the insight provided by the qualitative work in Study 3 that the perception of job challenges was often accompanied by a sense of achievement, thus, increasing DCWs' job satisfaction and intention to stay. Some nursing assistants perceived physically demanding nature of care work as rewards, and some nurses perceived the high level of responsibilities in aged care as a positive.

Limited by the use of secondary data, Studies 1 and 2 were not able to test the association between perception of hindrance-related job demands and turnover. Findings from Study 3 addressed the limitation of the quantitative studies and revealed a number of hindrance-related job demands in RAC work, including conflicting working styles and different views about work ethics between DCWs, especially between long-term workers and new workers. These hindrance-related job demands were perceived as difficulties, and these difficulties were associated with only intention to leave by nurses and nursing assistants. These qualitative results complemented the quantitative findings, and highlighted the need to differentiate between the perceived positives and negatives of job demands when investigating the turnover of DCWs.

More specifically, Study 3 uncovered job demands specific to RAC work, and how the influences of job demands on job stress differed between nurses and nursing assistants. Nurses reported that the major cause of job stress came from psychological demands, including the scope of their job responsibilities, heavy workload, frequent interruptions and pressure to complete multiple tasks within a tight timeline. In comparison, for nursing assistants, their job stress were predominately related to physical demands, including continuous and fast physical activities, for example, moving residents and machines, which require a high level of physical effort. These findings were in line with their job tasks. Furthermore, both nurses and nursing assistants reported that coping with grief and loss was emotionally stressful, with nursing assistants feeling a sense of loss when residents passed away, and nurses reported a high level of emotional stress when notifying residents' families of the loss of their love ones.

Study 3 also provided perspectives on how job demands and employment outcomes differed between overseas born DCWs and native born DCWs. Compared with native born DCWs, the job demands for overseas born DCWs were intensified by considerable communication barriers with

co-workers and RAC residents as a consequence of inadequate English language proficiency and limited cultural competency. These findings were consistent with previous research (e.g. Walsh & O'Shea, 2010) that has identified inadequate communication proficiency as a major barrier faced by overseas born DCWs. It is the fit between the level of job responsibilities and their perceived abilities that retains overseas born DCWs in their job. Findings from Study 3 also demonstrated extra job demands for English native speaker DCWs working in a multicultural environment. They reported communication difficulties with their non-native speaker colleagues, which appeared to increase their job demands. Despite the communication problems, they viewed overseas born DCWs as good colleagues to work with. In brief, cultural and linguistic issues permeate the job demands of care work in a multicultural environment.

Taken together, the current research examined job demands from two distinct perspectives to provide a more comprehensive picture of job demands in DCWs. In terms of the impact of the nature of the workload, physical demands had stronger influences on nursing assistants' job stress, while psychological demands affect nurses' job stress. With regards to the perceived positives and negatives of job demands, challenge-related job demands were identified as positives by DCWs, and the perception of undertaking a challenging job was negatively related to turnover and intention to leave of DCWs. In the multicultural working environment, job demands intersected with cultural and linguistic issues to influence employment outcomes of DCWs.

8.1.2.2. *Coping resources and employment outcomes*

Both the quantitative and qualitative data demonstrated that inadequate work-related coping resources were related to negative employment outcomes of DCWs. Consistent with the landmark studies conducted by Karasek (1979) and Johnson and Hall (1988), these coping resources involved support from supervisors and colleagues, along with skill discretion (i.e. opportunities for individual DCWs to utilize and develop their skills and knowledge) and decision authority (i.e. opportunities to participate in organizational decision making process).

A collective increase in each coping resource was found to be associated with a reduction in job stress among RAC nurses. This quantitative finding from Study 2 was supported by the qualitative results from Study 3 that nurses and nursing assistants identified sufficient organizational support as valuable resources to retain them in RAC. These findings confirmed the JDCS model that coping resources are negatively related to job stress (Johnson & Hall, 1988; Karasek, 1979).

Results from the three studies highlighted that the presence of supervisory support or management support played an essential role in reducing both turnover intention and actual

turnover. For instance, new DCWs identified supervisor support as a particularly useful resource to retain them. Furthermore, supervisor support made a unique contribution to the reduction of stress related to job challenges. This finding is in line with Bakker and Demerouti (2007) who proposed that different types of work-related coping resources played different roles in helping employees cope with different types of job demands. The support, appreciation and constructive feedback from supervisors help and motivate employees to accomplish challenging work tasks and achieve personal goals (Bakker & Demerouti, 2007).

Study 3 found that the intention to stay by overseas born DCWs is linked to a supportive and culturally and linguistically friendly working environment. Cultural and linguistic challenges constrained overseas born DCWs' ability to seek proper resources to cope with job stress. English language support and the cultural awareness of the management was seen as bridging the language and cultural gaps of the overseas born DCWs, thus, facilitating their intention to stay in their job.

8.1.2.3.   *Balancing demands and resources*

Findings from Study 3 suggested that a number of intermediary factors might counterbalance positive and negative aspects of job demands and coping resources, thereby affecting employment outcomes of DCWs. These intermediary factors included perceived meaning of care work, individual DCWs' personality, ability, expectations and essential needs, and alternative employment opportunities.

The perceived meaning of care work was found to be an important intermediary factor to buffer the negatives of care work hence, to increase DCWs' job satisfaction and intention to stay in RAC. This is consistent with previous research that reported developing meaningful relationships with residents facilitated nurses' willingness to stay in RAC (McGilton et al., 2014). In line with previous research (Chenoweth et al., 2014), the current research found that the locally born DCWs perceived care work as helping vulnerable people.

A novel finding from the current research was that the overseas born DCWs expressed a greater range of intrinsic meanings of care work, including reciprocity, karma, and intergenerational exchanges. They perceived their commitment to RAC work as a way of achieving reciprocity as their parents or grandparents were also cared by other people. They believed that looking after RAC residents would create positive karma which will lead to happy and fortunate future life. They perceived that their job as a form of intergenerational benevolence. These intrinsic meanings of care work were seen as enhancing most overseas born DCWs' intention to stay in aged care.

Individual DCWs' personality, ability, expectations and essential needs were also found to moderate the positives and negatives of care work, hence, affecting employment outcomes of

DCWs. For example, overseas born DCWs' attached great importance to a sense of family and cultural awareness created by the management, English language support and appropriate job responsibility. Older nursing assistants paid more attention to job stability and flexible work arrangements. When the job demands and resources matched key needs and expectations of nurses and nursing assistants, they tended to express an intention to stay. In contrast, DCWs who were unable to obtain resources to manage job demands were likely to express an intention to leave aged care. Younger nursing assistants and nurses focused more on career advancements regardless of other factors. Given limited career pathways in aged care (Productivity Commission, 2011), some younger DCWs, mainly nursing assistants, never intended to stay in aged care for the long term. Influenced by these intermediary factors, the DCW workforce is comprised of those who intended to stay, those who intended to leave, and those who never intended to stay over the long term. These intentions appear to affect the fit between job demands and opportunities for individuals at particular points of their lives.

Alternative employment opportunities were another intermediary factor that may influence turnover of nurses and nursing assistants. Previous research has found that when there is a lack of alternative employment opportunities, employers may increase job demands; and when there is a shortage of workers, employers may offer incentives and better employment packages to attract and retain workers (Felsenstein & McQuaid, 2006). Study 3 showed that DCWs thought there were a number of incentives to retain staff, for example, flexible work schedules, on-going training and educational opportunities. These incentives were identified as positives, and hence, facilitating intention to stay of nurses and nursing assistants.

The qualitative data collected in Study 3 allowed the researcher to ascertain how DCWs balanced job demands and coping resources. These nuanced understandings would have been circumscribed had the researcher simply depended on the quantitative data. The quantitative and qualitative findings supported each other. They highlighted the important role played by job demands and coping resources in employment outcomes of nurses and nursing assistants working in Australian RAC, and the role organisations can play in moderating those aspects that impact on negative employment outcomes.

8.2.   Strengths and limitations

The strengths and limitations of each empirical study have been discussed in Chapters Five, Six and Seven. This section examines the strengths and limitations of the overall research program.

The overall research design has a number of strengths. First, the current research applied a comprehensive mixed methods research design, with three studies. The majority of past mixed methods research has used one quantitative study and one qualitative study to address their overarching aims. In contrast, in the current research, an additional quantitative analysis on the same data used in the first quantitative study was conducted to further explore predictors of turnover of RAC nurses. This approach facilitated a more thorough exploration of data, and facilitated a more in-depth understanding of factors related to employment outcomes of DCWs. Second, the current research explored both *actual* turnover and *intention* to stay or leave. This offered a more comprehensive picture of employment outcomes of DCWs. These strengths enhance the practical significance of the findings.

8.2.2.   Limitations

The overall research design is not without limitations. First, Studies 1 and 2 used secondary data derived from the NMeS, which only sampled nurses. Thus, Studies 1 and 2 were unable to test the predictive models and hypotheses with nursing assistants. Study 3 has suggested that there are some differences between the two groups with regard to perceptions of job demands and coping resources. Future research should seek to replicate Studies 1 and 2 with nursing assistant samples. The interpretation of final results would be strengthened if the qualitative sample and the quantitative sample were embedded (Sosulski & Lawrence, 2008). This was not possible in the present research because of the ethical issues associated with contacting with the NMeS survey respondents.

Second, for parsimony, the current research operationalized employment outcomes as turnover and intentions to stay or leave. This did not capture other aspects of employment outcomes, for example, attraction and retention. In terms of Studies 1 and 2, turnover was measured using a dichotomous variable (leaving=1, staying=0), without distinction between voluntary and involuntary turnover. The two types of turnover may be predicted by different factors (Hayes et al., 2012; Hayes et al., 2006). When testing predictive models of RAC nurses' turnover, there is a need to distinguish voluntary from involuntary turnover.

The current research operationalized turnover as a negative. However, turnover could also be viewed positively. Manz and colleagues (2015) propose that there are five types of dysfunctional employees: "Job Sleepwalking" (i.e. employees who show low commitment to their job), "Job Misfit" (i.e. employees whose value does not fit the job), "Job Stagnancy" (i.e. employees who

show little interest in personal growth), "Job Imprisonment" (i.e. the vocational mismatch between employees and their job) and "Wrong-Job Stress" (i.e. employees who are unable to effectively undertake their job) (pp. 58-59). These five types of dysfunctional employees apply to DCWs working in the RAC facilities. For example, an American qualitative study has found that a barrier that hinders nursing home administrators to adopt health information technology is that some older nurses were reluctant to use computers (Bezboruah, 2014). Researchers consider the turnover of the dysfunctional employee as beneficial to an organization (Manz et al., 2015). Indeed, replacing DCWs with those who better match the job may increase productivity of the organization (Hayes et al., 2006). Future research should examine differential predictors of positive and negative turnover.

With respect to Study 3, the interview data was collected at a static point in time, which only allowed an investigation of DCWs' turnover intentions. Future qualitative research may consider long-term follow-up with the employment outcomes of DCWs to better understand what contributes to their turnover and retention.

The third limitation is related to the retrospective nature of the data. The NMeS data for the quantitative studies were collected between 2006 and 2009, and the qualitative interview data for Study 3 were gathered in 2013. Since recent years have seen noticeable changes in the characteristics of RAC residents and RAC workforce and RAC policies, findings from the three studies should be interpreted with caution.

In terms of the characteristics of RAC workforce, according to the most recent Australian census, the proportion of DCWs employed on a permanent part-time basis (working less than 35 hours) has increased from 69% in 2007 to 72% in 2012, suggesting that the majority of DCWs remained working part-time (King et al., 2012). The percentage of casual or contract DCWs has decreased from 22% in 2007 to 19% in 2012 (King et al., 2012), indicating that the majority of DCWs continue to hold permanent positions. These characteristics are consistent with the samples in the three studies.

In terms of the characteristics of RAC residents, the needs of current population of RAC residents are much more complex than ten years ago. In 2006, 68% of permanent RAC residents had a high level of dependency needs (Australian Institute of Health and Welfare, 2007). In 2014, this statistics reached 83%, with 52% of RAC residents experiencing dementia (Australian Institute of Health and Welfare, 2014). This suggests that the RAC work is more demanding than ten years ago.

Aged care policy has also undergone significant change in the last ten years. For example, the recent Australian Aged Care Reform raised user contributions and reduced government funding on RAC services (Department of Social Service, 2015). Associated with the increased user

contributions, users (i.e. RAC residents) will attach a higher level of expectations to nurses and nursing assistants.

Changes in residents' characteristics and aged care policy increase workload and place a high level of responsibility on nurses and nursing assistants. In this context, it is even important to explore how job demands and coping resources were related to employment outcomes of DCWs.

8.3.   Implications for aged care policy and practice

Findings from the current research shed light on what contributes to the employment outcomes of DCWs in Australian RAC facilities. Implications from the individual study findings have been reported in Chapters Five, Six and Seven. This section interprets the overall study findings to assist aged care policy makers and service providers in translating empirical evidence into "real world" practices and policies.

The recent policy changes suggested by My Aged Care (2015) prioritise the importance of consumer control. This places a high level of pressure on the service providers. In this context, findings from the current research have important implications for aged care policy and practice. Findings from the three studies suggest that job demands of RAC work should be revised at both organizational and individual levels. At the organizational level, there is a need to promote the positive aspects of the job, for example, having long term meaningful relationships with residents and their families or flexible work schedules. At the individual level, the RAC service providers might consider assigning appropriate workloads and responsibilities to fit individual DCWs' ability, expectations and intrinsic needs. For example, for the nursing assistants whose expectations and personality match the intensive labour nature of care work, service providers may increase their work hours if they prefer. For the nurses with career aspirations, service providers may assign them with additional responsibilities if they prefer.

Furthermore, to help DCWs cope with job stress, there is a need to provide sufficient resources. Extensive empirical evidence has identified a number of resources that are important to reduce job stress and promote DCWs' willingness to stay in RAC. These resources include supervisor support, co-worker interaction, professional development and career advancement opportunities and decision-making power (Chenoweth et al., 2010; Chenoweth et al., 2014; Karantzas et al., 2012; McGilton et al., 2014). These resources, especially support from immediate supervisors, should be available and easily accessible. The supervisors might conduct an initial assessment of individual DCWs' ability, expectations and essential needs, and then apply a specific implementation of the research evidence to support individual nurses and nursing assistants. For example, new DCWs require intensive training and additional supervisor support. For those who

never intend to stay in RAC over the long term, RAC service providers may offer them such incentives as professional development opportunities to encourage them to work in RAC.

Previous research (e.g. Walsh & O'Shea, 2010) has raised a concern regarding the inability of overseas born DCWs to provide optimal residential aged care services due to their inadequate cultural and linguistic competency. In contrast, findings from the current research showed that the cultural and linguistic issues could be addressed by organization support, for example, English language classes and cultural awareness of the management. With this support, overseas born DCWs were capable of delivering quality care. Overseas born DCWs demonstrated a strong commitment to care work as they valued the long-term relationships with RAC residents and their families, and they attached significant meanings to care work. Additionally, there are increasing numbers of older Australians from culturally and linguistically diverse backgrounds. To accommodate the special needs of this population, overseas born DCWs are identified as important resources to deliver culturally sensitive RAC services (Chenowethm et al., 2006). In this context, findings from the current research may assist RAC service providers to develop targeted interventions to improve overseas born DCWs' communication skills. A supportive and culturally and linguistically friendly working environment will assist overseas born DCWs to fully utilize their strengths to deliver quality care.

8.4.　　　Implications for aged care workforce knowledge development and research

The current research has the potential to make important contributions to the Australian RAC workforce literature. This section discusses how the current research may inform future research, and then, proposes potential directions for future research.

First, the current research comprehensively explored predictors of turnover of RAC nurses. It contributes to the growing body of literature on employment outcomes of DCWs by testing two theoretical models of RAC nurse turnover, and by exploring differential impacts of challenge-related stress and felt challenge on actual turnover and psychological health of RAC nurses. By examining both actual turnover (Studies 1 and 2) and turnover intentions (Study 3), the current research provided a more comprehensive picture of RAC staff turnover (Hayes et al., 2006), thus, improving on previous findings.

Second, Study 3 examined the perspectives of two understudied groups, nursing assistants and overseas born DCWs. Findings from the current research delineated the distinct perspectives on meaning of care work by oversea born nurses and nursing assistants with diverse religious beliefs. Future research may consider using these findings to develop hypotheses regarding the relationships between religious beliefs and employment outcomes of DCWs. The current research showed that

overseas born DCWs are valuable resources in a RAC facility rather than a constraint as reported in some previous research (e.g. Walsh & O'Shea, 2010), but they do require organizational support. Future research might consider further exploring contributions of oversea born DCWs in delivering quality care.

Third, the current research revealed the distinct views of DCWs who never intended to stay in RAC over the long term. The role of aged care work as a stepping stone to other employment has been underexplored. Previous research suggests that aged care is often perceived to be a menial job (e.g. Twigg et al., 2011). Findings from the current research, however, indicated that aged care provided DCWs with valuable knowledge and experiences in gerontological nursing and people skills. A view of aged care work as useful in building core skills for future employment is missing from the literature.

Future quantitative research may further test the predictive models and hypotheses examined in the current research using nursing assistant samples, and compare the results with those of nurses. This would require a development of instruments which are education, language and culture fair and sensitive.

In addition, the moderating influences of organizational context should be included in the predictive models of DCW turnover. Due to the issues of substantial non-equivalence of measurement instruments across nurses working in RAC and non-RAC in the NMeS data, it was inappropriate for this research to simultaneously test different groups of nurses with the same models (Gao & Newcombe, 2015). Therefore, the organizational context was considered a given, and was controlled in the current research design. Future research may examine the moderating influences of organizational context by simultaneously testing the predictive models across nurses and nursing assistants working in different health care settings.

Future in-depth qualitative studies may consider exploring how religious and/or cultural beliefs impact perceived meaning of care work and employment outcomes of DCWs. Longitudinal qualitative studies are needed to follow up with DCWs who never intend to stay in RAC over the long term, and to explore what factors may encourage them to stay in RAC. Further qualitative work is encouraged to collect in-depth data from overseas born DCWs of different cultural backgrounds to better understand how cultural backgrounds impact on their employment outcomes.

Trends of ageing population in each region and local economic factors (e.g. alternative employment opportunities) may influence employment outcomes of nurses and nursing assistants (Castle, 2008b; Castle & Engberg, 2006; Collier & Harrington, 2008). For example, in rural areas with limited employment options, work in the local RAC facilities might be highly valued. There is a need to combine both the qualitative and quantitative data with Geographical Information System (GIS) methods (Jonson-Reid & Drake, 2008) to map the trends of ageing population and aged care

workforce throughout regions, and to investigate how local economic factors link to employment outcomes of nurses and nursing assistants.

The imbalance between employees' paid work and their personal and social life may negatively influence their employment outcomes (Asiedu-Appiah, Mehmood, & Bamfo, 2015). Future quantitative research should include variables relating to personal and social life to improve the predictive power of the models for predicting employment outcomes of DCWs. Qualitative research should be conducted to further explore how the impact of personal and social life on employment outcomes vary between nurses and nursing assistants and between overseas born and native born DCWs.

The current research calls for improving job demands and coping resources for DCWs, which may require appropriate funding. Specific research efforts may involve partnerships between researchers, service providers and the Department of Social Services to identify empirically supported funding models for RAC personnel. The research questions may involve: what is the cost-effective RAC job design with both adequate coping resources and optimal job demands; what specific resources should be available to support different groups of DCWs; and what are the occupational trajectories of DCWs?

8.5.   Conclusions

Despite burgeoning international literature on employment outcomes of DCWs, there is little research exploring multiple predictive models of employment outcomes with Australian samples, and limited Australian evidence regarding the perspectives of nursing assistants and overseas born DCWs from culturally and linguistically diverse backgrounds. The current research addressed these gaps by describing and exploring factors associated with employment outcomes of DCWs in Australian RAC facilities, using a mixed methods approach.

The current research found that positive employment outcomes (i.e. intention to stay and low turnover) of DCWs appeared to be related to adequate work-related coping resources (i.e. supervisor support, co-worker support, opportunities for personal development and involvement in organizational decision making process) and greater sense of job challenges with potential for personal growth (i.e. felt challenge). Poorer psychological health of DCWs was associated with inadequate coping resources and higher level of job demands. These findings have important policy and practice implications. To reduce turnover of DCWs and improve their psychological health, aged care policy makers and service providers may consider improving job resources by providing sufficient supervisor support, by facilitating interactions between co-workers, by increasing workers' opportunities to participate in organizational decision making process, and by improving

workers' professional development. Meanwhile, the design of job demands should facilitate positive perspectives of aged care work with potential for personal growth, along with tailored interventions to alleviate their job stress. The design of aged care work should consider individual DCWs' roles and cultural backgrounds, as well as their ability, expectations and essential needs. In light of the pressing need for a sufficient direct care workforce with appropriate skill mix, it is the time to introduce innovative and locally responsive aged care policies and programs to stabilize the nurse and nursing assistant workforce in Australian residential aged care facilities.

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Appendices

Appendix A: Recruitment Flyer

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Research Project

Talk to me about
why you work in aged care
what makes you stay

Dear nurses and nursing assistants,

A better understanding of your experiences in aged care will help us to come up with strategies to improve your job satisfaction. If you work as a **full-time or part-time registered nurse, enrolled nurse or nursing assistant on an ongoing basis**, I would like to talk to you for about 15 to 30 minutes.

The details of the project are provided in the Participant Information Sheet and Informed Consent Form. Please feel free to take a copy of the forms. If you would like to speak with me and/or if you have any questions about the project, please either contact me or leave your contact information in the box. Your help will be greatly appreciated.

I look forward to hearing from you.

Sincerely,

Fengsong
Fengsong Gao
PhD Candidate
School of Social Work and Human Services
The University of Queensland, St Lucia, QLD 4072
Email: annie.gao@uqconnect.edu.au

Appendix B: Participant Information Sheet

PARTICIPANT INFORMATION SHEET

Project Title: "We're still here..." : A mixed methods investigation of employment outcomes of residential aged care nurses and nursing assistants in Australia

Researcher: Fengsong Gao
PhD Candidate
School of Social Work and Human Services
The University of Queensland
Email: annie.gao@uqconnect.edu.au

Supervisors: Associate Professor Cheryl Tilse, Professor Jill Wilson, Dr. Anthony Tuckett and Associate Professor Peter Newcombe at the University of Queensland.

Dear Nurses and Nursing Assistants,

I would like to invite you to take part in a research project examining **why you come to work in aged care and what makes you stay**. A better understanding of these important questions will help us to come up with strategies to improve your job satisfaction. The project will involve interviews with nurses and nursing assistants who work on an ongoing basis in residential aged care facilities. This research is an important part of my PhD thesis.

What will you be asked to do?

- Talk to me about your experience for about 15 to 30 minutes. The interview will be scheduled at a time and a place that is convenient for you.
- The interview will be audio recorded.

How will interview information be safeguarded?

- I will keep your information confidential and safe. Your personal information will be removed from the interview files.
- Digital voice files will be deleted after they have been transcribed and checked.
- The interview materials will be either saved in my office computer with a password protection or stored in a locked filing cabinet in my office. The access to the interview transcripts will be limited to me and my supervisors.
- All the interview materials will be strictly destroyed after 7 years according to the ethical guidelines set by the University of Queensland.

Is it safe to talk to me?
- Yes. Any information you share with me will be treated in confidence. Your real name and personal identifiable information will not be used in any publications. However, some quotes from the interview might be used in presentations and reports to clarify the points made, but these will not be linked to any identifiable information. Please note that if you disclose information about physical and sexual abuse of a resident, I will be obliged to report to your manager.
- Participation in this study should involve no physical or mental discomfort. Risks of participation include the potential time burden or boredom with the interview.

Do you have to take part?
- No. Taking part in the interview is entirely up to you. If you decide to take part, you will be asked to sign an Informed Consent Form. You have complete freedom to withdraw at any time without giving a reason. This will not affect your work.

Does this study have an ethics clearance?
- Yes. This study has been cleared by one of the human ethics committees of The University of Queensland in accordance with the National Health and Medical Research Council's guidelines. If you would like to speak to an officer of the University not involved in the study, you may contact the Ethics Officer on (07) 3365 3924.

Thank you for your time and consideration of this invitation. If you have any questions, please do not hesitate to contact me.

Sincerely,

Fengsong
Fengsong Gao
PhD Candidate
School of Social Work and Human Services
The University of Queensland, St Lucia, QLD 4072 Australia
Email: annie.gao@uqconnect.edu.au

Appendix C: Participant Consent Form

PARTICIPANT CONSENT FORM

**Project Title: "We're still here..." : A mixed methods investigation of employment
outcomes of residential aged care nurses and nursing assistants in Australia**

Researcher: Fengsong Gao
PhD Candidate
School of Social Work and Human Services
The University of Queensland
St Lucia, QLD 4072 Australia

I, _____ consent to be interviewed by the researcher for the study
titled **"We're still here..." : A mixed methods investigation of employment
outcomes of residential aged care nurses and nursing assistants in Australia.**

I have read the Participant Information Sheet. The researcher has explained to me what
the research is about and what I will be asked to do and how the interview data will be
safeguarded.

I understand that the interview will be audio recorded.

I understand that my participation in the interview is voluntary and I can withdraw at
any time during the interview without any penalty.

I understand that all the interview materials will be treated in confidence. My personal
information will be removed from the interview files. The interview materials will be
either saved in the researcher's office computer with a password protection or stored in
a locked filing cabinet in the researcher's office.

I understand that my real name and personal identifiable information will not be used in
any publications. However, some quotes from the interview might be used in
presentations and reports to clarify the points made.

Participant's Signature:_____   Date:_____

Researcher's Signature:_____   Date:_____

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