The impact of workplace relationships on engagement, well-being, commitment and turnover for nurses in Australia and the USA

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THE IMPACT OF WORKPLACE RELATIONSHIPS ON ENGAGEMENT, WELLBEING, COMMITMENT AND TURNOVER FOR NURSES IN AUSTRALIA AND USA
ABSTRACT

Aims: We examined the impact of workplace relationships (perceived organisational support, supervisor-nurse relationships and teamwork) on the engagement, wellbeing, organisational commitment and turnover intentions of nurses working in Australian and USA hospitals.

Background: Within a global context of nurse shortages, knowledge about factors impacting nurse retention is urgently sought. We postulated, using the Social Exchange Theory, that nurses’ turnover intentions would be affected by several factors and especially their relationships at work.

Methods: A self-report survey was used to gather data in 2010-12 from 510 randomly chosen nurses from Australian hospitals and 718 nurses from USA hospitals. A multi-group structural equation modelling analysis identified significant paths and compared the impact between countries.

Results: The findings indicate that this model was more effective in predicting the correlations between variables for nurses in Australia compared with USA. Most paths predicted were confirmed for Australia, except for the impact of teamwork on organisational commitment and turnover, plus the impact of engagement on turnover. In contrast, none of the paths related to supervisor-subordinate relationships was significant for USA; neither were the paths from teamwork to organisational commitment or turnover.

Conclusion: Our findings suggest that wellbeing is a predictor of turnover intentions, meaning that healthcare managers need to consider nurses’ wellbeing in everyday decision-making, especially within the cost-cutting paradigm that pervades healthcare provision in nearly every
country. This is important because nurses are in short supply and this situation will continue to worsen, because many countries have an aging population.

**Keywords**: nurses, turnover, organisational commitment, perceived organisational support, wellbeing, employee engagement, international
SUMMARY STATEMENT

What is already known about this topic?

- Knowledge about factors that may reduce nurse turnover intentions (and thereby, increase retention) is keenly sought, globally.
- Nurses’ supervisors play a pivotal role in nurses’ organisational commitment - a well-evidenced predictor of turnover intentions.
- Evidence to date indicates that perceived organisational support predicts employee engagement, organisational commitment and turnover intentions.

What this paper adds

- Emphasis is highlighted on the need for management to improve nurses’ wellbeing as a priority, because it affects nurse turnover intentions and society cannot function effectively without nurses.
- Supervisors do not appear to play the mediating role for nurse turnover intentions in the USA compared with Australia (and previously found other countries).
- Within the global context of nurse shortages and exacerbating aging populations, the varying impact of workplace relationships cannot be ignored.

Implications for practice and/or policy

- Healthcare management must consider nurses’ engagement and wellbeing in everyday decision-making, because these factors appear to be antecedents of how committed nurses are to their hospitals – a strong predictor of retention.
• Management practice must become more sensitive to the differing but important role of supervisor-nurse relationships, perceived organisational support and teamwork in explaining nurse wellbeing, engagement and commitment.

• For reduced turnover intentions (and thereby increased retention), HRM policies and practices need to be focussed on enhancing nurses’ wellbeing.
INTRODUCTION

Nurses in the USA and Australia are in short supply (OECD, 2006) and one cause is higher than average turnover rates (Buchan & Calman 2004, Buerhaus et al. 2007, Buerhaus 2008). This is a global healthcare management issue because nurses are expensive to replace (Cascio 2000) and the nursing shortage impacts patient safety, the ability to detect complications early and nurses’ wellbeing (Rafferty et al. 2007, Buerhaus 2008). Such negative health outcomes are major concerns for any society.

There is growing evidence that nurses’ experience deteriorating work conditions, with increasingly unsupportive work environments, non-family-friendly working hours and increased stress (Cheung et al. 2004, Shacklock et al. 2009). According to Ackroyd et al. (2007) and the supervisor-nurse relationship is often the ‘buffer’ between organisational demands and professional workplace expectations. Notably, effective supervisor-nurse relationships predict high organisational commitment and wellbeing (Rodwell et al. 2009, Brunetto et al. 2010, 2012a) and retention (Cropanzano & Mitchell 2005, Cohen 2006). Thus, the quality of workplace relationships, especially those with supervisors, plus perceived organisational and colleague support, are argued to anchor nurses to a particular hospital and support them to stay nursing.

Workplace relationships also influence nurses’ engagement; important to healthcare managers because engagement captures emotional and intellectual involvement, producing nurses who embrace their work tasks. Furthermore, while research has compared clinical practices in Australia and USA (Pearson & Peels 2002), minimal research exists examining engagement’s antecedents or comparing links between nurses’ workplace relationships, engagement, wellbeing, commitment and turnover intentions in Australia and USA. Such knowledge would be
potentially valuable to healthcare managers globally, identifying behaviours and practices that are common, as well as best (worst) practice.

**Background**

This paper uses Social Exchange Theory (SET) as a lens to compare the impact of workplace relationships on nurses’ engagement and in turn, their psychological wellbeing, organisational commitment and turnover intentions. SET is traditionally used to explain how different workplace exchange relationships benefit multiple stakeholders, arguing that both employees and the organisation benefit when relationships are effective. Employees benefit because effective relationships lead to the exchange of resources, knowledge, time and emotional support required to undertake nursing effectively (Wang *et al.* 2005, Yukl & Michel 2006).

Using SET, in the ideal context, employees would have access to support from the organisation, their supervisor and colleagues and consequently, would be enthused and engaged in nursing. Additionally, because engaged nurses are energetic in the job, they are also likely to have high perceptions of wellbeing and be committed to their hospitals, reducing their intentions to leave.

**Perceived Organizational Support**

Perceived organizational support (POS) is typical of a workplace relationship that can be explained using SET because it is assumed that, when the organisation treats the employee well (access to resources, respect), the employee reciprocates, working hard to improve organisational effectiveness. Allen *et al.* (2003) argue that POS refers to employees’ views about the extent to which the organization values their work and is concerned about them. POS is important because
it impacts on the quality of the supervisor-subordinate relationship (Wayne et al. 1997), predicts employee engagement (Saks 2006), plus organisational commitment, citizenship behaviour and retention (Eisenberger et al. 2002). Saks (2006) and Sen (2009) argue future research is needed to examine the antecedents of engagement and this study begins to address that call by comparing the impact of POS on nurses’ engagement, wellbeing, organisational commitment and turnover intentions, as follows:

\[ H1: \text{There is a positive relationship between nurses’ perceived organizational support and engagement.} \]

\[ H2: \text{There is a positive relationship between nurses’ perceived organizational support and wellbeing.} \]

\[ H3: \text{There is a positive relationship between nurses’ perceived organizational support and organisational commitment.} \]

**Supervisor-nurse relationships**

Similar to POS, supervisor-nurse relationships are often conceptualised using SET because social reciprocity of resources, support and participation in decision-making, trust and respect are the expected outcomes of an effective relationship (Gerstner & Day 1997, Mueller & Lee 2002). An added advantage for employees is the acceptance by supervisors, irrespective of their performance (Graen & Uhl-Bien 1995), plus access to interesting tasks, greater autonomy, promotions and bonuses. In return, employees provide extra support for the supervisors’ decisions (Wayne et al. 1997). However, not all employees work in such supportive environments, which have implications for their engagement and commitment. This is important for nurses because previous research suggests nurse-managers have discretionary power to
ensure adequate resources, knowledge and support to meet everyday demands (Ackroyd et al. 2007), likely impacting on nurses’ engagement, commitment and turnover intentions. Sparrowe et al. (2005) identified that the quality of the supervisor-subordinate relationship somewhat impacts on engagement and Edmondson (2003) and Ellemers et al. (2004) suggested the supervisor-subordinate relationship impacts the quality of teamwork, but it is unclear whether these impacts apply to nurses in Australia and USA:

H4: There is a positive relationship between nurses’ satisfaction with their exchange relationships with supervisors and their satisfaction with teamwork.

H5: There is a positive relationship between nurses’ satisfaction with their exchange relationships with supervisors and their levels of engagement.

H6: There is a positive relationship between nurses’ satisfaction with their exchange relationships with supervisors and their levels of wellbeing.

H7: There is a positive relationship between nurses’ satisfaction with their exchange relationships with supervisors and their levels of organisational commitment.

H8: There is a negative relationship between nurses’ satisfaction with their exchange relationships with supervisors and their turnover intentions.

**Teamwork**

Teamwork in organisations refers to a formally established group of employees working towards a common goal and often includes employees assisting and supporting one another and/or undertaking complementary tasks (Rasmussen & Jeppesen 2006). Teamwork can be conceptualised using SET, as a relationship leading to social reciprocity and benefitting the organisation because a team of employees is more productive than any one employee (Salas et
Kalisch et al. (2007) argued that teamwork positively impacts engagement; however, this finding needs to be replicated across different countries. According to van Mierlo et al. (2001), teamwork positively promotes employees’ perceptions of wellbeing and Rasmussen and Jeppesen’s (2006) meta-analysis found evidence linking teamwork with increased organisational commitment and lower turnover intentions. Li et al. (2011) found that LMX predicted engagement and it is expected that teamwork will also impact engagement, as proposed below:

H9: There is a positive relationship between nurses’ satisfaction with teamwork and their engagement.

H10: There is a positive relationship between nurses’ satisfaction with teamwork and their wellbeing.

H11: There is a positive relationship between nurses’ satisfaction with teamwork and their organisational commitment.

H12: There is a negative relationship between nurses’ satisfaction with teamwork and their turnover intentions.

**Employee engagement**

Employee engagement is a relatively new concept, with no agreed conceptualisation (Saks 2006) and it is important to examine because most scholars agree that engaged employees have high levels of energy and identify strongly with their work; however engagement is argued to be declining (Richman, 2006). Schaufeli et al. (2002) argued that engagement refers to a state of mind characterised by optimistic perceptions of fulfilling tasks. Kular et al. (2008) argued that engagement refers to the job energy levels, plus positive beliefs and feelings about the organisation, work conditions and value of the work. In terms of antecedents, May et al. (2004)
identified that effective leadership and co-worker relationships, interesting work tasks and effective job resources all predict employee engagement. Engagement is also predicted by POS (Saks 2006), management practices and the work environment (Richman 2006) and emotional intelligence (Brunetto et al. 2012b). Further, high engagement predicts high organisational commitment and low turnover intentions for police officers (Brunetto et al 2012b) and therefore a similar relationship is expected for nurses:

H13. There is a positive relationship between nurses’ engagement and their organisational commitment.

H14. There is a negative relationship between nurses’ engagement and their turnover intentions.

Wellbeing

‘Wellbeing in the workplace’ is a relatively new concept in management (and healthcare management) and there exist competing conceptualisations and definitions. Danna and Griffith (1999) conceptualise wellbeing as a function of a mental, psychological, physical, physiological and general state of health. However, Grant et al. (2007) perceive wellbeing as comprising three dimensions: psychological (employees’ level of satisfaction with processes and practices), physical and social. In this study, we adopt a composite definition, embracing Grant et al.’s psychological dimension and capturing van der Doef and Maes’ (1999) perspective that includes attitudes about the work context.

Previous researchers have identified a link between wellbeing and job outcomes such as commitment (Wright & Cropanzano 2000), while Brunetto et al. (2012b) found that wellbeing
predicted organisational commitment and turnover intentions for police officers. For hospital nurses, we propose:

**H15. There is a positive relationship between nurses’ levels of wellbeing and organisational commitment.**

**H16. There is a negative relationship between nurses’ levels of wellbeing and turnover intentions.**

**Organisational Commitment and Turnover Intentions**

Employees with high organisational commitment are those who are emotionally attached to and identify with their workplace (Meyer & Allen 1991). Organisational commitment is important to examine because high commitment is associated with low turnover intentions (Lum *et al.* 1998, Meyer *et al.* 2002) and because the cost of replacing a nurse has been estimated to be twice their annual salary. Worse, reduced staffing levels can result in higher mortality, infection rates, length of hospital stays, drug errors and accident rates (Atencio *et al.* 2003).

Previous research suggests that POS predicts organisational commitment (Luchak & Gellatly 2007, Reid *et al.* 2008) and the quality of the supervisor-subordinate relationship, stress and wellbeing influences nurses’ organisational commitment (Rodwell *et al.* 2009, Brunetto *et al.* 2011a, 2011b). Furthermore, past studies suggest that employee engagement predicts organisational commitment (Coffman & Gonzalez–Molina 2002, Saks 2006); however, this relationship has not been established for nurses (McQueen 2004):

**H17. There is a negative relationship between nurses’ organisational commitment and turnover intentions.**
**Nurses in the USA and Australia**

The decision to choose hospital nurses from Australia and USA was partly because of their similarities - both countries have adopted increased undergraduate and post graduate education because of the demands of government and professional bodies for increased accountability and professionalism (Ellis 2006). Another similarity is that both countries experience a shortage of nurses, which is predicted to increase because both countries have an aging nurse workforce (Buchan & Calman 2004). Additionally, the work of nurses in the USA, Canada, Australia, UK and NZ has been affected by the implementation of New Public Management (NPM), embedding a market-oriented management approach and a cost-cutting mentality, affecting how nurses can nurse (Nowak & Bickley 2005). For nurses in the USA, the changes have been about standardisation of care, the introduction of nursing case management and the reduction of responsibilities related to budgets and leadership (McNeese-Smith 2001). In contrast, the Australian reforms have led to increased discretionary (including budgetary) supervisory power (Carroll & Steane 2002). Consequently, we expect different impacts of supervisor-nurse relationships on teamwork, engagement, wellbeing, commitment and turnover intentions:

**H18. The impact of supervisor-nurse relationships upon teamwork, engagement, wellbeing, organisational commitment and turnover intentions will be different for nurses in Australian hospitals compared those in USA.**

**METHODS**

**Aims**

This paper reports a study aimed at examining the impact of workplace processes (perceived organisational support, supervisor-subordinate relationships and teamwork) on the engagement,
wellbeing, organisational commitment and turnover intentions of nurses working in Australian and USA hospitals.

**Design**

Based on the literature review, we collected data during 2010-12 via a self-report survey (Ghauri & Grønhaug 2002) to test the hypotheses.

**Sample**

To gather data in Australia, 1600 anonymous surveys were distributed to five private sector hospitals across Australia. The hospital sizes were medium (300-500 beds) or large (>500 beds). All nurses were invited to voluntarily participate, with flyers distributed by the organisation supporting participation in the survey. The response was 510 useable surveys (response rate of 31.5%). The USA nurse sample came from two private sector hospitals in mainland USA, which agreed to participate in the study. Their 1815 nurses were then linked to the voluntary online survey. The response was 718 useable surveys (12 were discarded; 39.5% response rate). The response rates were close to the average 35.7% rate for data collected from organisations (Baruch & Holtom 2008).

The sample demographics (Table 1) indicate some gender similarities - predominantly female (Australia 93.7%; USA 96.1%). Additionally, in Australia, 61% were aged 45 years or above, 31.2% were aged 31-44 years and 7.8% were aged 30 years or below. In USA, 40.8% were aged 45 years or above, 37.6% were aged 31-44 years and 21.6% were aged 30 years or below. The sample is therefore representative of the nursing populations where, for example in Australia,
91% of nurses are female, 40% are aged 45 years or older and nearly 90% are qualified nursing professionals (ABS 2005).

**Data Collection**

Data were collected during 2010-11 in Australia and early 2012 in the USA. We used previously validated scales to operationalize the constructs in the path model, each item measured on a six-point Likert-type scale, from ‘1’=strongly disagree - ‘6’=strongly agree. *Leader-Member Exchange* (LMX) measures the satisfaction of employees with the quality of the relationship with their supervisor (Mueller & Lee 2002). A seven-item uni-dimensional scale was used (Graen & Uhl-Bien 1995) including, ‘My Nurse Manager is satisfied with my work’. *Satisfaction with Teamwork* was measured using Rubin, Palmgreen and Sypher’s (1994) version of an organisational culture survey developed by Glaser, Zamanou and Hacker (1987), using employees’ level of satisfaction as a function of teamwork, including, ‘People I work with are concerned about each other’

*Perceived Organizational Support:* was measured using the validated instrument by Eisenberger *et al.* (1997), including ‘My organisation cares about my opinion’. *Wellbeing* was measured using a four-item scale by Brunetto *et al.* (2011a) including, ‘Most days I feel a sense of accomplishment in what I do at work’.

*Employee Engagement:* was operationalized as employees’ positive work-related state of fulfilment and was measured using a nine-item scale from Schaufeli and Bakker (2003) (reflective measure), including, ‘Time flies when I’m working’.
Organisational Commitment: using the eight-item scale from Allen and Meyer (1990), we measured nurses’ commitment to their organisations (reflective measure), including, ‘I feel a strong sense of belonging to this hospital.’

Turnover Intention: we used a three-item scale adopted from Meyer et al. (1993) to operationalize turnover intention (reflective measure), the dependent variable. For example, ‘I frequently think about leaving my current employer’. Country. We listed a variable called ‘Aust-USA’, which identified whether nurses were working in Australian or USA hospitals.

Ethical considerations
Ethics approval was gained from the universities and hospital ethics committees. The cover sheet to the survey (for both versions) explained that participation was voluntary, participants’ withdrawal was available at any time with no negative repercussions, individuals’ results would remain confidential and researchers’ contact details were provided.

Data analysis
Several techniques was used to analyse the data in this study. Latent variable covariance-based structural equation modeling (SEM) was applied using maximum likelihood estimation. Also, SPSS v.20 for Windows was used to conduct a descriptive statistical analysis and AMOS 20.0 was used to check for common method variance analysis, conduct confirmatory factor analysis (CFA) and to test Hypotheses 1-18. The path model developed has two exogenous constructs and five endogenous constructs (sample size of 510 cases for Australia and 718 cases for USA).
According to MacCallum et al. (1996) and Hair et al. (2010), both samples have an adequate number of cases to conduct covariance-based SEM. Several indices within the confirmatory factor analysis were used to examine model fit, including the chi-square ratio ($\chi^2/\text{df}$), comparative fit index (CFI) (Bollen 1989), Tucker-Lewis index (TLI) (Tucker & Lewis 1973) and the root-mean-square error of approximation (RMSEA) (Steiger 1989).

This study applied a multi-group SEM analysis to examine the invariance between nurses in Australia and USA. To appropriately examine the hypotheses, we followed prescriptions by Byrne (2010) to examine the invariance. In particular, the chi-square difference test ($\Delta\chi^2$) was used to examine invariance of the hypothesised paths (Byrne 2010).

The SEM Maximum-likelihood estimation technique was used and requires data to be normally distributed. To ensure normality, 12 cases were removed from the Australian sample and 18 from the USA sample. Following removal, there was graphical and statistical support that the data are univariate normal, with skewness ranging from −1.64 to 1.71 and kurtosis ranging from −0.91 to 1.80. As well, Mardia’s (1970, 1974) normalised estimate of multivariate kurtosis fell below Bentler’s (2005) cut-off value of 5.

**Validity and reliability**

To reduce common method bias when the criterion and predictor variable cannot be measured in different contexts, as in this study, Podsakoff et al. (2003) recommend separating the measurement of the criterion and predictor variables psychologically and ensuring the survey is anonymous. The survey applied these recommendations. Several tests were undertaken to check
for common method variance based on the work of Podsakoff et al. (2003). We used Harman’s ex-post one factor test and conducted a common latent factor analysis using AMOS, which provided additional confidence that common method bias is not a major concern in the current study.

The results from the CFA indicate that the data are both valid and reliable. Factor loadings exceeded 0.70 and no factor loadings were greater than one (Kline, 2011). The average variance extracted (AVE) and composite reliability met the required cut off values of 0.50 and 0.70 respectively. Discriminant validity of the scales is confirmed for both samples as the square root of the AVEs is greater than the intercorrelation between other constructs in the path model (Tables 2 & 3).

RESULTS

Confirmatory factor analysis

The confirmatory factor analysis (CFA) included testing the measurement model and three alternate models to determine the best fitting model and to establish baseline model-fit. The initial results suggest a barely reasonable fit of the measurement model for the Australian ($\chi^2 / df = 2.94$, CFI = 0.907, TLI = 0.899, RMSEA = 0.062) and USA ($\chi^2 / df = 3.31$, CFI = 0.935, TLI = 0.929, RMSEA = 0.057) samples (see Table 4). Squared multiple correlations (SMC) indicate that two items (observed variables) from the POS scale did not adequately predict their respective latent variable. The two observed variables ‘If given the opportunity, this organisation would take advantage of me’ and ‘This organisation shows very little concern for me’ were removed from the POS scale because of poor SMC results in the Australia (SMC =
0.052 & 0.018) and USA (SMC = 0.182 & 0.188) samples. Also, the items were negatively worded and there appeared to be issues, although they were reverse coded. After re-examining model-fit, a large error covariance (M1 = 35 & 80) for the Australian and USA samples was identified between two LMX items ‘My supervisor is willing to use her/his power to help me solve work problems’ and ‘My supervisor is willing to help me at work when I really need it’. These items seemed to include similar ideas, so error covariance was estimated. Following removal of those two items and estimation of error covariance, the measurement model-fit improved for the Australian ($\Delta \chi^2 = 2.61$, CFI = 0.927 and TLI = 0.919 and RMSEA = 0.052) and USA samples ($\Delta \chi^2 = 2.99$, CFI = 0.945 and TLI = 0.939 and RMSEA = 0.049). The results further justify the examination of the structural model.

The three alternate models tested included a 5-factor model (POS and engagement removed), 6-factor model (POS removed) and a 7-factor (hypothesised) model (included all factors). The results indicate that the 7-factor model provided a good fit that was superior to both the 5- and 6-factor models for the Australian and USA samples (Table 4).

**Cross validation**

Respecifying a model to improve overall fit increases the risk that the researcher will capitalise on chance, which may cause results to be sample specific (MacCallum et al. 1996). Cross-validation is one method that can be used to deal with post hoc model-fitting issues and involves the re-specified (final) model being tested against a second independent model from the same population. Byrne’s (2010) invariance-testing strategy - testing replicability of the model - was used to cross-validate the data using the $\chi^2$ difference test. The results from the test of invariance indicate that the Australian calibration (N = 255) and validation samples (N = 255) and USA
calibration (N = 359) and validation (N = 359) samples are completely invariant. Specifically, the \( \chi^2 \) difference test revealed no statistically significant differences between the calibration and validation samples for the Australian (\( \Delta \chi^2 = 38.1, \Delta df = 30, p > 0.05 \)) and structural (\( \Delta \chi^2 = 59.97, \Delta df = 47, p > 0.05 \)) models and for the USA (\( \Delta \chi^2 = 38.1, \Delta df = 30, p > 0.05 \)) and structural (\( \Delta \chi^2 = 59.97, \Delta df = 47, p > 0.05 \)) models.

**Testing invariance**

The results from the chi-square difference test indicated statistically significant differences between the Australian and USA samples for both the measurement and structural models (see Table 4). Due to the differences and to examine H18, invariance between nurses in Australia and the USA were further examined. The results indicated that there were statistically significant differences between the samples with regards to paths from LMX to teamwork (\( \Delta \chi^2 = 99.3, \Delta df = 24, p < 0.001 \)), engagement (\( \Delta \chi^2 = 38.8, \Delta df = 24, p < 0.05 \)), wellbeing (\( \Delta \chi^2 = 42.3, \Delta df = 24, p < 0.05 \)), organisational commitment (\( \Delta \chi^2 = 38.3, \Delta df = 24, p < 0.05 \)) and turnover intentions (\( \Delta \chi^2 = 45.1, \Delta df = 24, p < 0.01 \)) - providing support for H18.

**Descriptions and Correlations**

Table 2 shows for USA, the supervisor-subordinate relationship is not significantly related to any other factors, but all other factors are related to each other (except age). In contrast, Table 3 identifies that for Australia, each variable is significantly related to the others.

**Testing the hypotheses**
Table 5 indicates that H1, H2, H3, H9, H10, H13, H15, H16 and H17 are supported in both Australia and USA. In contrast, neither H7, H11 nor H12 are supported in Australia or USA. However, H4, H5, H6 and H8 are supported in Australia, but not USA. Conversely, H14 was supported in USA, but not Australia. Finally, H18 was supported because the quality of supervisor-nurse relationships had no impact on outcomes in USA, however such relationships had significant impact in Australia. That is, there are significant differences between the countries, supporting the proposition. Path model results for both countries are presented in Figures 1 and 2.

**DISCUSSION**

This paper reports a study which examined the impact of workplace processes and relationships (perceived organisational support, supervisor-subordinate relationships and teamwork) on the engagement, wellbeing, organisational commitment and turnover intentions of nurses working in Australian and USA hospitals. Using SEM, the findings indicate that this model was more effective in predicting the correlations between variables for nurses in Australia compared with nurses in the USA. This means that most relationships predicted in the hypotheses were confirmed for Australia, except for the impact of teamwork on organisational commitment and turnover, plus the impact of engagement on turnover. In contrast, none of the paths related to supervisor-subordinate relationships were significant for the USA and neither were the paths from teamwork to organisational commitment or turnover.

In terms of POS, this study confirms previous results by Saks (2006), that POS predicts employee engagement and by Eisenberger *et al* (2002), that POS predicts organisational
commitment and turnover intentions. Our findings show that POS predicted engagement, organisational commitment and turnover intentions for nurses in both Australia and USA. Previous research by Sparrowe et al. (2005) and Li et al. (2011) showed that supervisor-subordinate relationships predicted engagement, Brunetto et al. (2011b, 2012a), Edmondson (2003) and Ellemers et al. (2004) showed that supervisor-subordinate relationships predicted teamwork and Brunetto et al. (2011a) and Brunetto et al. (2012b) found that they predicted wellbeing, organisational commitment and turnover intentions. In this study, such findings were similar for Australia, but not USA. One explanation is the differing ways that NPM has affected nursing supervisors (Nowak & Bickley 2005). In Australia, it has increased discretionary power and therefore supervisors arguably have greater influence on nursing outcomes. The reforms had the opposite effect in USA, where nursing supervisors’ impact on nursing outcomes is minimal. One of the aims of this paper was to examine whether teamwork was an antecedent of engagement, addressing Saks (2006) and Sen (2009) call to reveal the factors enhancing engagement. Research by Kalisch et al. (2007) argued that teamwork positively impacted on engagement; and our study supports that supposition for nurses in Australia and USA. Further, van Mierlo et al. (2001) and Brunetto et al. (2011b) argued that teamwork positively promotes employees’ perceptions of wellbeing and our findings supported those findings for nurses in Australia and USA. Rasmussen and Jeppesen (2006) found that teamwork was linked to organisational commitment and turnover intentions and this held in our study for Australia but not for USA. More research is required to explain why there was not a significant relationship for the USA sample, especially since SET would argue that effective workplace relationships (such as supervisor-nurse relationships) increase nurses’ access to relevant information,
resources, respect and decision-making and therefore benefit the individual and the organisation as a whole (Mitchell et al. 2001).

For engagement and wellbeing, Brunetto et al. (2012b) identified that both variables predicted organisational commitment and turnover intentions for police officers and our findings confirmed those same relationships for nurses in USA. However, engagement was not related to turnover intentions for nurses in Australia. Perhaps not surprisingly, our study confirmed many previous studies identifying the strong relationship between organisational commitment and turnover intentions (Meyer & Allen 1997). Thus, our findings support further understanding the concepts of engagement and wellbeing because they appear to be antecedents of how committed nurses are to their hospitals.

**Limitations**

The study is limited to one type of employee – hospital nurses - and those working within only two countries. Therefore further studies are required to support (or not) the results of this study, examining nurses in other contexts, other types of employees and across different countries. Another limitation is the use of self-report surveys, potentially causing common methods bias. However, to reduce common method bias, we undertook extra validity and reliability checks and analysis, as discussed previously. In any case, our results cannot be generalised internationally or even within one of the two countries examined, as the sample was limited to private sector hospital nurses. Further, there is the potential for potential for self- selection/participant bias. Nonetheless, the results do identify some potentially important considerations for the future of nursing management and these may apply in international settings.
CONCLUSION

This study sought to understand the path relationships between nurses’ workplace relationships, engagement, wellbeing, organisational commitment and turnover intentions and confirmed that POS and teamwork predicted engagement, wellbeing, organisational commitment and turnover intentions, but not supervisor-subordinate relationship for USA. Teamwork was not a workplace relationship that predicted organisational commitment or turnover for USA or Australian samples. Contrary to past studies, LMX does not predict organisation commitment for nurses in either Australia or USA hospitals. One explanation is that the impact of supervisors and POS overshadow the impact of teamwork. Another explanation is that the teamwork instrument itself did not adequately capture the full meaning or perceptions of respondents.

There are three major contributions of this paper. First, wellbeing is a predictor of turnover intentions, meaning that healthcare managers need to consider nurses’ wellbeing in everyday decision-making, especially within the cost-cutting paradigm that pervades healthcare provision. This is important because nurses are in short supply and are expensive to replace. Added to the growing evidence of nurses’ deteriorating work conditions (Cheung et al. 2004, Shacklock et al. 2009), the findings place new emphasis on the need for management to improve nurses’ wellbeing as a fiscal priority because society cannot function effectively without nurses. Our findings show that nurses with high wellbeing are committed to nursing and will likely remain nursing. Implications for practice therefore include the need for nurse management to consider nurse wellbeing in daily decision-making.
A second major finding is that in the USA, supervisors do not appear to play the mediating role for nurses, compared with Australia, Italy and the UK (in contrast with Ackroyd et al. 2007, Bolton 2003 and Brunetto et al. 2010, 2011, 2012). Implications for practice in Australia include the encouragement of nurse-supervisors continuing their current strong influencing and supporting role, to enhance nurse wellbeing and reduce turnover intentions. However, USA implications differ from Australia. One explanation could be that nurses’ perceptions of organisational support (which predicted organisational commitment and thereby turnover intentions) derive from sources different to those for nurses in Australia. Organisational management as a whole may be perceived as providing that support, rather than it being mediated by the supervisor, as perceived by nurses in Australia. Nevertheless, wellbeing was a strong predictor of organisational commitment and reduced turnover intentions and thus nurse management in both countries should focus efforts to enhance nurse wellbeing to improve nurse outcomes.

Our third contribution provides conflicting evidence about the impact of workplace relationships between the samples and when compared with previous research. SET argues that effective workplace relationships benefit employee and organisation because employees have networks, improved access to resources and support, making it easier to complete tasks and reduce the number of critical patient incidences. Therefore, we expected that there would be relationships between POS, supervisor-nurse relationship and teamwork and outcomes such as engagement, wellbeing, organisational commitment and turnover intentions. The theory was totally supported for POS and teamwork, but not for supervisor-subordinate relationships for nurses in the USA, nor for organisational commitment or turnover. One explanation is that the implementation of
health reforms has reduced the power of supervisors such that they no longer are crucial to the network that provides resources, knowledge, respect and support. More research is required to explain this anomaly.
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Figure 1. Path model of factors influencing nurse retention in Australia

*. Significant at the 0.05 level (2-tailed).

***. Significant at the 0.001 level (2-tailed).

**Figure 1. Path model of factors influencing nurse retention in Australia**
**Figure 2: Path model of factors influencing nurse retention in USA**

***. Significant at the 0.001 level (2-tailed).
Table 1: Demographics of samples

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<th>Australia</th>
<th></th>
<th>USA</th>
<th></th>
</tr>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
<td>N</td>
<td>%</td>
<td>Gender</td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td>32</td>
<td>6.3</td>
<td>Male</td>
<td>28</td>
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<tr>
<td>Female</td>
<td>478</td>
<td>93.7</td>
<td>Female</td>
<td>690</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>N</td>
<td>%</td>
<td>Age</td>
<td>N</td>
</tr>
<tr>
<td>&lt;=30 years</td>
<td>40</td>
<td>7.8</td>
<td>&lt;=30 years</td>
<td>155</td>
</tr>
<tr>
<td>31-44 years</td>
<td>159</td>
<td>31.2</td>
<td>31-44 years</td>
<td>270</td>
</tr>
<tr>
<td>45+ years</td>
<td>311</td>
<td>61.0</td>
<td>45+ years</td>
<td>293</td>
</tr>
<tr>
<td><strong>Position</strong></td>
<td>N</td>
<td>%</td>
<td>Position</td>
<td>N</td>
</tr>
<tr>
<td>Nursing unit manager</td>
<td>27</td>
<td>5.3</td>
<td>Nurse manager</td>
<td>17</td>
</tr>
<tr>
<td>Clinical nurse</td>
<td>82</td>
<td>16.1</td>
<td>Charge nurse</td>
<td>98</td>
</tr>
<tr>
<td>Registered nurse</td>
<td>281</td>
<td>55.1</td>
<td>Staff nurse</td>
<td>569</td>
</tr>
<tr>
<td>Endorsed enrolled nurse</td>
<td>78</td>
<td>15.3</td>
<td>Assistant nurse manager</td>
<td>22</td>
</tr>
<tr>
<td>Enrolled nurse</td>
<td>11</td>
<td>2.2</td>
<td>Unit educator</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>31</td>
<td>6.1</td>
<td>Advanced practice nurse</td>
<td>6</td>
</tr>
</tbody>
</table>

N = 510 for Australia; N = 718 for USA

Table 2: Descriptive statistics, means, standard deviations and correlations (USA)

<table>
<thead>
<tr>
<th></th>
<th>Mean b</th>
<th>S.D.</th>
<th>C.R.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Superv-nurse relnshp</td>
<td>4.51</td>
<td>1.10</td>
<td>0.94</td>
<td>(0.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Teamwork</td>
<td>4.59</td>
<td>0.82</td>
<td>0.91</td>
<td>-.04</td>
<td>(0.77)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Percvd Org Support</td>
<td>3.83</td>
<td>1.01</td>
<td>0.82</td>
<td>.06</td>
<td>.35**</td>
<td>(0.84)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Empee Engagemt</td>
<td>4.45</td>
<td>0.78</td>
<td>0.86</td>
<td>-.02</td>
<td>.44**</td>
<td>.52**</td>
<td>(0.75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Well-being</td>
<td>4.60</td>
<td>0.86</td>
<td>0.81</td>
<td>-.02</td>
<td>.46**</td>
<td>.52**</td>
<td>.78**</td>
<td>(0.77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Orgl Commitmt</td>
<td>4.00</td>
<td>0.87</td>
<td>0.94</td>
<td>.01</td>
<td>.35**</td>
<td>.60**</td>
<td>.61**</td>
<td>.61**</td>
<td>(0.82)</td>
<td></td>
</tr>
<tr>
<td>7. Turnover Intntn</td>
<td>2.61</td>
<td>1.36</td>
<td>0.83</td>
<td>.00</td>
<td>-.32**</td>
<td>-.48**</td>
<td>-.48**</td>
<td>-.52**</td>
<td>-.60**</td>
<td>(0.86)</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).  N = 718
** Correlation is significant at the 0.01 level (2-tailed).
C.R. = composite reliability;  Square root of AVE in parentheses

a Rated on a scale of 1= strongly disagree to 6 = strongly agree)
Table 3: Descriptive statistics, means, standard deviations and correlations (Australia)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>C.R.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Superv-nurse relnshp</td>
<td>4.67</td>
<td>0.95</td>
<td>0.93</td>
<td>(0.79)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Teamwork</td>
<td>4.63</td>
<td>0.78</td>
<td>0.88</td>
<td>.40**</td>
<td>(0.74)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Percvd Org Support</td>
<td>4.01</td>
<td>1.00</td>
<td>0.79</td>
<td>.50**</td>
<td>.35**</td>
<td>(0.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Empee Engagemt</td>
<td>4.69</td>
<td>0.71</td>
<td>0.86</td>
<td>.36**</td>
<td>.34**</td>
<td>.50**</td>
<td>(0.74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Well-being</td>
<td>4.75</td>
<td>0.81</td>
<td>0.80</td>
<td>.42**</td>
<td>.42**</td>
<td>.48**</td>
<td>.73**</td>
<td>(0.75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Orgl Commitmt</td>
<td>3.97</td>
<td>0.87</td>
<td>0.91</td>
<td>.43**</td>
<td>.37**</td>
<td>.59**</td>
<td>.59**</td>
<td>.60**</td>
<td>(0.78)</td>
<td></td>
</tr>
<tr>
<td>7. Turnover Intntn</td>
<td>2.80</td>
<td>1.37</td>
<td>0.78</td>
<td>-.45**</td>
<td>-.32**</td>
<td>-.47**</td>
<td>-.49**</td>
<td>-.57**</td>
<td>-.60**</td>
<td>(0.81)</td>
</tr>
</tbody>
</table>

*a. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
C.R. = composite reliability; Square root of AVE in parentheses

Rated on a scale of 1= strongly disagree to 6 = strongly agree
N = 510

Table 4: Results of model-fit and test of invariance

<table>
<thead>
<tr>
<th>Step 1: Baseline model</th>
<th>χ² / df</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respecified measurement model</td>
<td>2.61</td>
<td>.927</td>
<td>.919</td>
<td>.053</td>
</tr>
<tr>
<td>5-factor model – POS &amp; engagement removed</td>
<td>4.06</td>
<td>.859</td>
<td>.849</td>
<td>.077</td>
</tr>
<tr>
<td>6-factor model– POS removed</td>
<td>3.25</td>
<td>.895</td>
<td>.887</td>
<td>.07</td>
</tr>
<tr>
<td>7-factor model (All hypothesised paths)</td>
<td>2.67</td>
<td>.923</td>
<td>.916</td>
<td>.057</td>
</tr>
<tr>
<td><strong>USA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respecified measurement model</td>
<td>2.99</td>
<td>.945</td>
<td>.939</td>
<td>.049</td>
</tr>
<tr>
<td>5-factor model – POS &amp; engagement removed</td>
<td>5.07</td>
<td>.878</td>
<td>.871</td>
<td>.075</td>
</tr>
<tr>
<td>6-factor model– POS removed</td>
<td>3.90</td>
<td>.911</td>
<td>.917</td>
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<tr>
<td>7-factor model (All hypothesised paths)</td>
<td>2.98</td>
<td>.930</td>
<td>.925</td>
<td>.048</td>
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</table>

**Step 2: Invariance test across Australia and USA**

<table>
<thead>
<tr>
<th></th>
<th>Δχ²</th>
<th>Δdf</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (measurement)</td>
<td>611.05</td>
<td>30</td>
<td>.001</td>
</tr>
<tr>
<td>Model 2 (structural)</td>
<td>701.16</td>
<td>47</td>
<td>.001</td>
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</tbody>
</table>
Table 5: Regression weights to test the hypotheses

<table>
<thead>
<tr>
<th>Hypothesised Path</th>
<th>Australia B</th>
<th>p</th>
<th>Supported (Yes/No)</th>
<th>USA  B</th>
<th>p</th>
<th>Supported (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceived organisational support (POS) → Engagement</td>
<td>.482</td>
<td>***</td>
<td>Yes</td>
<td>.486</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>2 POS → Wellbeing</td>
<td>.425</td>
<td>***</td>
<td>Yes</td>
<td>.457</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>3 POS → Organisational commitment (OC)</td>
<td>.266</td>
<td>***</td>
<td>Yes</td>
<td>.369</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>4 LMX# → teamwork</td>
<td>.430</td>
<td>***</td>
<td>Yes</td>
<td>-.051</td>
<td>.194</td>
<td>No</td>
</tr>
<tr>
<td>5 LMX → Engagement</td>
<td>.091</td>
<td>.034</td>
<td>Yes</td>
<td>-.049</td>
<td>.153</td>
<td>No</td>
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<tr>
<td>6 LMX → Wellbeing</td>
<td>.127</td>
<td>.021</td>
<td>Yes</td>
<td>-.056</td>
<td>.100</td>
<td>No</td>
</tr>
<tr>
<td>7 LMX → OC</td>
<td>.032</td>
<td>.517</td>
<td>No</td>
<td>.003</td>
<td>.926</td>
<td>No</td>
</tr>
<tr>
<td>8 LMX → Turnover</td>
<td>-.191</td>
<td>***</td>
<td>Yes</td>
<td>.006</td>
<td>.863</td>
<td>No</td>
</tr>
<tr>
<td>9 Teamwork → Engagement</td>
<td>.186</td>
<td>***</td>
<td>Yes</td>
<td>.296</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>10 Teamwork → Wellbeing</td>
<td>.241</td>
<td>***</td>
<td>Yes</td>
<td>.368</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>11 Teamwork → OC</td>
<td>.023</td>
<td>.601</td>
<td>No</td>
<td>.019</td>
<td>.596</td>
<td>No</td>
</tr>
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<td>12 Teamwork → Turnover</td>
<td>-.009</td>
<td>.848</td>
<td>No</td>
<td>-.056</td>
<td>.141</td>
<td>No</td>
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<td>13 Engagement → OC</td>
<td>.322</td>
<td>***</td>
<td>Yes</td>
<td>.213</td>
<td>***</td>
<td>Yes</td>
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<td>14 Engagement → Turnover</td>
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<td>.187</td>
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<td>-.182</td>
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<td>Yes</td>
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<td>15 Wellbeing → OC</td>
<td>.225</td>
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<td>Yes</td>
<td>.241</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>16 Wellbeing → Turnover</td>
<td>-.332</td>
<td>***</td>
<td>Yes</td>
<td>-.183</td>
<td>***</td>
<td>Yes</td>
</tr>
<tr>
<td>17 OC → Turnover</td>
<td>-.317</td>
<td>***</td>
<td>Yes</td>
<td>-.362</td>
<td>***</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*** Correlation is significant at the 0.001 level (2-tailed).

#LMX: Leader-Member Exchange