

Supervisor-nurse relationships, training, empowerment and patient role ambiguity for nurses: Australia and England

ABSTRACT

This paper uses a Leader-Member Exchange theoretical framework to first, examine the impact of the supervisor-subordinate relationship upon nurses' satisfaction with training and perceptions of empowerment (as measured by self-determination, impact, competence and meaning), and then upon their role ambiguity in relation to patients. Second, we compared nurses' experiences in Australia and in England. Using surveys, data were collected during 2008 and 2010 from 1335 hospital nurses (900 in Australia and 435 in England).

Using path analysis, the findings identify that satisfaction with supervisor-nurse relationships and training, plus perceptions of empowerment, explain approximately a fifth of nurses' patient role ambiguity.

Key words: Leader-member exchange (LMX), Nurses, Training, Empowerment –Self-determination, Impact, Competence and Meaning, Role Ambiguity, England, Australia,

INTRODUCTION

Hospitals need, we suggest, adequately prepared, clinically skilled, responsive and effective nurses to contribute to positive patient outcomes. Among the contemporary challenges facing nursing is the whole issue of nurses' learning. The reason this is important is that the ability of nurses to learn affects patients' outcomes (Drach-Zahavy & Pud, 2010), and this is particularly the case in terms of recognising 'near misses' (Dawson, West & Yan, 2008). Learning can take place formally or informally (Marton & Tsui, 2004). Formal learning takes place either at the workplace or outside when nurses attend organised courses whereas informal learning can take place in the workplace via mentoring, work based learning and/or coaching programs or individually by engaging in self-directed learning. Additionally, Marton and Tsui recognised incidental learning taking place on the job, unintentionally, by observing colleagues during teamwork situations or by observing over time what works via a trial and error process.

In theory, hospitals encourage nurses to undertake training. However, in practice affective training may become thwarted by management, depending on the actual (as opposed to espoused) goals and objectives of a hospital. Many hospitals are plagued by fiscal restraint, which over-rides all other goals.

Many hospitals across Organisation for Economic Co-operation and Development (OECD) countries operate in an environment of efficiency-driven goals, and consequently, supervisors may ask nurses to work more shifts, instead of encouraging them to attend training (Ackroyd, Kirkpatrick & Walker, 2007; Buchanan & Considine, 2002; Brunetto, Farr-Wharton, 2005, 2006, 2007; Brunetto, Farr-Wharton & Shacklock, 2010), which will likely compromise nurses' access to formal learning options. The quality of supervisor-nurse relationships is therefore pivotal in influencing nurses' workloads, which affect nurses' access to training and subsequently is likely to affect perceptions of empowerment, such as self-

determination, impact, competence and meaning. Ackroyd et al. (2007) posits that nurses' work environment is very much dependent on their supervisors' ability to reconcile the organisational demands for increased efficiency with the nursing profession demands to nurture the interests of their nurses. Nurses have specific beliefs, values and aspirations from their nursing profession and nurse supervisors have specific responsibilities to ensure the professional development of nurses (Brock, Powell & Hinings 1999; Friedson, 2001; Maynard-Moody & Mushero, 2003). Hence, the supervisor relationship with nurses is an important factor affecting nurses' access, quality and quantity of learning options. This paper therefore argues that the quality of the supervisor-nurse relationship affects nurses' level of satisfaction with their formal learning from training, which affects their perceptions of self-determination, impact and competence and in turn, their levels of role ambiguity experienced in relation to patients.

One way of examining the supervisor-subordinate relationship is via a Leader-Member Exchange (LMX) theoretical lens. LMX theory theorises that supervisors treat employees differently. As a result, some employees experience high quality 'social exchanges' between supervisors and themselves - a high quality LMX relationship. Within such an environment, LMX theory posits that there are mutually beneficial exchanges of support, information, trust, participation in decision-making and respect between the supervisors and the employees (Mueller & Lee 2002). This environment is likely to promote knowledge and skills acquisition and sharing from attending formal training courses (Noe, 2005) and to decrease role ambiguity associated with reduced levels of 'near-misses' and/or harmful errors (Dawson, West & Yan, 2008). Hence, the LMX relationship is expected to be a vital ingredient affecting the quality of formal learning. However, it is unclear whether the experience is similar for English and Australian nurses.

There are numerous reasons for comparing nurses in Australia and England. First, Degeling Hill, Kennedy and Maxwell (2000) argued that historically there has been parity in nursing issues across England and Australia. By 1920, for example, both countries had established a legislative basis for systems of formal registration and more recently, both countries have implemented systems of levels within registered nursing positions and an increasing emphasis on the professionalization of nurses (Francis & Humphreys, 1999), as well as a change in focus on training (Cunich & Whelan, 2010). Second, there are similarities and differences in the cultural characteristics of people in Australia and England. Using Hostede's (1980) five cultural dimensions of cross-cultural characteristics across many different countries, Australia and England are reported as similar. In particular, in terms of power distance (measuring the degree to which unequal power distribution is tolerated in the society), individualism (the degree to which there is social integration), masculinity (the degree to which authority and performance are preferred), uncertainty avoidance (a society's tolerance for uncertainty in the future) and long-term orientation (the extent to which a society focuses on the long term), Australia and Great Britain are in the same categories. The biggest difference is in relation to uncertainty avoidance in which Australia has a slightly lower tolerance for uncertainty and therefore has more rules and regulations in place controlling behaviour – at least in theory. While there have been some criticisms of Hostede's work, his measures remain the most widely used in both academic and practical context (Bond, 2002). His findings in relation to Australia and England include that the power distance between supervisors and nurses in both locations is similar, as is the focus on individual rather than group performance. Hence, similarities and differences in the impact of nurses' level of satisfaction with the supervisor-subordinate relationship may provide useful information for healthcare managers in both countries. The following research questions were therefore developed to guide the data collection:

***RQ1:** What is the impact of the supervisor-subordinate relationship upon nurses' satisfaction with formal learning from training, nurses' perceptions of empowerment (self-determination, impact, competence and meaning) and in turn, role ambiguity in relation to patients?*

***RQ2:** In Australia and England, is the impact the same of supervisor-subordinate relationships upon nurses' satisfaction with training, perceptions of empowerment (self-determination, impact, competence and meaning) and consequently, role ambiguity in relation to patients?*

This paper has four parts. The first part provides a targeted review of the literature from which the hypotheses emerge. The second part describes the samples and methods used to test the hypotheses and address the research questions. The third part reports the results and uses the discussion section to identify pattern-matching with relevant past research and implications for healthcare managers. Finally, the paper concludes and offers suggestions for future research.

Leader-Member Exchange Theory

Leader-Member Exchange (LMX) theory suggests that supervisors manage employees differently, and as a result, employees who get on with their supervisor ('in-group') have different outcomes compared with employees who are not satisfied with their supervisor ('out-group'). 'In-groups' develop as a result of effective social networking between the supervisor and employees and consequently they begin to share information and resources and give each other support and trust and hence, respect develops in the workplace (Mueller & Lee, 2002; Yrie, Hartman & Galle, 2003). Using LMX theory, it is argued that the in-group is likely to have greater control over their work tasks (Yukl, 2006) and therefore it seems likely that they will be given greater access to training that builds knowledge and skills

compared with their 'out-group' counterparts. As a result, it is likely that nurses will perceive themselves as competent and equipped to deliver desirable services and outcomes for patients, which will then give their work greater meaning (Spreitzer, 2007). Because an effective supervisor-subordinate relationship encourages employees to participate in decision-making (Yrie, et al., 2003; Yukl, 2006), it is likely that in-group nurses will perceive themselves as being more autonomous in the workplace. Such working conditions are likely to reduce nurses' perceptions of role ambiguity (or increase their role clarity) in relation to patients.

Supervisor-Subordinate Relationship

The implementation of management reforms has affected professional groups such as nurses by increasing the power of supervisors so that they can make their professional staff more accountable and therefore reduce their staff's power (Ackroyd et al., 2007). In the case of nurses, this amplified accountability has involved increased record-keeping and data collection (Adcroft & Willis 2005; Brunetto & Farr-Wharton 2005, 2006, 2007). Additionally, the reforms expected supervisors to use their power to standardise service delivery, based on efficiency, by healthcare professionals in countries such as the United Kingdom (UK), United States of America, New Zealand and Australia. According to Ackroyd et al. (2007), the outcome has been that some nurses have experienced increased workloads and intensity of work, poorer working conditions, inflexible scheduling and loss of work autonomy; however, other nurses have not been as negatively affected. The important factor appears to be the extent to which supervisors mediate organisational management goals for nurses (Ackroyd, et al., 2007; Bolton, 2003). Some nurses have supervisors who have actively embraced their increased managerial power at their nurses' expense (Coyle-Sharpire, 1999), and this paper argues that those nurses are likely to be less satisfied with the training experience.

Training

Training has traditionally been the formal means by which employees engage in planned activities aimed at maintaining and enhancing their clinical/professional skills and knowledge (Noe, 2005; Noe & Wilk, 1993). The current pathway to become a registered nurse in Australia is via a university degree and this has been the situation for the past two decades. While the situation is not mandatory, it is increasingly becoming the norm for nurses in the UK to complete an undergraduate degree (Robinson, Murrells & Clinton, 2006). In both countries, once in the job, nurses are expected to continually update their skills and knowledge, either attending formal courses in their own time or as part of their job specifications. However, not all nurses have equal access to training (Campbell, Nilsson, & Andersson, 2007).

Even so, simply attending training courses does not guarantee that the training will provide a good learning experience. In particular, past research has identified the importance of supervisor support in affecting how satisfied employees are with their training (Bartlett, 2001; Bates, Holton & Seyler, 1996; Tracey, Timothy, & Mathieu, 2001). Therefore, a direct relationship between nurses' satisfaction with their supervisor-subordinate relationship and their satisfaction with training is expected, as follows:

H1: *In Australia and England, nurses' satisfaction with their supervisor-subordinate relationships is positively related to their satisfaction with training.*

Empowerment (self-determination, impact, competence and meaning)

Employee empowerment refers to the degree to which employees have power in the workplace – especially in relation to decision-making (Ang, 2002). Employee empowerment is not actively promoted or encouraged in Australia (Gollan, 2005) and there is very little

focus on empowerment in healthcare generally. Coyle-Shapiro (1999) suggests one reason explaining the lack of employee empowerment is that some supervisors perceive their own power base to be potentially threatened by empowering employees and therefore they resist any attempts to implement such schemes.

Spreitzer (2007) conceptualises the empowerment construct as two dimensions: structural and psychological (Spreitzer, 1995; 1996). Structural empowerment refers to whether the organisational structures and processes facilitate optimal employee performance (Spreitzer, 1995; 1996). Psychological empowerment refers to employees' perceived levels of power from working within a particular environment (Spreitzer, 1995; 1996), and is the focus of this study. Spreitzer (1995; 1996) conceptualised empowerment as a function of four constructs: 'self-determination' (an employee's sense of autonomy about workplace choices); 'impact' (an employee's beliefs about their impact in the workplace); 'competence' (self-efficacy about an employee's capabilities to undertake tasks which captures one of the Learning Organisation variables that tests personal skills mastery (Senge et al., 2000); and 'meaning' (which refers to the extent to which the work undertaken achieves personal work goals and fits in with the employee's own beliefs and values). While there is evidence that employee's perception of empowerment affects organisational effectiveness (Conger & Kanungo, 1988; Gomez & Rosen, 2001; Seibert, Silver & Randolph, 2004; Spreitzer, 1995, 1996; Thompson & Prottas, 2006), there is less evidence of the link between formal and incidental learning and empowerment.

Using LMX theory, under ideal conditions nurses are most likely to feel most empowered when they are given access to training because these are likely to be the conditions that would facilitate the sharing of adequate information, resources, support and participation in decision-making. In addition, because nurses are professionals, they are likely to experience even greater autonomy in the workplace because of their knowledge-specific

expertise (Hoyle & John, 1995). However, the implementation of recent reforms affecting nursing professionals has decreased their level of structural empowerment (by increasing their level of accountability) (Ackroyd, et al., 2007). The reforms have had the effect of 'increasing bureaucracy and managerial supervision... leading to shifts in the nature and quantity of work' for nurses (Ackroyd, et al., 2007: 18). This means that while all professionals continue to have autonomy to make decisions in the workplace based on their *value discretionary power* because of the complexity of the work undertaken; the change in the supervisor-subordinate relationship may have caused a change in the perception of autonomy for nurses. Further, it is unclear whether the experiences are similar for nurses in Australia and England. To examine these premises, the following hypothesis is proposed:

H2: *In Australia and England, nurses' satisfaction with training is positively related to their perceptions of self-determination, impact, competence and meaning.*

Role Ambiguity in relation to patients

Role ambiguity is the context in which the likelihood of adverse outcomes for patients increased (Dawson, et al., 2008; Firth-Cozens, 2001). It describes a situation where nurses are unclear about what they should do for a particular patient because of conflicting messages given by different authorities, such as a supervisor and/or a senior clinical nurse. In contrast, role clarity is enhanced by clear messages from supervisors and effective training improving competence and mastery of knowledge (Jolke & Duhan 2000).

Role ambiguity is less likely when attending to patients with routine problems. On the other hand, when a patient presents with complicated circumstances, (such as when a surgical patient demonstrates signs of severe irrationality), this is the breeding ground for role ambiguity. This is when the role of an effective supervisor-nurse and/or nurse-nurse relationship becomes invaluable in assisting nurses with vital information needed to make

evidence-based, best practice clinical nursing decisions (Jolke & Duhan, 2000; Rhoads, Singh & Goodell, 1994). The following hypotheses test this proposition, including whether nurses in Australia and England have similar experiences:

H3: *In Australia and England, there is an inverse relationship between nurses' perceptions of self-determination, impact, competence and meaning and role ambiguity.*

H4: *In Australia and England, nurses' perception of role ambiguity is a function of their supervisor-subordinate relationship in addition to their satisfaction with training and their perceptions of self-determination, impact, competence and meaning.*

Nurses in Australia and England

Australia and England are similar to other OECD countries in experiencing an aging society and a similar ageing workforce profile (Waterfield, 2010; Cunich & Whelan, 2010). An effective healthcare sector requires skilled experienced healthcare professionals and the aging population is a major challenge that both countries must negotiate. The supervisor-subordinate relationship is a major factor affecting nurse retention (Tauton, Boyle, Woods, Hansen & Bott, 1997) and that relationship is more important for women as they age (Moseley, Jeffers & Paterson, 2008; Shacklock, Brunetto & Nelson, 2009). However, it is unclear whether the management of nurses is similar across English and Australian hospitals. Additionally, the two countries are similar in that they both face difficulties with recruitment (Frijters, Shields & Wheatley-Price, 2006) and retention (Cunich & Whelan, 2010). Moreover nurses move from England and Australia and vice versa because of the ease that has developed due to the similarities in structure and approach (Buchan & Seccombe, 2006). Next, both countries face an extra difficulty because of the number of nurses moving from public to private sector (Doiron, Hall & Jones, 2008).

Finally, both English and Australian nurses have been affected by the implementation of reforms affecting supervising practices, although the reforms have not been uniformly implemented across countries. Britain and New Zealand have focused more on separating policy development from service provision. By contrast in Australia, the focus has been on the adoption of increased managerial control to achieve government objectives (Carroll & Steane, 2002). However, Britain, Australia, NZ and the UK are similar in that reforms have focused on achieving increased efficiency to achieve significant cost cutting (Adcroft & Willis, 2005). It is therefore expected that English nurses will have higher levels of satisfaction with supervisor-subordinate relationships compared with Australian nurses, and this may negatively affect their subsequent levels of satisfaction with training, perceptions of self-determination, impact, competence and meaning, and in turn patient role ambiguity. To examine this premise, the following hypothesis is proposed:

H5: *In England, nurses have significantly higher levels of satisfaction with their supervisor-subordinate relationships, training, empowerment (self-determination, impact, competence and meaning) and subsequently, have lower levels of role ambiguity in relation to the client, than nurses in Australia.*

METHODS

This research uses a cross-sectional design to gather data to test whether the quality of supervisor-subordinate relationships impacts on teamwork and training and in turn, empowerment and affective commitment. Data were collected using a survey-based, self-report strategy (Ghauri & Gronhaug, 2002). The emerging patterns of data were then compared with the findings of previous research.

All nurses in the study are from hospitals that have similar acute clinical settings and experience comparable patient case mix. The Australian sample included private sector nurses from four states of Australia (New South Wales, Queensland, Western Australia and

Victoria), working in either private small (<300 beds), medium (300-500 beds) or large (>500 beds) hospitals. The English sample comprises public sector nurses working in two NHS Foundation Trusts in the North of England covering 3 large hospitals.

To gather data from Australian nurses, 3,200 anonymous surveys were distributed to the 7 hospitals and nurses were invited to participate. The response was 900 useable surveys - a response rate of approximately 28%. To gather data from the English nurses, 2,000 anonymous surveys were distributed to the three hospitals and all nurses were invited to complete them. In total, 435 responses were received, providing a response rate of approximately 22%.

Path analysis was used to test the impact of supervision practices on nurses' satisfaction with training and the four dimensions of empowerment (self-determination, impact, competence and meaning) and in turn, patient role ambiguity. In particular, path analysis using an ordinary least squares (OLS) approach was used to test the hypotheses. The advantage of path analysis is that it permits more than one equation to predict the dependent variable (role ambiguity in relation to patients) and therefore it includes the indirect impact of supervisor-nurse relationship and training into the bigger equation. OLS is an explanation of variance and the overall R^2 measure identifies the 'goodness of fit' overall for the proposed model (Ahn, 2002).

Measures

The measures were generated from the extant literature and presented using statements to be rated on a 6-point Likert-type scale, with 1 = strongly disagree, ranging to 6 = strongly agree. *Satisfaction of nurses with the quality of their supervisor-subordinate relationship* was measured using a seven-item uni-dimensional scale (LMX-7), developed by Graen and Uhl-Bien (1995). According to Gerstner and Day (1997), the uni-dimensional scale updated by Graen and Uhl-Bien (1995) is the most commonly used tool for measuring LMX quality and

has the best psychometric properties of all the instruments reviewed. Specific items included, 'My supervisor is willing to help me at work when I really need it'. *Nurses' satisfaction with Training* was measured using the instrument developed by Meyer and Smith (2000), and included, 'I am happy with the training opportunities provided for me in this hospital'. *Nurses' perception of empowerment* was operationalised using Spreitzer's (1996) measures of *self-determination*, including, 'I have a great deal of control over what happens in my ward'; *impact*, including, 'My impact on what happens in my ward is large'; *competence*, including, 'I am confident about my ability to do my job'; and *meaning*, including, 'My job activities are personally meaningful to me'. *Role ambiguity in relation to patients* was measured using 3 items of Johlke and Duhan's (2000) instrument, including, 'I am certain of what I am expected to do for my patients'. These items actually measure role clarity (the opposite of role ambiguity); a high score means that nurses are clear about how to treat their patients, and have low ambiguity. Job type was measured by nurses choosing between a variety of position titles, such as Nurse Unit Manager, Registered Nurse and Enrolled Nurse.

RESULTS

The Australian nurse sample comprised 33 males and 867 females and the English nurse sample comprised 19 males and 414 males (with two recipients not giving their age). In terms of those aged under thirty years of age, 101 nurses were Australian and 168 were English. In terms of those aged between thirty and forty-five, 340 were Australian and 88 were English. In terms of those aged over forty-five years of age, 486 were Australian and 171 were English. The Australian sample was older than the English sample. These sample results are representative of the nurse populations in both countries. In Australia, 91% of nurses are

females and 40% are aged 45 years or older (ABS 2005) and in the United Kingdom, 89% are females and 65% are aged 40 and over (Nursing and Midwifery Council, 2008).

Factor Analysis

Each variable has been developed and validated in previous research. Hence the findings detailed here are the results of factor analysis. The correlation matrix identified many correlations exceeding .3, indicating the matrix was suitable for factoring. The Bartlett's test for Sphericity was significant (Chi-square value=13,046.442, $p < .001$, df 351) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .829 - well above the .6 requirement. When Principal Axis Factoring was undertaken to extract the variables, seven factors had eigenvalues greater than one and 69.34% of the variance could be explained using these seven factors –ensuring the validity of the variables.

Correlation Matrix

Table 1 details the correlation coefficients for each variable. All variables were significantly related to one another except for the control variable – job type (Manager, Registered Nurse, Enrolled Nurse or Nursing Assistant).

[Insert Table 1 here]

Results from analysis

To address the first hypothesis (*In Australia and England, nurses' satisfaction with their supervisor-subordinate relationships is positively related to their satisfaction with training*), a regression analysis was undertaken and the findings suggest that the hypothesis is supported (see Table 2 for beta scores). The findings indicate that:

- (a) All Nurses: $F=256.325$ $p < .001$ $R^2=16.7\%$,
- (b) Australian Nurses: $F=172.314$, $p < .001$, $R^2 = 16.1\%$,

(c) English nurses: $F=197.627$ $p<.001$ $R^2=18.4\%$.

This means that almost a fifth of the variance of the combined nurses' perceptions of training can be accounted for by their satisfaction with the supervisor-nurse relationship and this figure was similar for both English and Australian nurses.

[Insert Table 2 here]

To address the second hypothesis (*In Australia and England, nurses' satisfaction with training is positively related to their perceptions of self-determination, impact, competence and meaning*), a regression analysis was undertaken and the findings suggest that the hypothesis is mostly supported, with three of the four measures being significant, but not impact (see Tables 3, 4, 5 and 6 for beta scores).

1. The impact of nurses' satisfaction with training on self-determination is:

(a) All Nurses: $F=82.927$ $p<.001$ $R^2=10.9\%$,

(b) Australian Nurses: $F=78.806$, $p<.001$ $R^2 = 9\%$,

(c) English nurses: $F=92.13$ $p<.001$ $R^2=15.9\%$.

2. The impact of nurses' satisfaction with training on impact is:

(a) All Nurses: $F=147.741$ $p<.001$ $R^2=10\%$,

(b) Australian Nurses: $F=93.827$, $p<.001$, $R^2 = .95\%$,

(c) English nurses: $F=155.420$ $p<.001$ $R^2=11.3\%$.

3. The impact of nurses' satisfaction with training on competence is:

(a) All Nurses: $F=3.558$ $R^2=.8\%$,

(b) Australian Nurses: $F=.342$, $R^2 = .1\%$,

(c) English nurses: $F=3.182$ $R^2=.2\%$.

4. The impact of nurses' satisfaction with training on meaning is:

(a) All Nurses: $F=37.215$ $p<.001$ $R^2=3.4\%$,

(b) Australian Nurses: $F=26.892$, $p<.001$ $R^2 = 2.9\%$,

(c) English nurses: $F=41.553$ $p<.001$ $R^2=4.7\%$.

The findings suggest the strongest relationship is between training and self-determination. Training explained a sixth of the variance of English nurses' perception of self-determination and that this was more than the variance for Australian nurses. Additionally, approximately ten percent of both English and Australian nurses' perception of their impact in their job can be accounted for by their level of satisfaction with training, and again the relationship was stronger for England than for Australia. It is curious that satisfaction with training accounted for such a small percentage of nurses' perception of competence.

[Insert Tables 3, 4, 5 and 6 here]

To address the third hypothesis (*In Australia and England, there is an inverse relationship between nurses' perceptions of self-determination, impact, competence and meaning, and role ambiguity*), a regression analysis and examination of means were undertaken and the hypothesis is partly supported (See Tables 7 and 8).

1. The impact of nurses' perception of self-determination on role ambiguity is:

(d) All Nurses: $F=68.131$ $p<.001$ $R^2=4.3\%$,

(e) Australian Nurses: $F=19.134$, $p<.001$ $R^2 = 2.1\%$,

(f) English nurses: $F=37.444$ $p<.001$ $R^2=3.9\%$.

2. The impact of nurses' perception of impact on role ambiguity is:

(d) All Nurses: $F=29.856$ $p<.001$ $R^2=3.2\%$,

(e) Australian Nurses: $F=11.794$, $p<.001$ $R^2 = 1.3\%$,

(f) English nurses: $F=12.564$ $p<.001$ $R^2=2.8\%$.

3. The impact of nurses' perception of competence on role ambiguity is:

(d) All Nurses: $F=211.653$ $p<.001$ $R^2=12.4\%$,

(e) Australian Nurses: $F=118.3182$, $p<.001$ $R^2 = 11.6\%$,

(f) English nurses: $F=183.219$ $p<.001$ $R^2=16.1\%$.

4. The impact of nurses' perception of meaning on role ambiguity is:

(d) All Nurses: $F=94.193$ $p<.001$ $R^2=6.6\%$,

(e) Australian Nurses: $F=59.723$, $p<.001$ $R^2 = 6.2\%$,

(f) English nurses: $F=38.944$ $p<.001$ $R^2=8.3\%$.

The findings suggest that the strongest correlation is between nurses' perception of competence and their level of patient role ambiguity. Competence explained a sixth of the variance of English nurses' perception of role ambiguity and that this was more than the variance for Australian nurses. The findings also suggest a relationship between perceptions of meaning and role ambiguity, with English nurses similarly having a stronger relationship than Australian nurses. Additionally, the higher the mean for patient role ambiguity, the greater the nurses experienced role clarity instead of role ambiguity. Hence the findings suggest inverse relationships between competence and role ambiguity, plus meaning and role ambiguity. The relationships between self-determination and role ambiguity, plus impact and role ambiguity are not as clear.

[Insert Tables 7 and 8 here]

To address the fourth hypothesis (*In Australia and England, nurses' perception of role ambiguity is a function of their supervisor-subordinate relationship in addition to their satisfaction with training and their perceptions of self-determination, impact, competence and meaning*) regression analysis was undertaken. The findings in Table 9 indicate that these factors were important in affecting role ambiguity. In particular, the supervisor-subordinate relationship as well as nurses' perception of competence and the meaning that nursing gave to nurses all significantly affected their perception of role ambiguity – the variance of these factors accounted for approximately a fifth of nurses' perception of role ambiguity. Interestingly, training was not significant for either Australian or English nurses, although the

likely outcome of effective training is a perception of competence, especially when it is combined with practical experience, so it may be that the impact of training was shadowed by nurses' perception of competence.

[Insert Table 9]

To address the fifth hypothesis (*In England, nurses have significantly higher levels of satisfaction with their supervisor-subordinate relationships, training, empowerment (self-determination, impact, competence and meaning) and subsequently, have lower levels of role ambiguity in relation to the client, than nurses in Australia*), a MANOVA was undertaken. A MANOVA is used to examine the impact of location (England versus Australia) on the demographics (gender and age) and variables (ie supervisor-nurse relationships (LMX), training and development, self-determination, impact, competence and meaning and role ambiguity). If the multivariate F value is significant, then it means that there is a significant difference in the means of the variables. The findings suggest that there is a significant difference in gender, age, LMX, self-determination, competence and role ambiguity for English and Australian nurses suggesting that the management experiences of English nurses is somewhat different to that of Australian nurses and hence the hypothesis is somewhat supported (See Table 8).

[Insert Table 8 here]

DISCUSSION

The development of high quality relationships (such as the supervisor-nurse relationship), according to LMX theory results from positive social interactions and over time facilitates the sharing of knowledge, support and resources (Gerstner & Day 1997; Mueller & Lee 2002; Wayne, Shore & Linden 1997; Yrie, et al., 2003). As predicted by LMX theory, the findings identified a significant relationship between supervisor-nurse relationship and nurses' satisfaction with training. The relationship was similar for both English and

Australian nurses. This is an important finding because both countries are emphasizing the professionalization of nursing via a training route.

However, of concern is the significant difference in the levels of satisfaction with the supervisor-nurse relationship with Australian nurses, on average, reporting they are only almost satisfied and English nurses, on average, being only slightly satisfied. The implication of this finding in terms of LMX theory is that the Australian nurses were almost satisfied with the flow of resources, information, respect and decision-making power; however, English nurses were only slightly satisfied and this must be a concern for healthcare managers – especially in England.

Additionally, both English and Australian nurses were slightly satisfied with their quality of training. These findings confirm earlier research by Bates et al (1996), Tracey, et al. (2001) and Bartlett (2001) of the importance of supervisor support in affecting Australian and English nurses' levels of satisfaction with training. However, the evidence suggests a work environment where the supervisor-subordinate relationship is somewhat dis-functional and only provides a tenuous focus on formal learning from training courses. Because nurses across both countries were, on average, only somewhat satisfied with training, more questions need to be asked about the relevance, quality and applicability of the training, plus the availability of opportunities to attend or access training and future research must examine those issues. These findings suggest that the present training regime is not ideal for promoting learning and improving clinical mastery competence, especially considering the non significant weak relationship between training and competence. Since both countries emphasize (at least in policy) a commitment to the professionalization of nurses with a focus on training (Cunich & Whelan, 2010), these findings challenge whether the training practices are appropriate, and whether nurses have access to training in current environments where typically, hospitals and the managers and nurses within are being asked to do more with less.

Moreover, both English and Australian nurses perceived themselves to be competent and agree that nursing is personally meaningful to them. However, both samples reported they have minimal impact upon their patients and are only somewhat autonomous in the workplace. The strongest relationships are between training and self-determination, plus training and impact, suggesting that training does play an important role in improving nurses' perceptions of empowerment, however, not in improving their perceptions of competence. On the other hand, there was a significant relationship between nurses' perceptions of competence and role clarity as expected.

The second theme of the paper was to examine the extent to which the impact of the supervisor-nurse relationship is the same for English and Australian nurses' perceptions of teamwork, training and in turn, empowerment and patient role ambiguity. The path analysis indicates a stronger relationship between the variables for English nurses, compared with Australian nurses, explaining almost a fifth of their perceptions of role ambiguity (See Figure 1).

This study has a number of limitations. Firstly, the age and gender disparity between the samples identifies that the Australian sample was significantly older had more females compared with the English sample and this could have affected the outcome because older workers seek different rewards from working to younger workers, and they value different outcomes (Guest & Shacklock, 2005). However, each of the sample demographics was representative of the composition of their respective nursing populations in Australia and United Kingdom. Therefore more studies are required across greater numbers of nursing samples to test the generalisability of these findings. The other limitation is the use of self-report surveys causing common methods bias. However, Spector (1994) argues that self-reporting methods is legitimate for gathering data about employees' perceptions, as long the instrument reflects an extensive literature review and pattern-matching is used to support

interpretations of the data. Additionally, common method bias is a possibility within self-report cross-sectional studies (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) where common method variance may influence the significance of relationships between variables.

Implications

Of the two groups, the Australian nurses were the more satisfied with their supervisor-nurse relationship and experienced lower levels of role ambiguity. However, the means for both groups suggest that Australian and English nurses appear to operate in work contexts that are far from ideal in promoting learning from training and this has implications for their ability to maintain and grow their knowledge and experience base, which must affect the quality of care that they can deliver to the patient. The present supervisor-nurse relationship could be a factor because of changes in supervisor responsibilities to ensure increased nurse accountability. If this is the case, then the changes do not appear to have promoted the professional development of nurses. Hence, the reforms that have increased the power of supervisors and reduced the power of professionals are unlikely to be delivering a more informed skilled nurse workforce, irrespective of whether the reforms are delivering efficiency gains to hospitals.

Additionally, nurses reported satisfaction with training as not significant in their perceptions of competence, and that this suggests that either the training itself is not appropriate, or is of insufficient quality or simply not realistically available. Within tight budgetary constraints, nurses still need to be able to attend appropriate training opportunities to enhance their clinical skills, responsiveness and effectiveness so they can contribute to positive health outcomes for patients. Hospital leadership must take note of this finding about nurses' lack of satisfaction with training in hospitals.

CONCLUSION

The findings from this study add new knowledge about the importance of an effective workplace relationship on nurses' satisfaction with training, their perceptions of empowerment - as measured by competence, meaning, impact and self-determination - and their role ambiguity in relation to patients. Also, the findings contribute new knowledge about the differences between the Australian and English nurses' experiences. It seems likely that a healthcare manager wanting to promote an empowered nurse workforce, capable of making evidence-based best-practice decisions in the ward, must focus on ensuring an effective supervisor-nurse relationship is embedded within the organization, which should impact positively on enhancing incidental learning from teamwork and formal learning from training courses.

Additionally, the professionalization of nursing requires a robust learning environment facilitating formal learning from effective training programs and incidental learning from partaking in teamwork opportunities on the job. The findings from this study challenge healthcare managers supervising both Australian and English part time and full time nurses to rethink the quality of learning and the learning opportunities available to nurses. There is an increasing focus on delivering evidence-based best-practice healthcare to patients, however, these findings suggest less than ideal opportunities are available for nurses to improve their knowledge and skills. Much of the change required rests with changing the role of the nurse supervisor, since they determine whether nurses can be rostered off in order to attend training as well as providing the role model for sharing knowledge, resources and support in the ward. A stronger focus on professionalising the role of the nurse supervisor away from just being an organisational supervisor and towards being a professional mentor and role model could be an important step in improving the learning context for nurses generally. Hence, the professionalization of nursing may well depend on a changed role for the supervisor.

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TABLE 1:
Correlations and Cronbach's alpha coefficients

	1	2	3	4	5	6	7	8
1 Job Type (control)	1							
2 LMX	-.023	1						(.93)
3 Training	-.05	.4**	1					(.84)
4 Self-determination	.05	.3**	.33**	1				(.84)
5 Impact	.02	.36**	.32**	.49**	1			(.87)
6 Competence	-.015	.15**	.08	.32**	.26**	1		(.78)
7 Meaning	-.021	.15**	.19**	.22**	.2**	.37**	1	(.86)
8 Role Ambiguity (DV)	-.05	.29**	.19**	.21**	.18**	.35**	.26**	1 (.87)

N = 1499.

Statistically significant Pearson correlation scores - **p < .01, * p < .05, Two-tailed tests

Cronbach alpha coefficients of the composite scales scores are in brackets

TABLE 2
Regression analysis detailing supervisor-nurse relationship as a predictor of training

Satisfaction with training	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
LMX	.40**	.43**	.40**
F	172.31**	185.63**	256.325**
R²	.161	.17	.167

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 3
Regression analysis detailing training as a predictor of Self-determination

Self-determination	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.3**	.40**	.33**
F	78.81**	92.13**	82.93**
R²	.09	.159	.109

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 4
Regression analysis detailing training as a predictor of Impact

Impact	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.31**	.34**	.32**
F	93.83**	155.42**	147.74**
R²	.095	.113	.10

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 5
Regression analysis detailing training as a predictor of Competence

Competence	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.03	.09	.05
F	.34	3.56	3.18
R²	.001	.008	.002

TABLE 6
Regression analysis detailing training as a predictor of Meaning

Meaning	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.17**	.22**	.18**
F	26.89**	41.55	37.21**
R²	.029	.047	.034

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 7
Regression analysis detailing competence, meaning, impact and self-determination as predictors of Client Ambiguity

Client Ambiguity	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Self-determination	.14**	.20**	.21**
F	19.13**	37.44**	68.13**
R²	.021	.039	.043
Impact	.11**	.17**	.18**
F	11.79**	12.56**	29.86**
R²	.013	.028	.032
Competence	.34**	.40**	.35**
F	118.32**	283.22**	211.65**
R²	.116	.16	.124
Meaning	.25**	.29**	.26**
F	59.72**	138.94**	94.19**
R²	.062	.083	.066

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 8
Results from MANOVA: Nurses in Australia and England

	<u>Australia[#]</u>		<u>England^{##}</u>		F value
	Mean ^a	SD	Mean	SD	
LMX	4.72	1.1	4.34	1.0	39.46**
Training	4.04	1.2	4.07	1.1	.179
Competence	5.2	.65	5.11	.66	4.499*
Meaning	5.19	.72	5.23	.72	.997
Self-determination	4.39	.96	4.28	1.05	3.601*
Impact	3.73	1.2	3.67	1.22	.851
Role Ambiguity	5.64	.54	5.48	.59	22.35**
Age	2.46	.64	2.19	.75	44.59**
Gender	1.96	.18	1.8	.39	94.95**

[#] N= 900 ^{##} N = 435

^a Mean: 1 = Strongly Disagree, through to 6 = Strongly Agree

* Correlation is significant at the 0.05 level (2-tailed).

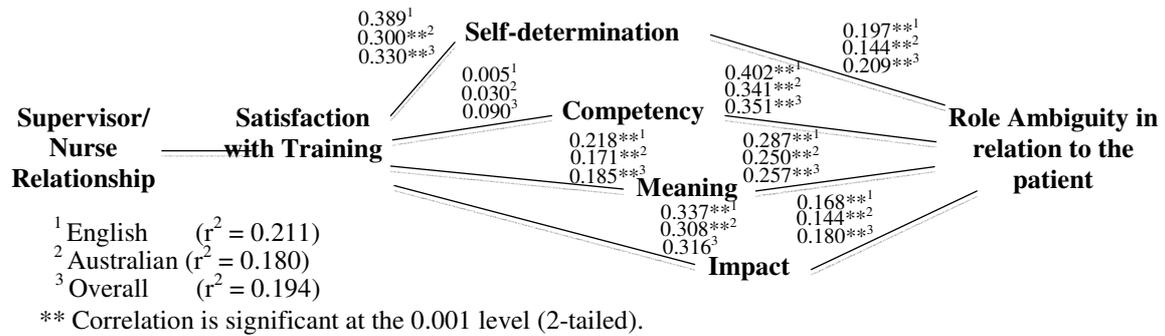
** Correlation is significant at the 0.001 level (2-tailed).

TABLE 9
Regression analysis detailing LMX, training, competence, impact, meaning and self-determination as predictors of patient role ambiguity

Role Ambiguity	Australian nurses β	English nurses β	Combined nurses β
LMX	.23**	.13**	.21**
Training	-.02	.06	.00
Self-determination	.03	.02	.03
Impact	-.04	-.037	-.05
Competence	.27**	.34**	.3**
Meaning	.12**	.13**	.12**
R²	.18	.211	.194
F	32.692**	109.032**	53.387**

FIGURE 1

Path Analysis showing the significant relationship between LMX, training, empowerment and patient role ambiguity



Supervisor-nurse relationships, training, empowerment and patient role ambiguity for nurses: Australia and England

ABSTRACT

This paper uses a Leader-Member Exchange theoretical framework to first, examine the impact of the supervisor-subordinate relationship upon nurses' satisfaction with training and perceptions of empowerment (as measured by self-determination, impact, competence and meaning), and then upon their role ambiguity in relation to patients. Second, we compared nurses' experiences in Australia and in England. Using surveys, data were collected during 2008 and 2010 from 1335 hospital nurses (900 in Australia and 435 in England).

Using path analysis, the findings identify that satisfaction with supervisor-nurse relationships and training, plus perceptions of empowerment, explain approximately a fifth of nurses' patient role ambiguity.

Key words: Leader-member exchange (LMX), Nurses, Training, Empowerment –Self-determination, Impact, Competence and Meaning, Role Ambiguity, England, Australia,

INTRODUCTION

Hospitals need, we suggest, adequately prepared, clinically skilled, responsive and effective nurses to contribute to positive patient outcomes. Among the contemporary challenges facing nursing is the whole issue of nurses' learning. The reason this is important is that the ability of nurses to learn affects patients' outcomes (Drach-Zahavy & Pud, 2010), and this is particularly the case in terms of recognising 'near misses' (Dawson, West & Yan, 2008). Learning can take place formally or informally (Marton & Tsui, 2004). Formal learning takes place either at the workplace or outside when nurses attend organised courses whereas informal learning can take place in the workplace via mentoring, work based learning and/or coaching programs or individually by engaging in self-directed learning. Additionally, Marton and Tsui recognised incidental learning taking place on the job, unintentionally, by observing colleagues during teamwork situations or by observing over time what works via a trial and error process.

In theory, hospitals encourage nurses to learn. However, in practice, learning is either encouraged or thwarted by management, depending on the actual (as opposed to espoused) goals and objectives of a hospital. As a means of continually expanding nurses' potential, hospitals should ideally operate as learning organisations, promoting learning activities as part of normal work activities (Senge, 1990). The outcomes are that nurses benefit because the individuals' thinking patterns expand and the organisation benefits because nurses can use their evidence-based learning to deliver best practice nursing to the patient (Senge et al, 2000). However, many hospitals do not operate in such a context but instead are plagued by fiscal restraint, which over-rides all other goals.

While most hospitals have written policies promoting learning as a means of adding value to their human capital, their practices may not reflect their stated intent. In particular, many hospitals across Organisation for Economic Co-operation and Development (OECD)

countries operate in an environment of efficiency-driven goals, and consequently, supervisors may ask nurses to work more shifts, instead of encouraging them to attend training (Ackroyd, Kirkpatrick & Walker, 2007; Buchanan & Consideine, 2002; Brunetto, Farr-Wharton, 2005, 2006, 2007; Brunetto, Farr-Wharton & Shacklock, 2010), which will likely compromise nurses' access to formal learning options. The quality of supervisor-nurse relationships is therefore pivotal in influencing nurses' workloads, which affect nurses' access to training and subsequently is likely to affect perceptions of empowerment, such as self-determination, impact, competence and meaning. Ackroyd et al. (2007) posits that nurses' work environment is very much dependent on their supervisors' ability to reconcile the organisational demands for increased efficiency with the nursing profession demands to nurture the interests of their nurses. Nurses have specific beliefs, values and aspirations from their nursing profession and nurse supervisors have specific responsibilities to ensure the professional development of nurses (Brock, Powell & Hinings 1999; Friedson, 2001; Maynard-Moody & Mushero, 2003). Hence, the supervisor relationship with nurses is an important factor affecting nurses' access, quality and quantity of learning options. This paper therefore argues that the quality of the supervisor-nurse relationship affects nurses' level of satisfaction with their formal learning from training, which affects their perceptions of self-determination, impact and competence and in turn, their levels of role ambiguity experienced in relation to patients.

One way of examining the supervisor-subordinate relationship is via a Leader-Member Exchange (LMX) theoretical lens. LMX theory theorises that supervisors treat employees differently. As a result, some employees experience high quality 'social exchanges' between supervisors and themselves - a high quality LMX relationship. Within such an environment, LMX theory posits that there are mutually beneficial exchanges of support, information, trust, participation in decision-making and respect between the supervisors and

the employees (Mueller & Lee 2002). This environment is likely to promote knowledge and skills acquisition and sharing from attending formal training courses (Noe, 2005) and to decrease role ambiguity associated with reduced levels of 'near-misses' and/or harmful errors (Dawson, West & Yan, 2008). Hence, the LMX relationship is expected to be a vital ingredient affecting the quality of formal learning. However, it is unclear whether the experience is similar for English and Australian nurses.

There are numerous reasons for comparing nurses in Australia and England. First, Degeling Hill, Kennedy and Maxwell (2000) argued that historically there has been parity in nursing issues across England and Australia. By 1920, for example, both countries had established a legislative basis for systems of formal registration and more recently, both countries have implemented systems of levels within registered nursing positions and an increasing emphasis on the professionalization of nurses (Francis & Humphreys, 1999), as well as a change in focus on training (Cunich & Whelan, 2010). Second, there are similarities and differences in the cultural characteristics of people in Australia and England. Using Hostede's (1980) five cultural dimensions of cross-cultural characteristics across many different countries, Australia and England are reported as similar. In particular, in terms of power distance (measuring the degree to which unequal power distribution is tolerated in the society), individualism (the degree to which there is social integration), masculinity (the degree to which authority and performance are preferred), uncertainty avoidance (a society's tolerance for uncertainty in the future) and long-term orientation (the extent to which a society focuses on the long term), Australia and Great Britain are in the same categories. The biggest difference is in relation to uncertainty avoidance in which Australia has a slightly lower tolerance for uncertainty and therefore has more rules and regulations in place controlling behaviour – at least in theory. While there have been some criticisms of Hostede's work, his measures remain the most widely used in both academic and practical context (Bond, 2002).

His findings in relation to Australia and England include that the power distance between supervisors and nurses in both locations is similar, as is the focus on individual rather than group performance. Hence, similarities and differences in the impact of nurses' level of satisfaction with the supervisor-subordinate relationship may provide useful information for healthcare managers in both countries. The following research questions were therefore developed to guide the data collection:

***RQ1:** What is the impact of the supervisor-subordinate relationship upon nurses' satisfaction with formal learning from training, nurses' perceptions of empowerment (self-determination, impact, competence and meaning) and in turn, role ambiguity in relation to patients?*

***RQ2:** In Australia and England, is the impact the same of supervisor-subordinate relationships upon nurses' satisfaction with training, perceptions of empowerment (self-determination, impact, competence and meaning) and consequently, role ambiguity in relation to patients?*

This paper has four parts. The first part provides a targeted review of the literature from which the hypotheses emerge. The second part describes the samples and methods used to test the hypotheses and address the research questions. The third part reports the results and uses the discussion section to identify pattern-matching with relevant past research and implications for healthcare managers. Finally, the paper concludes and offers suggestions for future research.

Leader-Member Exchange Theory

Leader-Member Exchange (LMX) theory suggests that supervisors manage employees differently, and as a result, employees who get on with their supervisor ('in-group') have different outcomes compared with employees who are not satisfied with their supervisor

(‘out-group’). ‘In-groups’ develop as a result of effective social networking between the supervisor and employees and consequently they begin to share information and resources and give each other support and trust and hence, respect develops in the workplace (Mueller & Lee, 2002; Yrie, Hartman & Galle, 2003). Using LMX theory, it is argued that the in-group is likely to have greater control over their work tasks (Yukl, 2006) and therefore it seems likely that they will be given greater access to training that builds knowledge and skills compared with their ‘out-group’ counterparts. As a result, it is likely that nurses will perceive themselves as competent and equipped to deliver desirable services and outcomes for patients, which will then give their work greater meaning (Spreitzer, 2007). Because an effective supervisor-subordinate relationship encourages employees to participate in decision-making (Yrie, et al., 2003; Yukl, 2006), it is likely that in-group nurses will perceive themselves as being more autonomous in the workplace. Such working conditions are likely to reduce nurses’ perceptions of role ambiguity (or increase their role clarity) in relation to patients.

Supervisor-Subordinate Relationship

The implementation of management reforms has affected professional groups such as nurses by increasing the power of supervisors so that they can make their professional staff more accountable and therefore reduce their staff’s power (Ackroyd et al., 2007). In the case of nurses, this amplified accountability has involved increased record-keeping and data collection (Adcroft & Willis 2005; Brunetto & Farr-Wharton 2005, 2006, 2007). Additionally, the reforms expected supervisors to use their power to standardise service delivery, based on efficiency, by healthcare professionals in countries such as the United Kingdom (UK), United States of America, New Zealand and Australia. According to Ackroyd et al. (2007), the outcome has been that some nurses have experienced increased workloads and intensity of work, poorer working conditions, inflexible scheduling and loss of work

autonomy; however, other nurses have not been as negatively affected. The important factor appears to be the extent to which supervisors mediate organisational management goals for nurses (Ackroyd, et al., 2007; Bolton, 2003). Some nurses have supervisors who have actively embraced their increased managerial power at their nurses' expense (Coyle-Sharpino, 1999), and this paper argues that those nurses are likely to be less satisfied with the training experience.

Training

Training has traditionally been the formal means by which employees engage in planned activities aimed at maintaining and enhancing their clinical/professional skills and knowledge (Noe, 2005; Noe & Wilk, 1993). The current pathway to become a registered nurse in Australia is via a university degree and this has been the situation for the past two decades. While the situation is not mandatory, it is increasingly becoming the norm for nurses in the UK to complete an undergraduate degree (Robinson, Murrells & Clinton, 2006). In both countries, once in the job, nurses are expected to continually update their skills and knowledge, either attending formal courses in their own time or as part of their job specifications. However, not all nurses have equal access to training (Campbell, Nilsson, & Andersson, 2007).

Even so, simply attending training courses does not guarantee that the training will provide a good learning experience. In particular, past research has identified the importance of supervisor support in affecting how satisfied employees are with their training (Bartlett, 2001; Bates, Holton & Seyler, 1996; Tracey, Timothy, & Mathieu, 2001). Therefore, a direct relationship between nurses' satisfaction with their supervisor-subordinate relationship and their satisfaction with training is expected, as follows:

H1: *In Australia and England, nurses' satisfaction with their supervisor-subordinate relationships is positively related to their satisfaction with training.*

Empowerment (self-determination, impact, competence and meaning)

Employee empowerment refers to the degree to which employees have power in the workplace – especially in relation to decision-making (Ang, 2002). Employee empowerment is not actively promoted or encouraged in Australia (Gollan, 2005) and there is very little focus on empowerment in healthcare generally. Coyle-Shapiro (1999) suggests one reason explaining the lack of employee empowerment is that some supervisors perceive their own power base to be potentially threatened by empowering employees and therefore they resist any attempts to implement such schemes.

Spreitzer (2007) conceptualises the empowerment construct as two dimensions: structural and psychological (Spreitzer, 1995; 1996). Structural empowerment refers to whether the organisational structures and processes facilitate optimal employee performance (Spreitzer, 1995; 1996). Psychological empowerment refers to employees' perceived levels of power from working within a particular environment (Spreitzer, 1995; 1996), and is the focus of this study. Spreitzer (1995; 1996) conceptualised empowerment as a function of four constructs: 'self-determination' (an employee's sense of autonomy about workplace choices); 'impact' (an employee's beliefs about their impact in the workplace); 'competence' (self-efficacy about an employee's capabilities to undertake tasks which captures one of the Learning Organisation variables that tests personal skills mastery (Senge et al., 2000); and 'meaning' (which refers to the extent to which the work undertaken achieves personal work goals and fits in with the employee's own beliefs and values). While there is evidence that employee's perception of empowerment affects organisational effectiveness (Conger & Kanungo, 1988; Gomez & Rosen, 2001; Seibert, Silver & Randolph, 2004; Spreitzer, 1995, 1996; Thompson & Prottas, 2006), there is less evidence of the link between formal and incidental learning and empowerment.

Using LMX theory, under ideal conditions nurses are most likely to feel most empowered when they are given access to training because these are likely to be the conditions that would facilitate the sharing of adequate information, resources, support and participation in decision-making. In addition, because nurses are professionals, they are likely to experience even greater autonomy in the workplace because of their knowledge-specific expertise (Hoyle & John, 1995). However, the implementation of recent reforms affecting nursing professionals has decreased their level of structural empowerment (by increasing their level of accountability) (Ackroyd, et al., 2007). The reforms have had the effect of 'increasing bureaucracy and managerial supervision... leading to shifts in the nature and quantity of work' for nurses (Ackroyd, et al., 2007: 18). This means that while all professionals continue to have autonomy to make decisions in the workplace based on their *value discretionary power* because of the complexity of the work undertaken; the change in the supervisor-subordinate relationship may have caused a change in the perception of autonomy for nurses. Further, it is unclear whether the experiences are similar for nurses in Australia and England. To examine these premises, the following hypothesis is proposed:

H2: *In Australia and England, nurses' satisfaction with training is positively related to their perceptions of self-determination, impact, competence and meaning.*

Role Ambiguity in relation to patients

Role ambiguity is the context in which the likelihood of adverse outcomes for patients increased (Dawson, et al., 2008; Firth-Cozens, 2001). It describes a situation where nurses are unclear about what they should do for a particular patient because of conflicting messages given by different authorities, such as a supervisor and/or a senior clinical nurse. In contrast, role clarity is enhanced by clear messages from supervisors and effective training improving competence and mastery of knowledge (Jolke & Duhan 2000).

Role ambiguity is less likely when attending to patients with routine problems. On the other hand, when a patient presents with complicated circumstances, (such as when a surgical patient demonstrates signs of severe irrationality), this is the breeding ground for role ambiguity. This is when the role of an effective supervisor-nurse and/or nurse-nurse relationship becomes invaluable in assisting nurses with vital information needed to make evidence-based, best practice clinical nursing decisions (Jolke & Duhan, 2000; Rhoads, Singh & Goodell, 1994). The following hypotheses test this proposition, including whether nurses in Australia and England have similar experiences:

H3: *In Australia and England, there is an inverse relationship between nurses' perceptions of self-determination, impact, competence and meaning and role ambiguity.*

H4: *In Australia and England, nurses' perception of role ambiguity is a function of their supervisor-subordinate relationship in addition to their satisfaction with training and their perceptions of self-determination, impact, competence and meaning.*

Nurses in Australia and England

Australia and England are similar to other OECD countries in experiencing an aging society and a similar ageing workforce profile (Waterfield, 2010; Cunich & Whelan, 2010). An effective healthcare sector requires skilled experienced healthcare professionals and the aging population is a major challenge that both countries must negotiate. The supervisor-subordinate relationship is a major factor affecting nurse retention (Tauton, Boyle, Woods, Hansen & Bott, 1997) and that relationship is more important for women as they age (Moseley, Jeffers & Paterson, 2008; Shacklock, Brunetto & Nelson, 2009). However, it is unclear whether the management of nurses is similar across English and Australian hospitals.

Additionally, the two countries are similar in that they both face difficulties with recruitment (Frijters, Shields & Wheatley-Price, 2006) and retention (Cunich & Whelan, 2010). Moreover nurses move from England and Australia and vice versa because of the ease that has developed due to the similarities in structure and approach (Buchan & Seccombe, 2006). Next, both countries face an extra difficulty because of the number of nurses moving from public to private sector (Doiron, Hall & Jones, 2008).

Finally, both English and Australian nurses have been affected by the implementation of reforms affecting supervising practices, although the reforms have not been uniformly implemented across countries. Britain and New Zealand have focused more on separating policy development from service provision. By contrast in Australia, the focus has been on the adoption of increased managerial control to achieve government objectives (Carroll & Steane, 2002). However, Britain, Australia, NZ and the UK are similar in that reforms have focused on achieving increased efficiency to achieve significant cost cutting (Adcroft & Willis, 2005). It is therefore expected that English nurses will have higher levels of satisfaction with supervisor-subordinate relationships compared with Australian nurses, and this may negatively affect their subsequent levels of satisfaction with training, perceptions of self-determination, impact, competence and meaning, and in turn patient role ambiguity. To examine this premise, the following hypothesis is proposed:

H5: *In England, nurses have significantly higher levels of satisfaction with their supervisor-subordinate relationships, training, empowerment (self-determination, impact, competence and meaning) and subsequently, have lower levels of role ambiguity in relation to the client, than nurses in Australia.*

METHODS

This research uses a cross-sectional design to gather data to test whether the quality of supervisor-subordinate relationships impacts on teamwork and training and in turn,

empowerment and affective commitment. Data were collected using a survey-based, self-report strategy (Ghauri & Gronhaug, 2002). The emerging patterns of data were then compared with the findings of previous research.

All nurses in the study are from hospitals that have similar acute clinical settings and experience comparable patient case mix. The Australian sample included private sector nurses from four states of Australia (New South Wales, Queensland, Western Australia and Victoria), working in either private small (<300 beds), medium (300-500 beds) or large (>500 beds) hospitals. The English sample comprises public sector nurses working in two NHS Foundation Trusts in the North of England covering 3 large hospitals.

To gather data from Australian nurses, 3,200 anonymous surveys were distributed to the 7 hospitals and nurses were invited to participate. The response was 900 useable surveys - a response rate of approximately 28%. To gather data from the English nurses, 2,000 anonymous surveys were distributed to the three hospitals and all nurses were invited to complete them. In total, 435 responses were received, providing a response rate of approximately 22%.

Path analysis was used to test the impact of supervision practices on nurses' satisfaction with training and the four dimensions of empowerment (self-determination, impact, competence and meaning) and in turn, patient role ambiguity. In particular, path analysis using an ordinary least squares (OLS) approach was used to test the hypotheses. The advantage of path analysis is that it permits more than one equation to predict the dependent variable (role ambiguity in relation to patients) and therefore it includes the indirect impact of supervisor-nurse relationship and training into the bigger equation. OLS is an explanation of variance and the overall R^2 measure identifies the 'goodness of fit' overall for the proposed model (Ahn, 2002).

Measures

The measures were generated from the extant literature and presented using statements to be rated on a 6-point Likert-type scale, with 1 = strongly disagree, ranging to 6 = strongly agree. *Satisfaction of nurses with the quality of their supervisor-subordinate relationship* was measured using a seven-item uni-dimensional scale (LMX-7), developed by Graen and Uhl-Bien (1995). According to Gerstner and Day (1997), the uni-dimensional scale updated by Graen and Uhl-Bien (1995) is the most commonly used tool for measuring LMX quality and has the best psychometric properties of all the instruments reviewed. Specific items included, 'My supervisor is willing to help me at work when I really need it'. *Nurses' satisfaction with Training* was measured using the instrument developed by Meyer and Smith (2000), and included, 'I am happy with the training opportunities provided for me in this hospital'. *Nurses' perception of empowerment* was operationalised using Spreitzer's (1996) measures of *self-determination*, including, 'I have a great deal of control over what happens in my ward'; *impact*, including, 'My impact on what happens in my ward is large'; *competence*, including, 'I am confident about my ability to do my job'; and *meaning*, including, 'My job activities are personally meaningful to me'. *Role ambiguity in relation to patients* was measured using 3 items of Johlke and Duhan's (2000) instrument, including, 'I am certain of what I am expected to do for my patients'. These items actually measure role clarity (the opposite of role ambiguity); a high score means that nurses are clear about how to treat their patients, and have low ambiguity. Job type was measured by nurses choosing between a variety of position titles, such as Nurse Unit Manager, Registered Nurse and Enrolled Nurse.

RESULTS

The Australian nurse sample comprised 33 males and 867 females and the English nurse sample comprised 19 males and 414 males (with two recipients not giving their age). In terms

of those aged under thirty years of age, 101 nurses were Australian and 168 were English. In terms of those aged between thirty and forty-five, 340 were Australian and 88 were English. In terms of those aged over forty-five years of age, 486 were Australian and 171 were English. The Australian sample was older than the English sample. These sample results are representative of the nurse populations in both countries. In Australia, 91% of nurses are females and 40% are aged 45 years or older (ABS 2005) and in the United Kingdom, 89% are females and 65% are aged 40 and over (Nursing and Midwifery Council, 2008).

Factor Analysis

Each variable has been developed and validated in previous research. Hence the findings detailed here are the results of factor analysis. The correlation matrix identified many correlations exceeding .3, indicating the matrix was suitable for factoring. The Bartlett's test for Sphericity was significant (Chi-square value=13,046.442, $p < .001$, df 351) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .829 - well above the .6 requirement. When Principal Axis Factoring was undertaken to extract the variables, seven factors had eigenvalues greater than one and 69.34% of the variance could be explained using these seven factors –ensuring the validity of the variables.

Correlation Matrix

Table 1 details the correlation coefficients for each variable. All variables were significantly related to one another except for the control variable – job type (Manager, Registered Nurse, Enrolled Nurse or Nursing Assistant).

[Insert Table 1 here]

Results from analysis

To address the first hypothesis (*In Australia and England, nurses' satisfaction with their supervisor-subordinate relationships is positively related to their satisfaction with training*), a regression analysis was undertaken and the findings suggest that the hypothesis is supported (see Table 2 for beta scores). The findings indicate that:

- (a) All Nurses: $F=256.325$ $p<.001$ $R^2=16.7\%$,
- (b) Australian Nurses: $F=172.314$, $p<.001$, $R^2 = 16.1\%$,
- (c) English nurses: $F=197.627$ $p<.001$ $R^2=18.4\%$.

This means that almost a fifth of the variance of the combined nurses' perceptions of training can be accounted for by their satisfaction with the supervisor-nurse relationship and this figure was similar for both English and Australian nurses.

[Insert Table 2 here]

To address the second hypothesis (*In Australia and England, nurses' satisfaction with training is positively related to their perceptions of self-determination, impact, competence and meaning*), a regression analysis was undertaken and the findings suggest that the hypothesis is mostly supported, with three of the four measures being significant, but not impact (see Tables 3, 4, 5 and 6 for beta scores).

1. The impact of nurses' satisfaction with training on self-determination is:

- (a) All Nurses: $F=82.927$ $p<.001$ $R^2=10.9\%$,
- (b) Australian Nurses: $F=78.806$, $p<.001$ $R^2 = 9\%$,
- (c) English nurses: $F=92.13$ $p<.001$ $R^2=15.9\%$.

2. The impact of nurses' satisfaction with training on impact is:

- (a) All Nurses: $F=147.741$ $p<.001$ $R^2=10\%$,
- (b) Australian Nurses: $F=93.827$, $p<.001$, $R^2 = .95\%$,
- (c) English nurses: $F=155.420$ $p<.001$ $R^2=11.3\%$.

3. The impact of nurses' satisfaction with training on competence is:

- (a) All Nurses: $F=3.558 R^2=.8\%$,
- (b) Australian Nurses: $F=.342, R^2 = .1\%$,
- (c) English nurses: $F=3.182 R^2=.2\%$.

4. The impact of nurses' satisfaction with training on meaning is:

- (a) All Nurses: $F=37.215 p<.001 R^2=3.4\%$,
- (b) Australian Nurses: $F=26.892, p<.001 R^2 = 2.9\%$,
- (c) English nurses: $F=41.553 p<.001 R^2=4.7\%$.

The findings suggest the strongest relationship is between training and self-determination. Training explained a sixth of the variance of English nurses' perception of self-determination and that this was more than the variance for Australian nurses. Additionally, approximately ten percent of both English and Australian nurses' perception of their impact in their job can be accounted for by their level of satisfaction with training, and again the relationship was stronger for England than for Australia. It is curious that satisfaction with training accounted for such a small percentage of nurses' perception of competence.

[Insert Tables 3, 4, 5 and 6 here]

To address the third hypothesis (*In Australia and England, there is an inverse relationship between nurses' perceptions of self-determination, impact, competence and meaning, and role ambiguity*), a regression analysis and examination of means were undertaken and the hypothesis is partly supported (See Tables 7 and 8).

1. The impact of nurses' perception of self-determination on role ambiguity is:

- (d) All Nurses: $F=68.131 p<.001 R^2=4.3\%$,
- (e) Australian Nurses: $F=19.134, p<.001 R^2 = 2.1\%$,
- (f) English nurses: $F=37.444 p<.001 R^2=3.9\%$.

2. The impact of nurses' perception of impact on role ambiguity is:

- (d) All Nurses: $F=29.856 p<.001 R^2=3.2\%$,

(e) Australian Nurses: $F=11.794$, $p<.001$ $R^2 = 1.3\%$,

(f) English nurses: $F=12.564$ $p<.001$ $R^2=2.8\%$.

3. The impact of nurses' perception of competence on role ambiguity is:

(d) All Nurses: $F=211.653$ $p<.001$ $R^2=12.4\%$,

(e) Australian Nurses: $F=118.3182$, $p<.001$ $R^2 = 11.6\%$,

(f) English nurses: $F=183.219$ $p<.001$ $R^2=16.1\%$.

4. The impact of nurses' perception of meaning on role ambiguity is:

(d) All Nurses: $F=94.193$ $p<.001$ $R^2=6.6\%$,

(e) Australian Nurses: $F=59.723$, $p<.001$ $R^2 = 6.2\%$,

(f) English nurses: $F=38.944$ $p<.001$ $R^2=8.3\%$.

The findings suggest that the strongest correlation is between nurses' perception of competence and their level of patient role ambiguity. Competence explained a sixth of the variance of English nurses' perception of role ambiguity and that this was more than the variance for Australian nurses. The findings also suggest a relationship between perceptions of meaning and role ambiguity, with English nurses similarly having a stronger relationship than Australian nurses. Additionally, the higher the mean for patient role ambiguity, the greater the nurses experienced role clarity instead of role ambiguity. Hence the findings suggest inverse relationships between competence and role ambiguity, plus meaning and role ambiguity. The relationships between self-determination and role ambiguity, plus impact and role ambiguity are not as clear.

[Insert Tables 7 and 8 here]

To address the fourth hypothesis (*In Australia and England, nurses' perception of role ambiguity is a function of their supervisor-subordinate relationship in addition to their satisfaction with training and their perceptions of self-determination, impact, competence and*

meaning) regression analysis was undertaken. The findings in Table 9 indicate that these factors were important in affecting role ambiguity. In particular, the supervisor-subordinate relationship as well as nurses' perception of competence and the meaning that nursing gave to nurses all significantly affected their perception of role ambiguity – the variance of these factors accounted for approximately a fifth of nurses' perception of role ambiguity. Interestingly, training was not significant for either Australian or English nurses, although the likely outcome of effective training is a perception of competence, especially when it is combined with practical experience, so it may be that the impact of training was shadowed by nurses' perception of competence.

[Insert Table 9]

To address the fifth hypothesis (*In England, nurses have significantly higher levels of satisfaction with their supervisor-subordinate relationships, training, empowerment (self-determination, impact, competence and meaning) and subsequently, have lower levels of role ambiguity in relation to the client, than nurses in Australia*), a MANOVA was undertaken. A MANOVA is used to examine the impact of location (England versus Australia) on the demographics (gender and age) and variables (ie supervisor-nurse relationships (LMX), training and development, self-determination, impact, competence and meaning and role ambiguity). If the multivariate F value is significant, then it means that there is a significant difference in the means of the variables. The findings suggest that there is a significant difference in gender, age, LMX, self-determination, competence and role ambiguity for English and Australian nurses suggesting that the management experiences of English nurses is somewhat different to that of Australian nurses and hence the hypothesis is somewhat supported (See Table 8).

[Insert Table 8 here]

DISCUSSION

This paper used a LMX theoretical lens to examine the impact of supervisor-nurse relationships upon nurses' perceptions of training, empowerment constructs – self-determination, impact, competence and meaning - and finally, role ambiguity in relation to patients. The development of high quality relationships (such as the supervisor-nurse relationship), according to LMX theory results from positive social interactions and over time facilitates the sharing of knowledge, support and resources (Gerstner & Day 1997; Mueller & Lee 2002; Wayne, Shore & Linden 1997; Yrie, et al., 2003). It is within such high quality relationship environments that formal learning from undertaking training courses would be expected to be promoted and encouraged for nurses. As predicted by LMX theory, the findings identified a significant relationship between supervisor-nurse relationship and nurses' satisfaction with training. The relationship was similar for both English and Australian nurses. This is an important finding because both countries are emphasizing the professionalization of nursing via a training route.

However, of concern is the significant difference in the levels of satisfaction with the supervisor-nurse relationship with Australian nurses, on average, reporting they are only almost satisfied and English nurses, on average, being only slightly satisfied. The implication of this finding in terms of LMX theory is that the Australian nurses were almost satisfied with the flow of resources, information, respect and decision-making power; however, English nurses were only slightly satisfied and this must be a concern for healthcare managers – especially in England.

Additionally, both English and Australian nurses were barely slightly satisfied with their quality of training. These findings confirm earlier research by Bates et al (1996), Tracey, et al. (2001) and Bartlett (2001) of the importance of supervisor support in affecting Australian and English nurses' levels of satisfaction with training. However, the evidence

suggests a work environment where the supervisor-subordinate relationship is barely functional and only provides a tenuous focus on formal learning from training courses. Because nurses across both countries were, on average, only somewhat satisfied with training, more questions need to be asked about the relevance, quality and applicability of the training, plus the availability of opportunities to attend or access training and future research must examine those issues. These findings suggest that the present training regime is not ideal for promoting learning and improving clinical mastery competence, especially considering the non significant weak relationship between training and competence. Since both countries emphasize (at least in policy) a commitment to the professionalization of nurses with a focus on training (Cunich & Whelan, 2010), these findings challenge whether the training practices are appropriate, and whether nurses have access to training in current environments where typically, hospitals and the managers and nurses within are being asked to do more with less.

Moreover, both English and Australian nurses perceived themselves to be competent and agree that nursing is personally meaningful to them. However, both samples reported they have minimal impact upon their patients and are only somewhat autonomous in the workplace. The strongest relationships are between training and self-determination, plus training and impact, suggesting that training does play an important role in improving nurses' perceptions of empowerment, however, not in improving their perceptions of competence. On the other hand, there was a significant relationship between nurses' perceptions of competence and role clarity as expected.

The second theme of the paper was to examine the extent to which the impact of the supervisor-nurse relationship is the same for English and Australian nurses' perceptions of teamwork, training and in turn, empowerment and patient role ambiguity. The path analysis indicates a stronger relationship between the variables for English nurses, compared with

Australian nurses, explaining almost a fifth of their perceptions of role ambiguity (See Figure 1).

This study has a number of limitations. Firstly, the age and gender disparity between the samples identifies that the Australian sample was significantly older had more females compared with the English sample and this could have affected the outcome because older workers seek different rewards from working to younger workers, and they value different outcomes (Guest & Shacklock, 2005). However, each of the sample demographics was representative of the composition of their respective nursing populations in Australia and United Kingdom. Therefore more studies are required across greater numbers of nursing samples to test the generalisability of these findings. The other limitation is the use of self-report surveys causing common methods bias. However, Spector (1994) argues that self-reporting methods is legitimate for gathering data about employees' perceptions, as long the instrument reflects an extensive literature review and pattern-matching is used to support interpretations of the data. Additionally, common method bias is a possibility within self-report cross-sectional studies (Podsakoff, MacKenzie, Lee & Podsakoff, 2003) where common method variance may influence the significance of relationships between variables.

Implications

Of the two groups, the Australian nurses were the more satisfied with their supervisor-nurse relationship and experienced lower levels of role ambiguity. However, the means for both groups suggest that Australian and English nurses appear to operate in work contexts that are far from ideal in promoting learning from training and this has implications for their ability to maintain and grow their knowledge and experience base, which must affect the quality of care that they can deliver to the patient. The present supervisor-nurse relationship could be a factor because of changes in supervisor responsibilities to ensure increased nurse

accountability. If this is the case, then the changes do not appear to have promoted the professional development of nurses. Hence, the reforms that have increased the power of supervisors and reduced the power of professionals are unlikely to be delivering a more informed skilled nurse workforce, irrespective of whether the reforms are delivering efficiency gains to hospitals.

Additionally, nurses reported satisfaction with training as not significant in their perceptions of competence, and that this suggests that either the training itself is not appropriate, or is of insufficient quality or simply not realistically available. Within tight budgetary constraints, nurses still need to be able to attend appropriate training opportunities to enhance their clinical skills, responsiveness and effectiveness so they can contribute to positive health outcomes for patients. Hospital leadership must take note of this finding about nurses' lack of satisfaction with training in hospitals.

CONCLUSION

The findings from this study add new knowledge about the importance of an effective workplace relationship on nurses' satisfaction with training, their perceptions of empowerment - as measured by competence, meaning, impact and self-determination - and their role ambiguity in relation to patients. Also, the findings contribute new knowledge about the differences between the Australian and English nurses' experiences. It seems likely that a healthcare manager wanting to promote an empowered nurse workforce, capable of making evidence-based best-practice decisions in the ward, must focus on ensuring an effective supervisor-nurse relationship is embedded within the organization, which should impact positively on enhancing incidental learning from teamwork and formal learning from training courses.

Additionally, the professionalization of nursing requires a robust learning environment facilitating formal learning from effective training programs and incidental learning from partaking in teamwork opportunities on the job. The findings from this study challenge healthcare managers supervising both Australian and English part time and full time nurses to rethink the quality of learning and the learning opportunities available to nurses. There is an increasing focus on delivering evidence-based best-practice healthcare to patients, however, these findings suggest less than ideal opportunities are available for nurses to improve their knowledge and skills. Much of the change required rests with changing the role of the nurse supervisor, since they determine whether nurses can be rostered off in order to attend training as well as providing the role model for sharing knowledge, resources and support in the ward. A stronger focus on professionalising the role of the nurse supervisor away from just being an organisational supervisor and towards being a professional mentor and role model could be an important step in improving the learning context for nurses generally. Hence, the professionalization of nursing may well depend on a changed role for the supervisor.

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TABLE 1:
Correlations and Cronbach's alpha coefficients

	1	2	3	4	5	6	7	8
1 Job Type (control)	1							
2 LMX	-.023	1						(.93)
3 Training	-.05	.4**	1					(.84)
4 Self-determination	.05	.3**	.33**	1				(.84)
5 Impact	.02	.36**	.32**	.49**	1			(.87)
6 Competence	-.015	.15**	.08	.32**	.26**	1		(.78)
7 Meaning	-.021	.15**	.19**	.22**	.2**	.37**	1	(.86)
8 Role Ambiguity (DV)	-.05	.29**	.19**	.21**	.18**	.35**	.26**	1 (.87)

N = 1499.

Statistically significant Pearson correlation scores - **p < .01, * p < .05, Two-tailed tests

Cronbach alpha coefficients of the composite scales scores are in brackets

TABLE 2
Regression analysis detailing supervisor-nurse relationship as a predictor of training

Satisfaction with training	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
LMX	.40**	.43**	.40**
F	172.31**	185.63**	256.325**
R²	.161	.17	.167

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 3
Regression analysis detailing training as a predictor of Self-determination

Self-determination	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.3**	.40**	.33**
F	78.81**	92.13**	82.93**
R²	.09	.159	.109

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 4
Regression analysis detailing training as a predictor of Impact

Impact	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.31**	.34**	.32**
F	93.83**	155.42**	147.74**
R²	.095	.113	.10

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 5
Regression analysis detailing training as a predictor of Competence

Competence	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.03	.09	.05
F	.34	3.56	3.18
R²	.001	.008	.002

TABLE 6
Regression analysis detailing training as a predictor of Meaning

Meaning	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Training	.17**	.22**	.18**
F	26.89**	41.55	37.21**
R²	.029	.047	.034

** Correlation is significant at the 0.01 level (2-tailed)

TABLE 7
Regression analysis detailing competence, meaning, impact and self-determination as predictors of Client Ambiguity

Client Ambiguity	Australian nurses <i>B</i>	English nurses <i>β</i>	Combined nurses <i>β</i>
Self-determination	.14**	.20**	.21**
F	19.13**	37.44**	68.13**
R²	.021	.039	.043
Impact	.11**	.17**	.18**
F	11.79**	12.56**	29.86**
R²	.013	.028	.032
Competence	.34**	.40**	.35**
F	118.32**	283.22**	211.65**
R²	.116	.16	.124
Meaning	.25**	.29**	.26**
F	59.72**	138.94**	94.19**
R²	.062	.083	.066

** Correlation is significant at the 0.01 level (2-tailed).

TABLE 8
Results from MANOVA: Nurses in Australia and England

	<u>Australia[#]</u>		<u>England^{##}</u>		F value
	Mean ^a	SD	Mean	SD	
LMX	4.72	1.1	4.34	1.0	39.46**
Training	4.04	1.2	4.07	1.1	.179
Competence	5.2	.65	5.11	.66	4.499*
Meaning	5.19	.72	5.23	.72	.997
Self-determination	4.39	.96	4.28	1.05	3.601*
Impact	3.73	1.2	3.67	1.22	.851
Role Ambiguity	5.64	.54	5.48	.59	22.35**
Age	2.46	.64	2.19	.75	44.59**
Gender	1.96	.18	1.8	.39	94.95**

[#] N= 900 ^{##} N = 435

^a Mean: 1 = Strongly Disagree, through to 6 = Strongly Agree

* Correlation is significant at the 0.05 level (2-tailed).

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

TABLE 9
Regression analysis detailing LMX, training, competence, impact, meaning and self-determination as predictors of patient role ambiguity

Role Ambiguity	Australian nurses β	English nurses β	Combined nurses β
LMX	.23**	.13**	.21**
Training	-.02	.06	.00
Self-determination	.03	.02	.03
Impact	-.04	-.037	-.05
Competence	.27**	.34**	.3**
Meaning	.12**	.13**	.12**
R²	.18	.211	.194
F	32.692**	109.032**	53.387**

FIGURE 1

Path Analysis showing the significant relationship between LMX, training, empowerment and patient role ambiguity

