Measuring 'magnetism' in Australian nursing environments

AUTHORS

Joanne Joyce-McCoach
RN, Ba Nursing, Grad Dip HSc (Health Education), Ma Nursing
Lecturer, Department of Nursing, University of Wollongong. Enrolled in PhD Nursing, University of Wollongong.
joanne_joyce@uow.edu.au

Professor Patrick Crookes
RN, RNT, Cert.ed, BSc (Nurs), PhD
Head of Department of Nursing, University of Wollongong.
patrick_crookes@uow.edu.au

KEY WORDS

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ABSTRACT

Objective
The aim of this research project was to use the NWI-R:A tool to measure the organisational features that impact on 'magnetism' in Australian health facilities.

Design
The cross sectional survey questionnaire incorporated the Nursing Work Index-Revised: Australian (NWI-R:A) developed by Joyce and Crookes (2007).

Subjects
Participants were registered nursing staff (n=262) including ward nurses and managers within a group of four Australian hospitals.

Main outcome measures
To measure the organisational features that impact on 'magnetism' in Australian health facilities using the NWI-R:A tool specifically developed for the Australian context.

Results
The results have identified a number of consistent patterns in nursing staff views in relation to the magnet features present in their current practice environment. The findings have affirmed results reported by Joyce and Crookes (2007) that respondents in the Australian surveys consider positively, the quality of care and the level of support from management in their workplace. The calibre of leadership and support was also considered favourably as were the relationships between health professionals. Conversely the respondents indicated their workplace provided insufficient nurse participation in decision making and inadequate staffing and resources for practice.

Conclusions
The establishment of a tool for the reliable measurement of magnetism in Australian facilities allows for the transferability of the magnet concept to Australia. A better understanding of nursing staff perceptions on the presence of magnet features in their workplace can be used to inform the development of magnetism in Australian health facilities. This research develops the concept of `magnetism' to health organisations in Australia extending on existing research. By using the magnet framework to underpin the planning and development of organisational governance administrators and managers will be well positioned to improve staff retention.

INTRODUCTION

At present, despite an increase in actual health workforce numbers, several trends are impacting on the availability and participation of health care workers in the workforce: ageing of the workforce; lower average working hours; and issues of job satisfaction resulting in a considerable number of health professionals not practising in their profession (Productivity Commission 2005; Preston 2002). The health workforce demand is also impacted on by the increasing life expectancy of the Australian population and the increasing incidence of chronic illnesses (Duckett 2005).

Impacts of these issues are already evident and projections for the future are pessimistic. The use of the magnet hospital concept as a strategy to address these deteriorating trends is an option that warrants further exploration. The magnet hospital concept could be used as a conceptual basis for developing health care environments that are responsive to the increased workforce trends of poor attraction and retention of staff.

There is considerable evidence spanning two decades to show the success of magnet hospitals, in attracting and retaining nursing staff (Kramer 1990; Kramer and Hafner 1989; Kramer and Schmalenberg 1988a; 1988b; McClure et al 1983). These hospitals have also been shown to have consistently produced better outcomes for staff and patients as demonstrated in higher job satisfaction and quality patient care, than non-magnet hospitals (Aiken et al 2001; 1997; 1994).

The lessons learnt from the global research into the magnet hospital concept are significant to Australia, as a framework for addressing the immediate issues related to the recruitment and retention of professional nursing staff. A magnet hospital is defined as a facility that is 'good place to practice nursing; low turnover and vacancy rates; in a competitive locality' (McClure et al 1983) The features identified as forming the foundation of a magnetism are: participatory management; effective leadership; autonomy of practice; existence of quality care; collegial relationships; career promotion and education opportunities (Upenieks 2003; Jones-Schenk 2001; Aiken and Haven 1999; Kramer and Hafner 1989).

In Australia, like other western countries, there has been an identified shortage of practicing nurses. The increased burden on health care services can be attributed to a number of variables that include workforce issues. It is also impacted on by the increasing life expectancy of the Australian population and declining disability free expectancy rates that have resulted from the increasing incidence of chronic illnesses (Duckett 2005). To date a dearth of research has been undertaken in Australia that measures nursing practice environments and the few studies undertaken have used the US tool. It was considered by the researcher that a broader application of magnet principles in Australia would be achieved through the development of an Australian tool that could inform health care services about how to improve the magnetism of their organisation.

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Aim

The aim of this research project was to utilise a previously validated 'magnet' tool specifically developed for use in NSW, Australia (Joyce and Crookes 2007) to measure magnetism within a group of Australian hospitals. This research will provide a better understanding of nursing staff perceptions on the presence of magnet features in their workplace that can be used to inform the development of magnetism in Australian health facilities.

Methods

The first stage of the research involved the development and piloting of an Australian tool to measure magnetism (NWI-R:A) and was reported previously by Joyce and Crookes (2007). In the second stage the 'Australianised' tool, the NWI–R:A was used to measure the magnet features in a sample of hospitals in the Illawarra region of Australia. The tool was contained within an anonymous questionnaire of registered nursing staff at four facilities, along with questions on biographical information, job satisfaction and their future intentions about working in that facility.

The statistical analysis of the Australian tool replicated the work by Lake (2002) using five subscales each related to the key features of magnet hospitals. Ethics approval was achieved from the Human Research Ethics Committee of the University of Wollongong, HE03/382.

Participants

The research project surveyed registered nursing staff including ward nurses and managers in the four hospitals. The questionnaires were circulated to nursing staff by internal correspondence systems. As this population group works in a shift work structure it was expected that there would be limited opportunities for direct contact between the researcher and the population. Responses were mailed back to the researchers via a (provided) stamped, pre-addressed envelope to maintain privacy and confidentiality for the respondents.

Measure

The magnetism of the participating Australian facilities was measured using the NWI-R:A a tool consisting of 49 items. Respondents were asked to indicate the level of magnetism on a 4 point Likert scale from 1 (strongly agree) to 4 (strongly disagree). The items were reverse coded so that the overall NWI-R:A score and the scores for each of the tool subscales shows greater levels of perceived magnetism when the score is higher. This method reflects the data management of previous researcher's allowing for easier comparison of results between the versions of the tool.

The five subscales, used in the analysis of the NWI-R:A were:

1. Nursing Foundations for Quality of Care (QC);
2. Nurse Manager Ability, Leadership and Support of Nurses (MLS);
3. Nurse Participation in Hospital Affairs (NP);
4. Staffing and Resource Adequacy (SR); and
5. Collegial Nurse-Physician Relations (NPR).

The statistical analysis of the Australian tool replicated the work of Lake (2002) using the same subscales in the analysis. This study was also informed by the pilot project undertaken by Joyce and Crookes (2007) that established the NWI-R:A produced reliability scores that were consistent with those achieved for the 5 subscales in previous studies using the US tool. The Cronbach's alpha model of internal consistency based on the average inter-item correlation was used to establish the internal consistency of the Australian tool in the pilot project and this study.

Results

The response rates at each site and the overall response rate are indicated in table 1.

Table 1: Survey response rates

	Site 1	Site 2	Site 3	Site 4	Total
N	143	70	7	549	749
n	60	25	7	170	262
Response rate	41.9%	34.2%	100%	30.7%	34.97%

Table 1 shows that the overall response rate of the total sample combining all four sites was 262 respondents equating to 34.97% of the population. This response rate includes a percentage range from 30.7% at site 4 to 100% at site 3. It was expected by the researcher that the number of respondents would be influenced by the work practices of the registered nurse population. As this population group works in a shift work structure it was expected that the limited opportunities for direct contact with the population would influence the response rate. It is also the case that management in this Area Health Service had recently undertaken a staff satisfaction survey, which may have affected the response rate.

Demographic data

The average age of the respondents across all four sites was 40 years, the majority were female and less than 10% were male. Generally they were married, born in Australia and spoke English as their native language. In the survey study over 50% of the samples were full-time employees, 42% were employed part-time and only 3% were casual staff. Over 50% of survey respondents indicated they were in a supervisory role. The population for this research project displayed demographic characteristics that are close to the profile of the Australian registered nurse population as reported by the Australian Institute of Health and Welfare (2006) suggesting that is reflective of the target population.

NWI-R:A internal consistency

This data set for the survey showed an overall average internal consistency score of 0.76 indicating the NWI-R:A has statistically acceptable levels of internal consistency (Dunn 1989).

NWI-R:A frequency scores

The results for the NWI-R:A presented in table 2 show the total mean score for the tool and the mean score for each of the five subscales at the four sites. NB: higher the score, the more magnetic the workplace. The frequency score is also presented as a percentage score. This indicates the percentage number of participants that responded positively to the existence of magnet features in their workplace. This presentation of the data was included because it was considered by the researcher to be a useful addition for the reader of the patterns of participants' responses about the presence of magnet features at the facilities.

Overall scores show that three of the four sites (2, 3 and 4) had a total mean score in the positive range (< 2.5) while site 1 was the only site to have recorded a total NWI-R:A score in the negative range. The results for the five subscales show a particular pattern of response across the four sites. All sites viewed three of the NWI-R:A subscales positively. While three sites (1, 2 and 4) viewed two subscales negatively. Specifically sites (1, 2, 3 and 4) reported positive mean scores for the magnet features relating to nursing foundations for quality care, manager ability, leadership and support and collegial nurse-physician relations. While three sties (1, 2 and 4) scored two of the magnet subscales, nurse participation in hospital affairs and staffing and resource adequacy.

The percentages of positive scores for the tool and the five subscales at the four sites shows the number of respondents who viewed the magnet features in their workplace environment positively. Table 2 shows that respondents in the survey were clearly positive in their responses that related to the three NWI-R:A subscales of: nursing foundations for quality of care (60-83%); nursing manager ability, leader and support of nurses (70-92%); and collegial nurse-physician relations (60-88%). However the range of response for the subscales nurse participation in hospital affairs (45-71%) and staffing and resource adequacy (32-57%) subscales were rated less positively by the respondents.

Table 2: NWI-R:A total and subscale scores

NWI-R:A & subscales	Site 1 (n=60)	Site 2 (n=25)	Site 3 (n=7)	Site 4 (n=170)
NWI-R:A total				
Mean	2.48	2.60	2.77	2.65
SD	.42	.38	.42	.48
% positive	50%	64%	70%	65.9%
1. Nursing foundations for quality of care (QC)				
Mean	2.61	2.69	2.83	2.89
SD	.48	.47	.47	.50
% positive	60%	72%	85.7%	82.9%
2. Nurse manager ability, leadership and support of nurses (MLS)				
Mean	2.63	2.89	2.72	2.71
SD	.58	.50	.66	.75
% positive	70%	92%	71.4%	68.2%
3. Nursing participation in hospital affairs (NP)				
Mean	2.28	2.46	2.67	2.43
SD	.54	.58	.31	.56
% positive	45%	52%	71.4%	47.6%
4. Staffing and resource adequacy (SR)				
Mean	2.12	2.11	2.61	2.35
SD	.68	.63	.74	.74
% positive	33.3%	32%	57.1%	51.2%
5. Collegial relations between nurses and physicians (NPR)				
Mean	2.70	3.03	3.05	2.79
SD	.63	.45	.42	.58
% positive	60%	88%	85.7%	70.6%

Nursing foundations for quality of care (QC)

The mean scores for the Nursing Foundations for Quality of Care (QC) subscale were rated in the positive range at each site. On average, more than 60% of the respondents scored this subscale favourably with the percentage of positive scores ranging between 60% and 86%. At three sites (2, 3 and 4) over 70% of respondents gave a positive response to this subscale. This suggests that the majority of respondents considered that the relationships established with patients in their areas are productive and contribute to what they consider to be a high standard of care.

Nurse manager ability, leadership and support of nurses (MLS)

Data on the Nurse manage ability, leadership and support for nurses (MLS) subscale showed three sites (1, 3 and 4) had close to 70% of the respondents scoring a positive response. Site 2 had an even higher number with 92% of respondents scoring this subscale positively. The mean scores of this subscale at the four sites thus recorded average scores that were in the positive range. The favourable results from the NWI-R:A in this magnet area, provides evidence that the respondents tendered to consider their nursing leaders to be competent and possess a relevant professional profile within nursing. The responses also suggest the respondents considered their managers to be highly visible and were readily available to them to provide adequate support and direction.

Nurse participation in hospital affairs (NP)

The mean scores in the subscale nurse participation in hospital affairs (NP) show that all the sites except site 3 recorded mean scores close to the midpoint in the range. From the results on the percentage of respondents scoring the NP subscale positively it can be seen that three of the sites (1, 2 and 4) had similar scores at

around 50%. In contrast site 3 recorded a 20% higher positive response (at 71.4%) indicating the nursing staff there viewed their level of representation in hospital committees and involvement with decision making about hospital affairs was somewhat higher than at the other 3 sites.

Staffing and resource adequacy (SR)

The subscale for staffing and resource adequacy considers the availability of resources in the organisation. This subscale recorded the lowest mean scores and amongst the lowest percentage of positive scores for the five subscales across all four sites. While sites 3 and 4 had over 20% more respondents indicating positive scores than for sites 1 and 2, this subscale still rated the lowest for site 3 and second lowest for site 4 indicating staff resources to do the job were generally viewed negatively by the survey respondents across all four sites.

Collegial nurse-physician relations (NPR)

The subscale collegial nurse-physician relation (NPR) was viewed positively at all sites with the scores ranging from 60% (site 1) to 86% (site 2). Professional relationships between medical and nursing staff at all four sites would therefore appear to be productive and to be viewed positively by respondents across all four sites.

DISCUSSION

The researchers consider the number of respondents at each of the sites to be a reasonable number taking into account the limitations in accessing the population. In the context of staff participation it is pertinent to reiterate this survey was distributed soon after a workplace survey initiated by the nursing management of the facilities. This may have had an impact on the response rate as staff may have been reluctant to complete two surveys within close proximity of each other. Furthermore, as with any such study sample the researchers are careful about generalising the findings. The primary aim of this project was to measure magnet features in Australian facilities using a newly developed tool. Perhaps the most important point to make is that participants rate their work environment, not workplaces generally. Over time then, the main issue will be the proportion of respondents from a given workplace and aggregated data will be almost meaningless, at least from the perspective of being able to act in a specific workplace, based on generic data collected.

Magnetism in Australian facilities

The data demonstrates the nursing staff of the surveyed facilities were clearly positive in their responses related to the three NWI-R:A subscales of: nursing foundations for quality of care; nurse manager ability, leadership and support for nurses; and collegial nurse-physician relations. While the 'nurse participation in hospital affairs' and 'staffing and resource adequacy' subscales were rated less positively by the respondents. Staffing and resource adequacy stands out as the most negatively viewed feature by the study participants indicating this is an area that requires attention by these facilities.

The findings from this project that the quality of care provided by participants was considered to be of a high standard despite the absence of decision making opportunities for them, along with concern about limited staff and resources. These findings reflect the results of equivalent international and domestic research studies. In a large UK study of over 10,000 nurses Rafferty et al (2001), reported that despite recognised shortcomings in their workplace environments, nurses generally viewed the quality of care provided to be of a high standard. In a recent Australian research study by Duffield et al (2007) a significant number of Australian nurses also indicated they provided a high quality of care to patients within the resource poor environments.

The majority of research findings that focussed on the impact of leadership styles report that more supportive managers are more likely to have staff express higher levels of job satisfaction and remain in their positions (Sourdif 2004; Janney et al. 2001; Chan and Morrison 2000; Boyle et al 1999). Only one study by Tourangeau

and Cranley 2006 found differing results to this. In a large descriptive survey of over 13,000 Canadian nurses using the NWI-R they found the key determinants of nurses' intention to remain employed in current hospitals of employment are age, gender and job satisfaction.

In a recent comparative study by Stordeur and D'Hoore (2007) of over 1000 nurses from 12 Belgian hospitals the researchers found that support and quality of nursing leadership reported by staff were similar in both the identified attractive and conventional hospitals. The interesting aspect of this study however was the relationships that existed with nursing management were found to be more positive in the identified attractive hospitals.

Research conducted by Laschinger et al (2003) from a nursing population in Ontario tested the impact of workplace empowerment on job satisfaction finding that where nursing leaders develop a workplace environment that is empowering it can positively influence job satisfaction. Hoffart and Woods (1996) described the work environment most conducive to retaining nurses is an environment empowers nurses through opportunities for their control over the work environment. Estabrooks et al (2002) later confirmed that a positive nursing work environment enabling nurses' autonomy and involvement in professional practice decision making is important.

A significant issue in the retention of staff across a number of countries including Australia is they believe they have insufficient resources available to them in the practice environment and this impacts on patient health care outcomes. The findings from this study and the research by Duffield et al (2007) have further substantiated the view that Australian nurses working in the state of New South Wales believe they have insufficient resources available to them in the work environment and as a result are less satisfied with their workplace.

Comparison of Australian magnetism with international findings

A consideration of the overall scores from this project for the NWI-R:A show the mean scores for the Australian facilities measured in this survey were generally positive with the mean score ranging between 2.48-2.77. Comparing these mean scores to the international data from studies using the US tool and its derivatives needs to be considered within the identified limitations that occur with the variation in analysis of the tools.

Early work by Aiken et al (2000) that reported magnet hospitals with a mean score of 2.99 and non-magnet hospitals with scores of 2.83 represents a calculation for magnet features that uses only three subscales: autonomy, control over practice and nurse-physician relationships. The work undertaken by Lake (2002) in a review of two data sets of research into magnet hospitals reported the mean score for the magnet hospitals (n=1610) as 2.95 while for non-magnet hospital it was 2.5. While these results were calculated from the US tool they provide for a more meaningful comparison to the findings of this project because the same five subscales are used in the analysis of the data. The designated magnet hospitals in the Lake (2002) study report mean scores that are higher than the four hospitals in the Australian study while the non-magnet hospitals report similar scores to the lowest score for this project.

Another relevant study to consider is the work by Choi et al (2004) in a national survey of over 2,000 critical care nurses reported the magnet hospitals with a mean score of 3.19 and 2.91 for non-magnet hospitals. As identified with the body of work undertaken by Aiken et al (2000) this study also used a tool derived from the US tool but with a variation in the structure of the subscales. The results indicate higher mean scores for both the magnet and non-magnet hospitals. While this is an interesting result it needs to be noted that the project was undertaken in a specialised care area in the Canadian health system, something the authors identified as possibly influencing the difference in the findings from those of the US research.

The more recently published work by Lake and Friese (2006) and Friese et al (2008) provides the most relevant data for comparison with the findings from this project. This body of work has identified categories for hospitals using the aggregate mean scores from the PES-NWI. These categories are unfavourable nurse practice environments (scores > 2.5 for 0-1 subscale), mixed (scores > 2.5 for 2-3 subscales) and favourable (scores > 2.5 for 4-5 subscales). Friese et al (2008) in a review of 164 hospitals in the US reported 12 hospitals as unfavourable, 118 mixed and 34 favourable. The average mean score reported for each of the five subscales by Friese et al (2008) were NP - 2.33, QC - 2.84, MLS - 2.38, SR - 2.20, NPR - 2.75. While this project identified means for the five subscales as being NP - 2.46, QC - 2.75, MLS - 2.38, SR – 2.29, NPR – 2.89. The two subscales of QC and NPR are positive in both study findings while the subscales for SR and NP are both in the negative score range. The major difference is with the results for the MLS subscale in the US study the mean score is in the negative range while in this study it is in the positive range.

RECOMMENDATIONS AND IMPLICATIONS

The development of an Australian tool the NWI-R:A allows for the measurement of magnet features in Australian facilities. The results of this study indicate the respondent's views of the presence of magnet organisational features in their workplace. Further use of the Australian tool in measuring magnet organisational features across a broad range of Australian facilities will provide information about the magnetism of hospitals in Australia. Recently Lake (2007) has undertaken a systematic review of instruments used in the measurement of nursing practice environments. This work assessed relevant tools on three criteria: the theoretical relevance of the tool; the usability and the number of citations for the tool. As a result of this rigorous review the structure and analysis of the tool used in this project has been supported as the most appropriate contemporary measure for the nurse practice environment.

It has been established in this project that the nursing staff perceived the foundations for quality of care they provided to be of a high standard despite the absence of decision making opportunities and adequate staff resources. The implication of this finding being that a key determinant of nurse's perceived satisfaction is that they have a work environment that they believe supports them in delivering quality care. Alternately it could be suggested that the participating nurses in this study and others report a high quality of care because their professional conscious prevents them from considering otherwise. This leads to a recommendation for health services to monitor and acknowledge quality care to inform the staff of the care being provided at the facility. It also warrants a recommendation for health services to provide the specific resources identified as necessary by nursing staff for the provision of quality care. This requires further exploration of what resources are required for the provision of quality care.

It was expected that the results of this study would reflect the majority of research findings that have supported the view that nurses in magnet hospital rate the leadership styles of their managers as supportive. (Sourdif 2004; Janney et al. 2001; Chan and Morrison 2000; Boyle et al 1999). The implication of the findings from this project supported by the majority of literature is that the development of leadership and leaders in health care services is an important aspect for improving the magnetism of facilities.

It has been consistently found in the literature and affirmed by this study that nurse–physician relationships are perceived favourably by nurses (O'Brien-Pallas et al 1997; Laschinger et al 2001; Duffield et al 2007). The implications being that while the quality of nurse–physician relationships is currently good organisations wanting to improve magnetism should facilitate the maintenance of these relationships. A recommendation arsing from this data is for the ongoing development of multidisciplinary health relationships as a strategy for improving the practice environment.

The negative perceptions of Australian nurses about their involvement in the decision making process identified in this project and supported by the Duffield et al 2007 study shows that nurses continue to express the need for more control over their work environment. These findings highlight the necessity for organisations to empower nursing staff within the workplace. A strategy recommended for improving the magnetism of the organisation.

A number of studies including this project have identified the negative effects inadequate staffing resources have on nursing staff perceptions of the professional practice environment (Joyce and Crookes 2007; Clarke et al 2002; Sibbald 1999; Nolan et al. 1998a). Day et al (2007) in an Australian study presented similar findings to the results of this project regarding a perceived inadequacy of resources by nursing staff for achieving organisational goals. The implications arising from the strong evidence that nurses believe they are inadequately resourced are that health services must identify the areas that are seen to be lacking in the current professional practice environment. Further research is recommended by a number of researchers in an attempt to more clearly identify the resources required to improve the work environment.

The work, undertaken in the development and measurement of the NWI–R:A tool, one that is relevant to the Australian context, allows for research into magnet organisations to be progressed. The measurement of magnetism in a variety of health facilities has produced information about the presence of magnet features in the Australian context. The future includes ongoing measurement with the development of strategies, so as to allow the provision of constructive advice to organisations on how to improve magnetism within their organisations. Given the impact of magnetism on the practice environment, the significance of this work for Australian nursing seems obvious.

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