

Developing a tool to measure ‘magnetism’ in Australian nursing environments

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ABSTRACT

This paper describes the development of an Australia-specific instrument that provides a valid and reliable measure of magnet features in Australian health facilities and is a key development in the ongoing application of the magnet concept in Australia.

The magnet hospital concept, developed in the United States of America (USA) in the early eighties, identified characteristics successful in attracting and retaining nursing staff. The nursing profession in Australia is currently focused on issues of recruitment and retention; therefore it is relevant and timely to consider the significance of the magnet concept to Australian health facilities.

The project was undertaken in two stages: one using focus groups to revise the tool for use in Australia; and a second, using a questionnaire to test the reliability, validity and usability, of this revised tool, in a sample of Australian hospitals.

The focus groups identified three main issues requiring modification to the existing tool namely: language; contextual meaning; and, presentation. The data from the questionnaire shows that the analysis of the Australian version of the magnet measurement tool retained acceptable levels of internal consistency. The results of the pilot indicate that respondents were clearly positive in their responses related to the three subscales of: ‘quality of care’; ‘management, leader and support’; and ‘nurse-physician relationships’; while ‘nurse participation’ and ‘staff and resources’ subscales were rated less positively by the respondents.

This means the tool is appropriate to use in an Australian context and is able to produce specific and reliable data on magnet features in Australian health facilities. The significance of this research is that it informs the promotion of organisational change that has been shown to facilitate nursing staff retention and positive health outcomes in Australia.

INTRODUCTION

Nurses are leaving the nursing profession in large numbers and new graduates often stay for a limited period of time. It is a matter of priority for health systems to identify possible solutions to the issues of recruitment and retention if the current nursing shortages are to be resolved.

There is considerable evidence 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). In particular magnet hospitals have also been shown to have consistently produced better outcomes for staff and patients, as demonstrated in job satisfaction and quality patient care, than non-magnet hospitals (Aiken et al 1997, 1994).

The lessons learned from the global research into the magnet hospital concept are significant to Australia, as a basis for addressing the immediate needs for the recruitment and retention of professional nursing staff (Ganley 1991; Torrence and Wilson 2000). Participatory management, effective leadership, professional practice environments (illustrated by the existence of quality care, positive staffing relationships and autonomy of practice amongst nursing staff) and clearly defined career development pathways, are key issues in the recruitment and retention of nursing staff. (Aiken et al 1994; Kramer and Hafner 1989). Essentially, these are the features of magnetic hospitals (McClure et al 1983).

The purpose of this article is to provide an overview of a research project undertaken to develop a tool to measure elements of magnetism, within Australian hospitals.

BACKGROUND MAGNET HOSPITAL CONCEPT

The original Magnet Hospital study, established that hospitals successful in recruiting and retaining nursing staff possessed core characteristics (McClure et al 1983). Research by Kramer and her colleagues, building on this work, established that magnet hospitals demonstrate a lower level of nurse turnover and higher levels of job satisfaction for the

nursing staff. (Kramer and Schmalenberg 1988a, 1988b, 1991a, 1991b). Kramer and Hafner (1989) developed The Nursing Work Index (NWI) to measure nursing values in relation to job satisfaction and productivity. Further research by Aiken and associates into the Magnet Hospital concept built on the previous research refining the NWI to the Nursing Work Index-Revised (NWI-R) tool as a universal measure of hospital nursing practice environments (Aiken et al 1999, 1997, 1994).

The USA experience has demonstrated that the presence of magnet features referred to above, have an impact on the organisational and managerial structures of hospitals. Furthermore, a review by Aiken and Havens (2000) demonstrated that magnetic features have a significant impact on nursing staff satisfaction and competency and in turn patient outcomes. Thus, the practices that create a positive working environment for nursing staff are essential in improving the quality of patient care (Needleman et al 2001).

In recent times the UK government has also recognised the imperative to address the issue of the job satisfaction of nurses to facilitate their retention. They have sought to do so by increasing organisational flexibility, professional autonomy, continuing education and a progressive career structure for nurses - all elements of the magnet concept. As a result, Buchan (1999, 1997, 1994) argues that the magnet hospital concept is as relevant an approach to address the challenges facing the health system in the UK, as it has been in the USA, despite the structural differences in the two health systems.

Nursing shortages and reported dissatisfaction by nurses are not limited to the USA and the UK. Aiken et al (2001) report from an extensive survey of 43,000 nurses in the United States, Canada, England, Scotland and Germany, that despite the differences in the health systems the fundamental issues are the same. Thus, western countries appear to be faced with a long-term shortage of professional nurses as a result of the high levels of job dissatisfaction, an ageing workforce and the inability to retain new

graduates. Aiken et al (2001) accurately state that the challenges facing nurses are similar all over the world and that solutions found to successful in one country are likely to work in others. The magnet concept presents itself as such a solution.

In Australia, like other Western countries, there has been an identified shortage of practicing nurses (Preston 2002). In 1995 the NSW Minister for Health established a task force to look into nursing recruitment and retention. The report, published in 1996 by the New South Wales Department of Health on nursing recruitment and retention, included a number of recommendations based on the issues that emerged from the surveys (NSW Department of Health 1996). It highlighted the significance of flexible work practices, management of work practices and staffing, and access to professional development, as ways of improving staff recruitment and retention. Again, it can be seen that a major review produced recommendations that reflect the characteristics of magnet hospitals.

In summary then, the global research and related literature on recruitment and retention of nurses in contemporary society, leads one to conclude that when the elements of magnet hospitals are present in the structure and culture of an organisation, recruitment and retention of nurses improve, as do patient outcomes.

STUDY

Project Aim

The aim of this research project was to develop a tool capable of measuring the magnetism of hospitals in an Australian context. It made sense to do this using a modification of the established, USA based tool, the Nursing Work Index - Revised (NWI-R) devised by Aiken and Patrician (2000) and Lake (2002). In the longer-term, the intention is to use this tool to audit magnetism within Australian hospitals, with the aim of providing feedback to managers wishing to enhance the magnetism of their organisation.

The significance of this project is that it will make possible the development of a credible, validated tool, to reliably measure magnet features in Australian

health facilities, which can then be used in the promotion of organisational change that has been shown to facilitate positive health outcomes for patients and enhance the recruitment and retention of nurses.

Research Method

The project was undertaken in two stages: one using focus groups to revise the tool for use in Australia; and a second, using a questionnaire to test the reliability, validity and usability, of this revised tool, in a sample of Australian hospitals. Ethics approval was achieved from the Human Research Ethics Committee of the University of Wollongong (HE03/382).

Original Tool Development

The original NWI was developed by Kramer and Hafner (1989) from the research on magnet hospitals for the purpose of capturing a clear measure of the organisational attributes of a professional practice environment. It has subsequently been defined as a gauge for determining the extent to which a nursing care environment can be considered an environment of professional practice (Aiken and Patrician 2000). This instrument and the subsequently developed tool (NWI-R) have consistently been used to measure the organisational attributes of a professional nursing practice environment (Aiken et al 2001, 1999, 1994; Aiken and Havens 2000).

Face and content validity of the tool and subsequent versions were established using three methods:

1. development from the magnet hospital characteristics;
2. review of literature on job satisfaction and work value instruments; and
3. critique by the magnet hospital researchers.

Furthermore, the consistent use of this instrument and the statistical support for this tool throughout the literature confirms its construct validity in the assessment of magnet organisational structures (Lake 2002). Internal consistency of the NWI-R has been established using the Cronbach's Alpha statistic, with the various subscales demonstrated as being capable of reliable aggregation with

internal consistency (Lake 2002; Aiken and Patricia 2000).

Stage 1: Focus Groups

Four focus groups were conducted to review the previously validated USA -related NWI-R tool and make recommendations for the development of a revised Australian tool. The focus groups incorporated numbers between eight and ten nurses from a broad representation of the nursing profession, including representatives from aged care, acute care and community, and included both public and the private sectors representatives. Focus groups were used as they offered an appropriate method for allowing a cross representative group of nurses in Australia the opportunity to review the USA tool and make recommendations for the development of an Australian version (Kingry et al 1990).

Stage 2: Questionnaire

This stage involved the piloting of the 'Australianised' tool, the Nursing Work Index- Revised: Australian (NWI-R:A) in a sample of hospitals in the Illawarra region of New South Wales, Australia. It was contained within an anonymous questionnaire sent to registered nursing staff at these facilities, with the aim of measuring the magnetic characteristics present in the participants' workplace(s) along with biographical data and data related to job satisfaction and the nurse's intention to stay in that facility in the future.

The statistical analysis of the Australian tool replicated the work by Lake (2002) and the statistical support for this tool throughout the literature as a valid instrument in the review of magnet organisational structures. The tool includes five subscales providing a profile of the key features in magnet hospitals. Scoring of the scales was undertaken using a Likert scale of responses ranging from one to four, that is, from strongly agree (1) to strongly disagree (4).

Participants

Registered nurses, representing a variety of clinical areas were included in the purposive sample for the focus groups of stage one. Stage two of the project was also directed toward registered nurses. The

questionnaires were circulated to staff through the payroll system with responses being mailed back to the researcher using a stamped, pre-addressed envelope. This maintained consistency of sample inline with the development and research use of the tool NWI-R, which focused on registered nurses only. It also ensured privacy and confidentiality.

Focus Groups (Stage 1) Results

The focus groups identified three main issues requiring modification to the NWI-R, namely: language; contextual meaning; and, presentation. In essence they recommended that the language be amended to reflect the Australian idiom and the cultural and organisational context of Australian hospitals (eg. "We don't have Nursing Directors here") as well as making suggestions about type-face and font size, for ease of readability.

A feedback session for focus group participants was undertaken to discuss the overall conclusions from the focus groups and to provide feedback to the group(s) to ensure that relevant changes had been made. Comments from this session confirmed that the revisions made, accurately reflected the content of the focus group sessions, and that the interpretations made by the researcher were valid and had been appropriately managed. The feedback from the focus groups was used as the basis for the development of the Australian version the NWI-R:A.

Questionnaire (Stage 2) Results

The development of the NWI-R:A used the recommendations of the focus group sessions in stage one of the project to inform the modifications made to the tool.

Box 1 presents the results of the Cronbach's Alpha test of internal consistency for the NWI-R:A. This data shows that for each of the five subscales used in the analysis of the instrument, the Australian version of the tool retained the significant levels of internal consistency, found in the verified tool (Cronbach's Alpha 0.71-0.84) by Lake (2002). These subscales were titled: 'quality of care'; 'management, leadership and support', 'nurse participation'; 'staff

and resources'; and, 'nurse-physician relationships'. Therefore, these subscales reflect magnetic features of a hospital environment, having drawn on the original magnet hospitals research.

Box 1: Showing internal consistency for the results NWI-R:A

1. Quality of care

- Items: 7;22;28;30;34;36;37;43; and 44
- Cronbach Alpha: 0.7331

2. Management, leadership and support

- Items: 4;13;18; and 32
- Cronbach Alpha: 0.7060

3. Nurse participation

- Items: 8;9;14;23;26;33;35a;38; and 40
- Cronbach Alpha: 0.8709

4. Staff and resources

- Items: 1;11;12; and 16
- Cronbach Alpha: 0.8270

5. Nurse-physician relationship

- Items: 2;24; and 35b
- Cronbach Alpha: 0.7724

These results show that the NWI-R:A has statistically acceptable levels of internal consistency as all the five subscales had Cronbach's alpha ratings above 0.7 (Dunn 1989).

The author would like to acknowledge the support of the statistical department of the University of Wollongong in this analysis.

Stage 2: Pilot Survey Results

The NWI-R:A was piloted at a general district hospital in regional NSW, Australia. The sixty-four participants involved in the second stage of the research project were all the registered nursing staff, casual and part-time, of the participating hospital. The reviewed instrument (based on the recommendations of the focus group sessions) was used in the second stage of the survey. The anonymous survey canvassed the population of registered nursing staff: full, part time and casual at this hospital (N=187). There were 64 respondents, a response rate of 34.22%. This rate was not as high as anticipated by the researcher,

however this can be considered as a result of the challenge of accessing this population through what have been identified by local nursing staff subsequently as ineffective modes of communication, namely many staff do not regularly open pay-slip envelopes. Almost at the same time, management undertook a similar survey.

Box 2: Showing frequency results of subscales for the NWI-R:A

1. Quality of care

- 62.7% of participants recorded positive scores

2. Management, leader and support

- 66.7 % positive scores

3. Nurse participation

- 46.3% of the respondents indicated positive scores

4. Staff and resources

- 24.6% indicated positive scores

5. Nurse-physician relationship

- 70.3% positive scores

This data shows that respondents were clearly positive in their responses related to the three subscales of: 'quality of care'; 'management, leadership and support'; and 'nurse-physician relationships', as they received positive scores (1 or 2) from over sixty percent of the nurses surveyed. 'Nurse participation' had less than half of the respondents indicating positive responses, while the 'staff and resources' subscale was rated positively by less than 25% of the respondents.

Demographic Data

The average age of the respondents was 41 years; ninety-two percent (92%) were female. Forty-five percent (45%) of the sample were full-time employees, fifty-two percent (52%) were part-time and three percent (3%) were employed on a casual basis.

DISCUSSION

This project succeeded in its aim of developing a tool, consistent with earlier versions, for measuring magnetism in Australian hospitals. Over time, this will

allow the researcher to audit the magnet features of health institutions, along with recommendations as to how they can become more 'magnetic'.

Consideration of the data generated by the NWI-R:A on the magnet features of the facility surveyed, identified the respondents' views of the magnetism of their workplace. It can be concluded from this data that the areas of 'quality of care', 'management, leadership and support'; and 'nurse-physician relationships' were viewed positively by the nursing staff at the pilot hospital.

In responding positively to the items for 'quality of care' the nursing staff were stating that they considered the relationships established with patients in their areas were productive and contributed to a high standard of care. Favourable results in the area of 'management, leadership and support', indicated that the respondents considered their nursing leaders to be competent and possessed relevant professional profiles. The most highly rated magnet feature by respondents was that of 'nurse-physician relationships', indicating they were very satisfied with the quality and quantity of their interactions with medical staff. From these data then, we can see that the respondents felt that they: worked in clinical environments characterised by good levels of patient care; were supervised by credible, effective managers; [and] enjoyed positive professional relationships with medical colleagues.

The aspects of the hospital environment that the survey respondents indicated were lacking were in relation to 'nurse participation' and 'staff and resources'. In relation to 'nurse participation' the respondents indicated there were insufficient opportunities for them (the nursing staff) to contribute to decision making within the hospital. The area of most concern for the nursing staff in this pilot project was clearly 'staffing and resources', with responses indicating they considered the resources (human and environmental) they had to work with and within, were inadequate.

In considering these results of the pilot study it could be suggested that some anomalies exist in

the respondents' reported views of the magnet features of the hospital where they were employed. It is interesting, for example, that the respondents described 'quality of care', 'management, leadership and support'; and 'nurse-physician relationships' positively, while 'nurse participation' and 'staff and resources' were considered inadequate. One would perhaps have expected to find that anyone who feels they provide a high standard of care would only feel able to do so with adequate resources. Similarly if people believe they are well supported by their leaders and managers and have good working relationships with medical colleagues, one would expect them to feel involved in decision-making.

What these data suggest however is that these nurses at least, felt a sense of satisfaction with the quality of care they provided whilst not having much of a say over what care was to be provided and perhaps in the absence of resources. They therefore managed to retain a sense of professional pride in their work in spite of a reported lack of resources and input into decision-making. It could be therefore that they were satisfied with the quality of care they provided, relative to what could reasonably be expected in the circumstances, rather than relative to 'optimal' levels of care.

It may also be that, for whatever reason, these respondents did not need to feel involved in clinical decision-making to feel fulfilled or to provide good care. This may have been different perhaps if they had not had positive relationships with medical colleagues or good quality nursing leadership. The implication of these data and the ensuing discussion is that it highlights the imperative to collect and collate qualitative data alongside the NWI-R:A so as to allow meaningful interpretation of the data and thus useful advice to be given to managers, regarding increasing magnetism in their jurisdiction(s).

CONCLUSION

This work, undertaken in the development of the NWI-R:A tool, one that is relevant to the Australian context, allows research into magnet organisations to move forward. The results for Nursing Work

Index-Revised: Australian (NWI-R:A) have shown that the Australian version of the tool produced statistically acceptable internal consistency scores. This means the tool is appropriate to use in an Australian context and is able to produce specific and reliable data on magnet features in Australian health facilities. The next step in this research program will be to use the tool to measure magnetism in a variety of health contexts in Australia. The future includes the development of feedback content and strategies so as to allow the provision of constructive advice to managers about how they can improve elements of magnetism within their jurisdiction(s). Given the impact of magnetism on outcomes for both staff and patients, the significance of this work for Australian nursing seems obvious.

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