Magnet Work Environment at Military Hospitals As Perceived By Registered Nurses in KSA

Fatimah Alshahrani[1], Hasnah Banjar [2], Sabah Mahran[3]
[1](Nursing Department/King Fahd Military Hospital, Southern Region, Saudi Arabia)
[2](Assistant Prof in Nursing Administration / King Abdullaziz University, Jeddah, Saudi Arabia)
[3](Assistant Prof in Nursing Administration / King Abdullaziz University, Jeddah, Saudi Arabia)
Corresponding Author: Fatimah Alshahrani

Abstract : *Health care system in the Kingdom of Saudi Arabia (KSA) is going through dynamic changes to increase the nurses' job satisfaction and retention. By establishing magnet nursing work environment in Saudi hospitals, recruitment and retention will be improved. The studies to develop magnet work environment for nurses in Saudi context are very few and limited. Hence, this research aimed to attain a better understanding of the perceptions of nurses towards the magnet work environment characteristics that existed in their workplace structure.*

Aim: *To assess the characteristics of nurses' magnet work environment at Military Hospitals as perceived by Registered Nurses in Saudi Arabia.*

Methods: *Cross sectional design was used.* **Settings:** *King Fahd Military Hospital &King Faisal Military Hospital at Khamis Mushyat City.* **Sampling**: *A random stratified sample composed of 312 Registered Nurses.* **Research Tool:** *Essential of Magnetism tool version two (EOMII).*

Results: *The highest ranked magnet characteristics were: 'Supportive Nurse Manager Relationships (77.5%) and Working with other Nurses who are clinically competent (75.4%) while the lowest ranked characteristic was perceived support for education (17.5%).*

Conclusion: *There is growing interest toward magnet work environment. It is an important to support continuous nursing education program and competency training programs to establish a magnet work environment.*

Keywords: *Healthy Nursing Working Environment, Forces of Magnetism, Organizational Characteristics, Organizational Attributes, Nursing Work Environment, and Magnetic Work Environment.*

I. Introduction

Nursing work environment has been a major subject for research since 1980 and widely studied in the nursing literature. It has received high attention globally because of the redesign and restructure of healthcare systems in many different countries during the last two decades **[1].** Magnet nurses' work environment is defined as the workplace that is able to attract and retain professionally qualified nurses to provide quality healthcare services [2]. This environment consist of characteristics that help in maintaining the standards of nursing practice as well as provide high quality of patient care services which, consequently helps to achieve organizational goals, better outcomes, and high level of nurses' performance.

Globally different studies have reported the positive outcomes of magnet nurses' work environment in terms of quality of health care, work environment, patients and nurses' satisfaction, professional practice environment, success in achieving personal and organizational goals and enhanced retention rate of nursing staff [3-6]. Unlike the western countries the Kingdom of Saudi Arabia (KSA) faces challenges in achieving gold standards' in nursing practice.

Transformation of health care policies and regulation and following the journey of magnet work environment is new to Saudi health care system [7]. Studies conducted among nurses of Saudi Arabia reported high rate of turnover, high and stressful work environment, lack of satisfaction and lack of leadership. There are many evidences from the literature supporting the need of professional nursing work environment for improving not only healthcare services of the patients but also providing conducive and learning environment to the nurses [8-10]. Unlike the developed countries Saudi Arabia requires significant efforts to implement professional work environment as current nursing environment lacks important key factors that are crucial for running this professional smoothly [7].

The aim of the current study is to measure the characteristics of nurses' magnet work environment at Military hospitals in Southern Region of KSA. As this work system is new in KSA very few studies have been

conducted in past to evaluate this system thus we aimed to identify the magnet work environment characteristics from the nurse's perceptions and also to determine the factors that impacts the magnet work environment from the nurse's perceptions.

Donabedian Quality Assessment Framework (S-P-O) paradigm adopted from Kramer &Schmalenberg was used as a conceptual framework [10, 11]. His paradigm has three major components to evaluate the quality of nursing workplace environment; Structure (physical environment including human resource), Process (action) and Outcome (final results). This paradigm is best match for the current study as structure component will deal with human resource elements such as nurse managers, maintenance of services, and required equipment as well as to ensure efficient number of qualified nursing staff. The process component will deal with the technical aspects of care services such as management decision making strategies and coordination of nurses functions and/ or practice and the last outcome component will deal with the outcomes such as attraction, retention, nurses' job satisfaction, and nurses assess unit patient quality care.

II. Methods

2.1 Sample Size and Sampling

A quantitative descriptive design was used to carry out the research at two Military Hospital King Fahd & King Faisal Military Hospitals located at Asir region. These hospitals have unique organization and structural norms as this hospital facilitates military staffs and their families along with the local residents. Total sample size of 317 registered nurses (RN) was calculated by using Raosoft web site by keeping margin of error as 5%, confidence interval of 95%, and target population size as 1800. Stratified random sample of 317 RNs were recruited from 21 different units of these two hospitals. Duty rosters were taken as sampling frame and all those nurses who were responsible and accountable for providing direct patients care and have at least two years' experience were included in this research while RNs with managerial position such as charge nurses and those who were on leave (vacation) were excluded. After taking the proper consent from randomly selected nurses, registered nurses were included in the study.

2.2 Questionnaire

A self-administered questionnaire name modified Essentials of Magnetism (EOMII) was used. Socio-demographics such as age, gender, and level of highest education, holding specialty or sub specialty certification, years' experience of RNs in nursing and in the current hospital, planning to stay in current hospital, clinical units working in, and working shifts (12 hours shift or 8hours shift) were also included. While the EOMII based on 4 points likert scale has two parts, Part A focuses on nurses work environment characteristics, 58 items covering 8 essentials characteristics 1: Collegial/Collaborative RN/MD Relationships, 2: Perceived Support for Education, 3: Clinical Autonomous Decision-Making, 4: Control over the Context of Nursing Practice, 5: Perceived Adequacy of Staffing, 6: Working with other Nurses who are Clinically Competent, 7: Supportive Nurse Manager Relationship and 8: Culture in which Concern for the Patient is Paramount. Part B of the questionnaire measured RNs perception of the ―usual quality of care provided to patients on their unit. The following mean scores were used for identifying the RNs responses on 4 point likert scales; mean values 1-<1.75 strongly disagree, 1.75- <2.50 disagree, 2.50- <3.25 agree and 3.25- 4 strongly agree. For comparing the results with the National Magnet Profile percentages 2008, percentages were also calculated. For the second part of the questionnaire 0-10 point scale were uses 0 indicating dangerously low, 5 indicating safe but not much and 10 indicating very high quality. Ethical approval for using the questionnaire was taken from the EOMII tool authors. Moreover for the conduct of the study, ethical approval was taken from the Nursing College of KUA and King Fahd &King Faisal Military Hospitals research ethical committee.

2.3 Pilot study

A pilot study was conducted on 32RNs over the 2weeks period and findings of the pilot study showed 91.7% reported tool was easy to answer and understandable and the time duration required to fill the tool was 10 minutes. The internal consistency of tool was 0.93. While for content validity the penal of experts who are working in nursing specialty with PhD degree and specialized on nursing administration sat together and edited language as per the culture context.

2.4 Data collection methods

Before data collection meetings were held with the head nurses and nurses' administrators in both the hospitals to familiarize them with the purpose of the study and recruitment procedure. Sealed envelopes were provided to the head nurses. A clear follow-up reminder dates and the number of RNs required to participate from each unit was labeled on each unit envelope to improve response rates. Closed collection boxes were placed in each unit to maintain privacy and confidentiality of the participants and data.

2.5 Statistical Analysis

Data analysis was conducted in Statistical Package for the Social Sciences (SPSS®) version 22. After data entry, the data were cleaned and descriptive analysis was done for demographics and EOMII. Central tendency and variability test for 58 items was run to obtain a mean score and standard deviation. Moreover independent t-Test and Analysis of Variance (ANOVA) as well as post hoc multiple comparison test were used to see the associations of 8 components with the socio-demographics variables.

III. Results

Table 1 demonstrated socio-demographic characteristics of study participants. Almost, (93%) of the participants were of age 25 to 35 years and 92.3% were females and more than half had done BSN and 78.8% had done some other certifications. Also, of total 75.3% were planning to continue their job and more than half 57.4% had experience of more than 5 years in the current facility. Of total 86.2% nurses were doing 12 hourly shift and more than half were working in critical care unit.

Table 1: Distribution of Socio-Demographics Characteristics Related to Nurses (n=312)

Socio-Demographics	Frequency (%)
Age in years	
25-30	96(61.9)
30-35	97(31.1)
35-40	59(18.9)
>40	60(19.2)
Gender	
Male	24(7.7)
Female	288(92.3)
Level of Education	
Diploma	148(47.4)
BSN	162(51.9)
Others(MS, PhD)	2(0.6)
Holding other certification	
Yes	66(21.2)
No	246(78.8)
Planning to stay	
Yes	235(75.3)
No	77(24.7)
Years of Experience	
2-5	22(7.0)
>5	290(92.9)
Years of Experience in Current Hospital	
2-5	133(42.6)
>5	179(57.4)
Work Hours shift	
12	269(86.2)
10	43(13.8)
Work Unit	
Critical Care	173(55.4)
Acute Care	139(44.5)

Table 2 demonstrated the mean and SD for EOMII items for the overall characteristics. For all the characteristics except for the perceived support for education the total scores demonstrated agreement of the nurses. For the first characteristic that is collaborative nurses and doctor's relationship, of total 6 items, the mean for nurses towards disagreement was on one item only that was that the relationship is formal and is for information exchange[Mean: 2.0(SD: 0.71)]. For second characteristic regarding support for education the mean for nurses towards disagreement were for having financial assistance or paid time off [Mean: 2.4(SD:0.88)]. For third characteristic related to autonomous decision making; of total 9 items the mean scores for disagreement was on two (autonomous is risky [Mean: 2.0 (SD:0.63)], rules prevent for making decision [Mean:2.0 (SD: 0.64)]) and strongly disagreement was on 1 item (obtain consent before taking any decision [Mean: 1.9 (SD: 0.61)]). Regarding fourth characteristic which is about control over the context of nurse practice the mean scores were towards agreement for 7 items while for the management and other nursing polices the mean scores were towards disagreement [Mean:2.1(SD: 0.59)]. Fifth characteristic is related to perceived adequacy of staff. Of total 6 items, mean score towards disagreement was related to 1 item which was No consistently budgeted sufficient RNs positions with [Mean: 2.1 (SD: 0.68)]. Sixth, seventh, and eighth characteristics those covered the relationship with other nurses who are clinically competent, supportive nurse manager and Culture in which Concern for the Patient is Paramount respectively. Mean scores for all the items were towards agreement for all the three characteristics.

Table 2 also displayed the ranks order of total mean percentages for nurses' magnet work characteristics as perceived by study sample. In current study setting, the highest ranked characteristics were: supportive nurse manager relationships (77.5%), working with other nurses who are clinically competent (75.4%) and culture in which concern for the patient is paramount (75.2%). In comparison to National Magnet Profile (NMP, 2008) of EOMII, the current study showed that the perceived adequacy of staffing characteristic was higher (69.6%) than NMP percentage (44%). Also, the according to NMP culture in which concern for the patient is paramount characteristic, control over the context of nursing practice characteristics, and perceived Support for Education characteristic should achieved (100%) while in the current study these domains are not 100%. Regarding the part B of the questionnaire which is about quality of Care Provided to Patients on Unit by RNs, 286 nurses reported it of very high quality and the percentage is higher than the NMP 2008 that is 91.6% vs 83.6%.

Table 2: Mean, standard deviation and rank order for EOMII domains reported by nurses (n=312)

EOMII	Mean (SD)	Weighted Mean Interpretation	Total Mean Percentage (%)	NMP of EOMII 2008 (%)
Collegial/Collaborative Registered Nurse /Medical Doctors Relationships Scale by RNs	2.7(0.33)	Agree	67.2	69
Perceived Support for Education Scale	0.70(0.13)	Disagree	17.5	100
Clinical Autonomous Decision-Making Scale by RNs	2.5(0.27)	Agree	62.7	88
Control over the Context of Nursing Practice Scale by RNs	2.6(0.33)	Agree	67.4	100
Perceived Adequacy of Staffing Scale of RNs	2.7(0.23)	Agree	69.6	44
Working With other Nurses Who are Clinically Competent" Scale by RNs	3.0(0.40)	Agree	75.4	78
Supportive Nurse Manager Relationships Scale by RNs	3.1(0.43)	Agree	77.5	81
Culture in which Concern for the Patient is Paramount " Scale by RNs	3.0(0.73)	Agree	75.2	100
Overall EOMII	2.9	Agree	72.5	>/=93

Differential analyses were also conducted to see association of EOMII scales with socio-demographics variables. Table 3 displayed that there was statistical significant (P= 0.019*) in means comparisons of the RNs gender for the supportive nurse's manger scale. The level of education of RNs had no statistical significant for any domain of EOMII except for the clinical autonomous decision making scale (P= 0.037*). Moreover, there was statistical difference in years of experience of RNs in current hospital for the domain working with other nurses who are clinically competent (P= 0.018*). The intention of RNs in staying and working at AFHSR was highly significant with all EOMII domains. Regarding the part B of the EOMII there was statistical significant difference related to years of experience in current hospital and working in same hospital with p value <0.05.

Table 3: Differential Analysis of EMOII Domains with Socio Demographics Characteristics (n=312)

EOMII	Gender	Education	Experience in Current Hospital	Continue Working in Current Hospital
Collegial/Collaborative RN/MD Relationships	0.061	0.122	0.422	**<0.001**
Perceived Support for Education	0.197	0.851	0.475	**<0.001**
Clinical Autonomous Decision-Making	0.484	0.037	0.318	**<0.001**
Control over the Context of Nursing Practice	0.169	0.586	0.576	**<0.001**
Perceived Adequacy of Staffing	0.103	0.087	0.904	**<0.001**
Working with other Nurses who are Clinically Competent	0.097	0.622	**0.018**	**0.012**
Supportive Nurse Manager Relationships	**0.019**	0.238	0.906	**0.004**
Patient is Paramount	0.678	0.964	0.065	**<0.001**
Quality of Patient Care	0.554	0.058	**<0.001**	**<0.001**

IV. Discussion

Over the past 20 years medical facilities has been reformed and since then different approaches are under the discussion and one such approach is magnet nursing work environment as this approach is consist of characteristics or attributes influencing both nursing practice and quality patient care [12].

RNs' perceptions of healthy, magnetic work environment depend on many factors such as hospital structures, standards, the nature of employees' culture and experiences, the administration collaboration and type of services provided in their setting [13]. For instance in current study, the nurses were recruited from the military hospitals and military hospitals have a unique infrastructures and assorted relationships among the administrative team members, physicians, and nurses and also the environment is centralized, having bureaucratic layers, formal collegial relationships, and long working hours [14]. All these factors along with individual preferences were the main reasons behind the study findings.

Review of past literature has shown that a healthy relationship is a prerequisite to form a good, magnetic work place by professional cooperation, real inter-communication, willingness for higher standard of healthcare services [15]. In this study nurses also reported that nurse-physician relationships are based on mutual power, trust, and respect. Furthermore, the result reflected that nurses and doctors learn from each other and share experience and knowledge with each other in order to provide best service to patients. Majority of doctors treat RNs equally. This esearch results are in harmony with the findings of the study conducted in 2013 and 2014 reported that the good relationship between nurses and doctors leads to better performance, communication, better health of the individuals, fewer professional medical mistakes, and less employees' turnover [16, 17]. The overall mean score (2.7) for the quality of collegial/ collaborative relationship of nurses and medical doctors' is also in harmony with the findings of study done in 2013 by Choi, Cheung, & Pang reported the mean of 2.79, indicating that the respect and trust among nurses and doctors is the most important factor for effective communication, teamwork, and patient's safety [18].

Educational support is an essential basic factor in magnet nurses 'work environment. Both doctors and nurses are encouraged to continue the process of learning and educating themselves with new techniques and advancement. In this study the overall score for this characteristic was 0.07 which indicate that RNs are strongly disagreed about the management support for staff nurses education. Unlike the findings of this study to study done by Ulrich, Woods, & Early in 2014 the overall mean score was 2.63 indicating agreement of nurses for perceived educational support [16]. There is a room for improvement in our setting for promoting educational support for nurses.

Regarding decision making, the overall mean indicated the agreement of nurses however the mean is lower than the finding of one study conducted in Saudi Arabia by Adoshaiqah in 2015 reported the mean 3.7 [8]. The main reason behind this low mean score is the nature of Military (Army) work environment which is centralized structure that's hinders the association between members of organization, hinders the personal growth and inhibited the creative solutions for the issues. Our finding suggested that nurses should be allowed to take independent decisions which will in turn improve the clinical practice and patients' health.

Regarding control over context of nursing practices, the overall mean score in 2.7 indicating that instead of centralized structure of Military hospital, nurses are respected for their decisions related to policies and practices.

Adequate staffing was evaluated based on how RNs were able to take care of patients in a manner that is secure, well-timed, productive, efficient, and equitable. Regarding adequacy of nursing staff, the total mean agreement of this scale was (M=2.7) which appeared that RNs agree about the adequacy of staffing in Military hospitals at Southern region of KSA. The results are in agreement with the finding of study conducted in 2014 in Australia that reported the mean score of 2.8 [19].

Regarding nurses competency the mean score was 3.0 which indicated the nurses greed about their competence and they are recognized and rewarded for it. Similar findings found in the Aboshaiqa, 2015 study; it scored as (M=3.53) and interpreted as good which appears that the nurses felt they are competent event when they not always recognized and rewarded [8]. However while looking into the certification and perceived support for education we can see that the numbers are not that appealing thus continuous educational program, certification and on-going training should be promoted.

For nurse-manager relationship the mean score was 3.1 comparable to the findings of the study conducted in Australia reporting the mean of 3.0 [19]. Finding in this study highlights that the hospitals contain efficient managers that supports nursing leadership, effective communication, collaborative relationships, and promotion of decision-making among nurses.

In this research, the culture was evaluated base on how Military RNs value health care costs, anticipate the change, and transmitting the value of current organization to new team members. Table 9 displayed that the patient care in these hospitals demonstrated based on the concept of cost effectiveness while the patient needs and preferences comes first. The mean score of 3.0 indicated agreement of nurses towards cost effective nature of military hospitals prioritizing the need and health care of the patients.

As per Kramer & Schmalenberg National Magnet Profile (NMP) provides correct picture and provides room for comparison and evaluation therefore we have used this for comparing overall EOMII mean percentage [20]. As per our comparison we concluded that military hospitals need to improve on many domains as 7 characteristics of magnet work environment did not achieve NMP percentages. Only "adequacy of staffing

characteristic" was scored above NMP. Generally, this difference in scoring may due to the different of study settings. The NMP was done in academic, teaching, and community hospitals where this research done in Military settings. Nevertheless these factors can be addressed and modified through offering some changes strategies to standards practice and policies.

The major limitation to this research was that the research conducted at one sector of health care setting in the Southern Region of KSA that may limited the generalizability of the results to others healthcare settings. To improve generalizability of these the findings is to replicate the research in other sectors of healthcare system such as Teaching Hospitals, Ministry of Health (MOH) Hospitals, and other care facilities with various geographic and hospital characteristics. Moreover, there are limited data and resources available to compare the research findings to the other nursing work environment research within the Saudi healthcare context. Further research on the characteristics of a nursing work environment from different target groups is necessary to compare among the direct RNs and nurse leaders 'perceptions and determine possible strategies or interventions to improve the work environment. Also, others allied healthcare professionals and sectors could be surveyed for their perception to create general picture about the medical work environment within Saudi healthcare system. More studies are needed for understanding the factors in the hospital work environment that influence patient and nurse outcomes and the relationship between these structures, nurse work processes, and patient, nurses, and organizations outcomes should be overemphasized; unfortunately, no resources evaluate the outcomes that related to Saudi nursing work environments.

V. Conclusion

This research has provided descriptive data regarding to organizational characteristics which considered as baseline data of the status of nursing work environment at Military Hospitals in Southern Region of KSA. Through this study we concluded that nurses should be encourage to take part in decision making, provide financial assistance for improving nursing education program, conduct periodic assessment in order to ensure healthy work environment and lastly further studies are needed to build upon the findings of current study.

Acknowledgment

References

[1]. Hinno S, Partanen P, Vehviläinen- Julkunen K. The professional nursing practice environment and nurse- reported job outcomes in two European countries: a survey of nurses in Finland and the Netherlands. Scandinavian journal of caring sciences. 2012 Mar 1;26(1):133-43.

[2]. McClure ML, Hinshaw AS, editors. Magnet hospitals revisited: Attraction and retention of professional nurses. Amer Nurses Assn; 2002.Kutney-Lee A, Stimpfel AW, Sloane DM, Cimiotti JP, Quinn LW, Aiken LH. Changes in patient and nurse outcomes associated with magnet hospital recognition. Medical care. 2015 Jun;53(6):550.

[3]. Stimpfel AW, Rosen JE, McHugh MD. Understanding the role of the professional practice environment on quality of care in Magnet® and non-Magnet hospitals. The Journal of nursing administration. 2014 Jan;44(1):10.

[4]. Liu K, You LM, Chen SX, Hao YT, Zhu XW, Zhang LF, Aiken LH. The relationship between hospital work environment and nurse outcomes in Guangdong, China: a nurse questionnaire survey. Journal of clinical nursing. 2012 May 1;21(9- 10):1476-85..

[5]. Nantsupawat A, Srisuphan W, Kunaviktikul W, Wichaikhum OA, Aungsuroch Y, Aiken LH. Impact of nurse work environment and staffing on hospital nurse and quality of care in Thailand. Journal of Nursing Scholarship. 2011 Dec 1;43(4):426-32..

[6]. Alghamdi MG, Urden LD. Transforming the nursing profession in Saudi Arabia. Journal of nursing management. 2016 Jan 1;24(1).

[7]. Alharbi AY. LEADERSHIP STYLES OF NURSE MANAGERS AND THEIR EFFECTS ON NURSE AND ORGANISATIONAL PERFORMANCE, ISSUES AND PROBLEMS.

[8]. Aboshaiqah AE, Hamadi HY, Salem OA, Zakari N. The work engagement of nurses in multiple hospital sectors in Saudi Arabia: a comparative study. Journal of nursing management. 2016 May 1;24(4):540-8.

[9]. Alotaibi J, Paliadelis PS, Valenzuela FR. Factors that affect the job satisfaction of Saudi Arabian nurses. Journal of nursing management. 2016 Apr 1;24(3):275-82.

[10]. Kramer M, Schmalenberg C, Maguire P. Nine structures and leadership practices essential for a magnetic (healthy) work environment. Nursing Administration Quarterly. 2010 Jan 1;34(1):4-17..

[11]. Kramer M, Schmalenberg C. Revising the Essentials of Magnetism tool: there is more to adequate staffing than numbers. Journal of Nursing Administration. 2005 Apr 1;35(4):188-98.

[12]. Gu LY, Zhang LJ. Assessment tools of nursing work environment in magnet hospitals: A review. International Journal of Nursing Sciences. 2014 Oct 10;1(4):437-40.

[13]. Djukic M, Kovner CT, Brewer CS, Fatehi FK, Cline DD. Work environment factors other than staffing associated with nurses' ratings of patient care quality. Health Care Management Review. 2013 Apr 1;38(2):105-14.

[14]. Lang GM, Patrician P, Steele N. Comparison of nurse burnout across Army hospital practice environments. Journal of Nursing Scholarship. 2012 Sep 1;44(3):274-83.

[15]. Kieft RA, de Brouwer BB, Francke AL, Delnoij DM. How nurses and their work environment affect patient experiences of the quality of care: a qualitative study. BMC health services research. 2014 Dec;14(1):249.

[16]. Ulrich BT, Lavandero R, Woods D, Early S. Critical care nurse work environments 2013: a status report. Critical care nurse. 2014 Aug 1;34(4):64-79.

[17].   Weinberg DB, Avgar AC, Sugrue NM, Cooney- Miner D. The importance of a high- performance work environment in hospitals. Health services research. 2013 Feb 1;48(1):319-32.
[18].   CHOI SP, Cheung KI, PANG SM. Attributes of nursing work environment as predictors of registered nurses' job satisfaction and intention to leave. Journal of Nursing Management. 2013 Apr 1;21(3):429-39.
[19].   Walker K, Fitzgerald K, Duff J. Supporting a healthy culture: Results of the practice environment scale, Australia in a Magnet® designated hospital. Journal of Nursing Administration. 2014 Dec 1;44(12):653-8.
[20].   Kramer M, Schmalenberg C. Confirmation of a healthy work environment. Critical Care Nurse. 2008 Apr 1;28(2):56-63.