Assessment of Essential of Magnetism in Nursing Practice Environment at Fayoum University Hospital

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Abstract

Background: Understanding the behavioral antecedents and consequences of magnet practices would be useful in promoting its beneficial adoption in the healthcare system. **Aim of the study:** To assess 'Magnetism' in nursing practice environment at Fayoum University Hospital. **Subjects and Methods**: **Research design:** a cross-sectional descriptive design **Setting:** The study was carried out at Fayoum University Hospital **Subjects:** Stratified random sample of 160 nurses working at Fayoum University Hospitals. **Tools of data collection:** A self-administered questionnaire including the Practice Environment Scale of the Nursing Work Index (PES-NWI) tool was used for data collection. **Results:** Findings revealed that the sample had more female nurses (52.5%), with age range 21 to 59 years, with 79.4% having technical institute diploma. The absence days ranged between 2 and 63, with median 16 days. The intention to leave the work in the hospital was 32.5%. **Conclusion:** More than a half of the nurses view their workplace as magnet hospital. The agreement is highest upon the relations between nurses and physicians, and lowest upon the sufficiency of staffing and resources. The agreement is significantly related to gender, age, and residence, qualification, and experience years. The intention to leave is higher among males, unmarried nurses not living with their families. Improvements in work environment are needed to retain these nurses. **Recommendations:** The study findings be used to highlight the positive and negative magnet features to establish a profile of magnetism for the facility, with more focus on the dimension of staffing and resources. Strategies to improve staff retention are urgently needed, especially for vulnerable ones. A better understanding of the Egyptian nursing practice environment can be achieved by conducting an increased number and broader range of studies using the NWI.

Keywords: Magnet hospital, absenteeism, intention to leave, nursing practice

Introduction:

The concept of "Magnet" hospitals emerged from the national nursing shortages that occurred in the United States during the1970s and 1980s. The term is used to indicate an institution that had successfully attracted and retained nurses despite the national Registered Nurse shortage [(1)].Today; magnet recognition is one of the most important efforts in healthcare to recognize a positive work environment. "Magnet" recognition is awarded by the American Nurses' Credentialing Center (ANCC) to hospitals that satisfy a set of criteria designed to measure the strength and quality of their professional nursing practice [(2)]

Labels are given to these characteristics, known as the forces of magnetism these are related to organizational performance, leadership, worker autonomy and motivation, decentralized or participative management, work design, coordination and communication, effective groups and teams, and organizational innovation and change [(3)]

A professional nursing practice environment characterized by high quality leadership and management, sufficient staffing, positive nurse-physician relationships, reasonable

workloads and appropriate working conditions is required to ensure and sustain high quality patient care[4]. Moreover, in hospitals with favorable work environments, lower patient to nurse ratios, and lower proportions of nurses carrying out non-nursing tasks frequently, fewer nurses reported leaving nursing care undone[5].Thus, a positive practice environment contributes to nurses' job satisfaction[6].On the contrary, negative outcomes associated with a poor practice environment include nurses' intent to leave, and higher levels of burnout and turnover among them [7].

Significance of the study:

Nursing shortage is a major problem that has implications for the quality of nursing care and the production of health services. Previous studies in Egypt indicate the presence of a severe shortage of the qualified nurses, with the ratio of nurses to population at 1.3–2.6 per 1,000 population, which is low compared with other countries in the Eastern Mediterranean Region who have ratios of 3.3 to 6.17[8]. The Ministry of Health and Population in Egypt seeks to advance the quality of nursing education by graduating more qualified nurses and eliminating the high school level nursing education, which educates about 90% of nurses in Egypt. However, to accomplish this policy there should be strategies to retain and attract nurses. The shortage of nurses affects patients' quality of care, nurses' job satisfaction, and their willingness to stay in the profession. Therefore, nurse leaders need to identify factors in the work environment that can influence increased retention and attract new nurses in order to maintain an adequate workforce. Hence, this study can contribute to the growing body of knowledge to assess magnetism in nursing practice environment at Fayoum University Hospital and its related factors.

Aim of the study:

The aim of this study was to Assess Magnetism in nursing practice environment at Fayoum University Hospital

Research questions:

1- Is Fayoum University Hospital magnet hospital or not?

2- What are the areas needing improvement in nursing practice environment at Fayoum University Hospitals?

Subjects and Methods:

Research design:

A cross-sectional descriptive design was used to achieve the aim of the study.

Study Setting:

The study was carried out at Fayoum University Hospital. This 228-bed hospital provides comprehensive care for patients in Fayoum governorate. It is staffed by 194 nurses with different nursing qualifications including bachelor and diploma degrees. The hospital has 11 inpatient units as follows: medical (36 beds), surgical (36 beds), obstetrics (18 beds), pediatrics (26 beds), intensive care (22 beds), ophthalmology (18 beds), urology (18 beds), orthopedics (26 beds), premature (6 beds), and hemodialysis (10 beds) units, in addition to the operation rooms (10 beds).

Study Subjects:

The total number of nurses working in the hospital consisted of 194 nurses during the time of the study. To be included in the study sample, the only inclusion criterion set was a minimum of one-year experience in the hospital.

Sampling technique:

A stratified random sampling technique was used to recruit nurses from all the hospital units. Accordingly 160 nurses were chosen as follows; Intensive care unit(27 nurses), Medical (25 nurses), Surgical (19 nurses), Pediatrics (13nurses), Premature (9 nurses), Orthopedics (9 nurses), Urology (8 nurses), Hemodialysis (8 nurses). Ophthalmology (8 nurses), Obstetrics (7 nurses), Operations room (27 nurses).

Sample size:

The sample size was calculated to measure an expected perception rate of magnetism of 50% or higher among nurses, with a 95% confidence level, and a 4% absolute precision, using the sample size equation for estimation of single proportion, with finite population correction Kish and Leslie,[9]

$S=(z_{\alpha/2})^2 p(1-p)/D^2$

,n=s/1+ S/population.

Where: S = sample size for infinite population, n = sample size for finite population, p = 0.50, D = 0.004

Tools of data collection:

Aself administered questionnaire sheet was used in data collection. It consisted of the following two parts.

Part I: This was intended to collect data related to the demographic characteristics of the study subject such as age, nursing qualification, marital status, work unit, job position, years of experience, attendance of training courses, and residence.

Part II: This consisted of the Practice Environment Scale of the Nursing Work Index (PES-NWI) developed by Lake [10]. This tool was used to measure the extent to which a nurse's work setting facilitates professional nursing practice as exemplified by the original magnet hospitals. It is the most widely reported measure used to gauge the state of nursing practice environments; and is recommended by several United States organizations promoting quality healthcare Warshawsky and Havens [11].

The PES-NWI scale comprises 31 items classified into five subscales that characterize the nature of professional nursing practice in the original magnet hospitals as follows. The PES-NWI scale contains five subscales with a total of 31 items: Nurse Participation in hospital affairs (9 items), nursing foundation for quality of care (10 items), nurse manager ability, leadership, and support of nurses (5 items), staffing and resource adequacy (4 items), and collegial nurse-physician relations including (3 items).

Scoring System:

The items were scored from "4" to "1" for the responses from "strongly agree" to "strongly disagree." The scores of each subscale and for the total scale were summed up and averaged for a range of scores from 1 to 4. Higher scores indicate more agreement that the subscale items are present in the current job. Values of 2.5 or higher indicate general agreement, whereas values below 2.5 indicate disagreement that the characteristic measured by the scale is present Lake and Fries, [12].

Content validity and Reliability:

Upon selection of the scale, the researcher managed to translate it from English to Arabic format by bilingual experts. This was done using the translation-back-translation process to preserve the original tool validity as recommended by Behling and Law [13]. After translation, the tool was presented to a panel of five experts in the field of nursing administration (one assistant professor from Ain Shams University, two assistant professor from Cairo University, one professor from Zagazig

University, and one assistant professor from Mansoura University Faculties of Nursing). They reviewed the tool for relevance, comprehensiveness, clarity, and ease for implementation. No changes in the tool were recommended. It showed a high degree of reliability, with Cronbach alpha coefficient 0.92

Fieldwork:

The fieldwork was executed in three months from the beginning of January to the end of March 2015. Firstly, the researcr obtained official approvals to conduct the study through meetings with unit heads to clarify the objective of the study and the applied methodology. Then, the researcher met with the eligible nurses, explained to them the aim and process of the study, and invited them to participate. Those who agreed were handed the questionnaire form along with some instructions regarding its filling. This was done at the workplace, and it took 15 to 20 minutes from each to fill the form. The researcher was present all the time for any questions, and collected the filled forms after revising them for completeness. The work was done in the morning and evening shifts in three days of the week.

Pilot Study:

Was conducted to assess the clarity and applicability of the tool, and to detect any obstacles or problems that may be encountered during data collection. It was done on 20 nurses (10%of nurses in the study sample). The time consumed in filling the tool ranged from 20 to 30 minutes. The result of the pilot study led to some modifications The pilot subjects excluded from the main study sample.

Administrative and ethical considerations:

Approval to conduct the study was obtained from the medical and nursing directors of the hospitals and the head nurses of the units after explaining the aim of the study. The participants were informed that their participation in the study is completely voluntary and the cover letter introducing the study addressed the confidentiality of the participants. Consent was established with the completion of the questionnaires.

Statistical design:

Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations and medians and interquartile ranges for quantitative variables. Cronbach alpha coefficient was calculated to assess the reliability of the tool used through its internal consistency. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. In larger than 2x2 cross-tables, no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of magnetism and absenteeism, multiple linear regression analysis was used. Statistical significance was considered at p-value <0.05.

Results:

Table 1, demonstrates a slightly higher percentage of female nurses in the study sample 52.5%. Their age ranged between 21 and 59 years, with median 25 years. Approximately 60.6% of the nurses were married whereas 38.1% were singles. Almost 79.4%of them were having technical

institute diploma, whereas only 11.3% had bachelor degree in nursing.

Figure 1 illustrates slightly more than a half of the nurses were having an urban residence 51.3%

Table 2 Concerning of nurses' job characteristics, the table indicates that the highest percentages were working in the critical care 16.9% and theatre 16.9%, while the lowest was in obstetrics and gynecology 4.4%. Their total experience years and the experience years in the hospital ranged between one and 40 years, with median 5 years. Meanwhile, their experience in the current unit ranged between one and 35 years, with median 3 years.

Figure 2, illustrates that nurses reported having the intention to leave the work in the hospital 32.5%.

Table 3 shows that more than half of the nurses agreed upon all the dimensions of magnetism in their hospitals. The only exception was regarding the dimension of "sufficiency of staffing and resources," which was agreed upon by 41.3% of them. Meanwhile, 76.9% of the nurses agreed upon the dimension of "Relations between nurses and physicians.

Figure 3, demonstrates that nurses agreed upon the magnetism of their hospitals were 55%.

Table 4, points to a statistically significant relation between nurses' gender and their agreement upon magnetism (p=0.01). It is evident that a higher percentage of female nurses agreed upon magnetism compared with male ones. Although the agreement upon magnetism was higher among married nurses and those having urban residence, the differences could not reach statistical significance, p=0.07 and p=0.06 respectively.

Table 5 indicates the presence of statistically significant weak to moderate positive correlations among the scores of various dimensions of magnetism. The only exception was between the dimensions of participation and physicians/nurses relations. Meanwhile, the strongest correlation was between the scores of the dimensions of participation and nursing quality care (r=0.644).

Table 6, in multivariate analysis, the statistically significant independent positive predictors of nurses' score of agreement upon magnetism were the male gender, older age, and urban residence. Conversely, the negative predictors were the higher qualification, and longer experience years, whether total or in the current unit. Meanwhile, neither nurses' absenteeism nor their intention to leave had significant associations with their agreement score upon magnetism.

Discussion:

Magnet hospitals that provide supportive professional practice environments are particularly important to nurses' satisfaction with their work and the quality of patient care provided in hospital settings. Studies demonstrated their positive impact on patient outcomes such as satisfaction and mortality Tei-Tominaga and Sato, [14] Assessing nurses' perception of magnetism is crucial for improvement of nursing care Alghamdi and Urden, [15]. Thus, a better understanding of the magnetism of the nursing practice environment in Egypt facilities can inform the international development of milieus that promote nurses' job satisfaction and retention. Moreover, a recent systematic review concluded that there is a need for more research that can confirm the impact of magnet hospitals

on patient outcomes Petit Dit Dariel and Regnaux,[16]
The aim of this study was to assess magnetism' in nursing practice environment at Fayoum University Hospital. According to the present study findings, with the exception of the nurses' agreement upon the magnetism dimension of "sufficiency of staffing and resources," more than half of them agreed upon all the other dimensions of magnetism in their hospitals. Thus, they generally considered their settings to be mixed a magnet environment as defined in previous research Duffield et al [17]These authors defined a mixed magnet environment as an environment that has achieved scores in features of their 'magnetism' above the mid-point in only two or three dimensions or subscales on the NWI scale.

Identifying the achievement of magnet features is important for hospital management to help in improving the practice environment, which would lead to better staff and patient outcomes. It can help pinpointing the areas of strength to be fostered and those of weakness that may need powerful interventions and changes. Thus, the present study identified the dimension of sufficiency of staffing/resources as the weakest area, which needs more consideration and improvement, while the dimension of the relations between physicians and nurses had the highest agreement. In this respect, Stimpfel et al [18] stressed that a prominent feature of Magnet hospitals, a professional practice environment that is supportive of nursing, plays a role in explaining why Magnet hospitals have better nurse-reported quality of care.

As revealed by the results of the current study, the magnetism dimension of the relations between nurses and physicians was the first in the ranking of the agreement upon the various dimensions. This could be attributed to the fact that a large percentage of the staff nurses who participated in the study are professional nurses with bachelor degree in nursing, or a technical institute diploma. Hence, they should have studied how to communicate effectively with other health care providers, especially physicians. Thus, they may perceive them as colleagues and treat them with trust and respect. On the other hand, the physicians in the setting treat staff nurses in their units as equal peers since they need their assessment, observation and reports of their patients' conditions.

In line with this foregoing present study finding, Getachew et al [19], who studied the nurse-physician work relationships and associated factors in public hospitals in Ethiopia found that approximately two thirds of the respondents had good collaboration or joint practice with physicians, which is very close to the current study figure. On the same line, Barrere and Ellis [20] mentioned that as the knowledge concerning nurse's role increased among physicians, important positive changes took place in the nurses' attitudes toward collaboration. Hence, physician's knowledge about a nurse's role can affect their attitudes toward collaboration.

On the contrary, and in disagreement with the present study results, a study conducted by Hassen, [21] to assess the work empowerment as perceived by nurses and physicians working at the National Heart Institute demonstrated that more than half of the nurses (52.5%) were dissatisfied with the nurse-physician relationships. This was particularly evident regarding the recognition of nurse's role by physicians. This was associated with a high degree of nurses' dissatisfaction with their current job. On the same line, a study conducted in Nigeria by Ogbimi and Adebamowo [22] in

University Teaching Hospitals showed that nurses had a high agreement upon the lack of appreciation of nurse's knowledge by physicians.

According to the present study findings, the magnetism dimension of nurses' participation in hospital affairs came second in the ranking of highest agreement among nurses. It was agreed upon by almost three-fifth of them. This dimension is of great importance in magnetism since it give the nurses a feeling of professionalism, In congruence with this, a study in Lebanon Mouro et al, [23] showed that nurses in hospitals that are on the Journey to Magnet perceive that decision making is shared between nursing management/ administration and staff nurses. Nurses in these hospitals positively attribute their involvement and engagement in every aspect of the nursing profession. This scheme of shared governance promotes professional accountability and enhances individual autonomy, authority, and control. Also in agreement with this present study result, Tourangeau et al [24], in an extensive survey of 13,000 nurses in Canada, identified empowerment in decision-making as a determinant of job satisfaction for nurses..

The magnetism dimension with the third highest rank of agreement among the nurses in the present study was that related to the foundation of nursing for quality care. It was agreed upon by more than half of the participating nurses. Thus, these nurses esteem the quality of the care they provide as professionals despite their dissatisfaction with the resources and staffing in their workplace. This apparent paradox could have more than one explanation. Firstly, the nurses may have the feeling that they provide the best care possible given the scarcity of resources. Secondly, their responses may reflect their individual work, which they consider as high quality. Thirdly, they may be over-reporting to give a better image of themselves as well as their workplace.

This present study result agrees with the findings of a study in Korea, which revealed that nursing foundations for quality care was higher among nurses in Magnet hospitals Choi and Boyle, [25].. On the same line, Ulrich et al [26], in a study in the United States reported that nurses in magnet hospitals rated the quality of care significantly higher than did their counterparts in non-magnet hospitals..

Concerning nurses' agreement upon the magnetism dimension of manager/leadership ability and support, the present study revealed that just one-half of them agreed. This indicates an equivocal attitude towards this issue, with half of them disagreeing with it. Hence, this dimension needs to be improved. The foregoing present study finding may be attributed to the fact that the nurse managers in the hospital are more involved in day-to-day directions, which leaves no time for them to care for their subordinates to provide them with immediate feedback, or positive reinforcement and recognition. The nurses may also feel that the manager is not able to make available to them the resources they need to get the job done. Therefore, they may lack self-confidence and feel unsecure, with negative impacts on their productivity, efficiency and job satisfaction. In congruence with this, Lalleman et al [27], Moreover, Laschinger [28] found that an important magnet hospital characteristic is the higher level of trust in nurses has in their management in a Canadian study.

According to the present study findings, the magnetism dimension of sufficiency of staffing and resources had the lowest percentage of agreement among nurses. This

indicates that this is the area of most concern for the participants in this study. This finding is quite expected given the shortage of work force, facilities, equipment, and supplies, which is often encountered in public hospitals. A similar finding, especially that of lack of staff resources, was reported in previous studies as a significant problem consistently identified as an issue in the retention of nurses Chen and Johantgen, [29]Similarly, Kaitelidou and Kouli [30], in a study assessing the health sector in a time of crisis in Greece found that the lack of resources was a major problem..

The present study identified certain characteristics that had a significant influence on nurses' perception of the magnetism of their practice environment. The bivariate analyses revealed different characteristics for different magnetism dimensions. Thus, the dimension of principles of quality care had more agreement among females, nurse job position, and those with less than five years or ten or more years of experience in the hospital. The effect of experience on the concept of quality could be more evident in the junior nurses with the enthusiasm of relatively new graduates, and the senior ones with longer experience who provide support at work with their acquired competencies.

In congruence with the foregoing, Sherman and Eggenberger [31] stated that nurses feel very comfortable when having a clinical competence from nurses found in their units to support their nursing practice and give them important feedback. On the contrary, working with other nurses who are not clinically competent may lead to job dissatisfaction, with negative impact on quality Lombardo, [32]. Moreover, Safad and Ahmed [33] found that the nurses with over ten years of experience most probably pioneer in their field and are more capable to supervise others, and are more satisfied with magnetism.

The nurses' factor of residence was also influential on their perception of the leadership support dimension of magnetism in the current study. Thus, a higher percentage of the nurses with urban residence agreed upon this dimension. This might be explained by the possibly better communication these nurses have with the supervisors due to closer culture with them. It could also be due to more absence among those with rural residence due to travel. In line with this, Hunt [34] emphasized the importance of communication and value congruence between nurses and their managers or leaders on nurses and patients' outcomes. The current study nurses' agreement upon the magnetism dimension of staffing and resources was only influenced by their absence and intention to leave. Thus, the agreement upon this dimension was lower among those nurses with high absences last year, and those with the intention to leave. This indicates that these nurses do not bother about the shortage of staff or the lack of resources because they are absent most of the time, and plan to leave. Similarly, the influence of absenteeism on the feelings of wellbeing and workload among nurses was shown in a Polish study Kowalczuk and Krajewska-Kułak, [35].

The multivariate analysis of the present study identified the factors that independently influence nurses' perception of the magnetism of their hospital. The factors with positive influence were the male gender, older age, and urban residence. Conversely, the factors having a negative influence were the higher qualification, and longer experience years. As regards age and experience years, they have inverse effects on the perception of magnetism. This paradoxical relation

could be explained by the differences between diploma and bachelor degree nurses, since diploma nurses graduate at much younger age, and thus may have longer experience years compared to the bachelor degree nurses having the same age. Therefore, the bachelor degree nurses, with the higher qualification and relatively younger age, may have a lower perception of the magnetism. This is attributed to their higher expectations of the work environment, compared with the lower qualification and older age ones. Similarly, the influence of nurse experience on the perception of hospital magnetism was shown in a study in the United States Hagedorn Wonder**,** [(36).]

Meanwhile, approximately one-third of the nurses in the current study expressed their intention to leave work percentage, which may be attributed to either personal or workplace factors or both together. In the present study, the intention to leave was higher among male nurses, those unmarried, and those not living with their families. Additionally, a significant relation was shown between this intention to leave and the perception of magnetism. The findings indicate an aspiration to better workplaces among nurses who have a high degree of freedom to move, being male, unmarried, and living alone. However, the relation with male gender is in disagreement with previous studies in the Netherlands Heinen et al, [(37)] and in Italy Romano et al',[(38),] which identified female gender as a predictor for the intention to leave. This difference from the present study might be due to the fact that the entrance of male nurses in this profession is relatively more recent in Egypt compared to these countries.

Conclusion:

In the light of the study findings, the conclusion is that more than a half of the nurses in Fayoum University Hospitals view their workplace as magnet hospital, and approximately one-third have the intention to leave work at this setting. The agreement is highest upon the relations between nurses and physicians, and lowest upon the sufficiency of staffing and resources. The agreement upon magnetism is independently and positively related to male gender, older age, and urban residence; and is negatively related to higher qualification, and longer experience years. The intention to leave is higher among males, unmarried nurses not living with their families. Improvement in work environment is needed to retain these

Recommendations:

Based on the results of the present study, the following recommendations are suggested:

- The study findings should be used to highlight the positive and negative magnet features to establish a profile of magnetism for the facility.
- The low level of agreement upon magnetism among the nurses with higher qualification and longer experience years must be addressed in order to identify the underlying factors and work on them.
- The strategies aimed at staff retention should be more directed to those with higher probability of quitting such as males, and unmarried nurses, and those not living with their families.
- Empowering nurses to have a voice in decision-making, thus encouraging diverse and creative input that will help advance the healthcare mission of the organization is recommended to improve their agreement upon magnetism.
- A better understanding of the Egyptian nursing practice environment can be achieved by conducting an increased number and broader range of studies using the NWI

Table (1): Personal characteristics of the studied nurses (n=160).

	Frequency	Percent
Gender:		
Male	76	47.5
Female	84	52.5-
Age:		
<25	69	43.1
25-	45	28.1
30+	46	28.8
Range	21.0-59.0-	
Mean±SD	27.8±6.9	
Median	25.0	
Marital status:		
Married	97	60.6-
Divorced	1	6.0
Single	61	38.1-
Widow	1	0.6
Nursing qualification:		
Nursing school diploma	15	9.4
Technical institute diploma	127	79.4-
Bachelor	18	11.3-
Living:		
With family	113	70.6-
In hospital	31	19.4
Outside hospitalnnnnnn	16	10.0

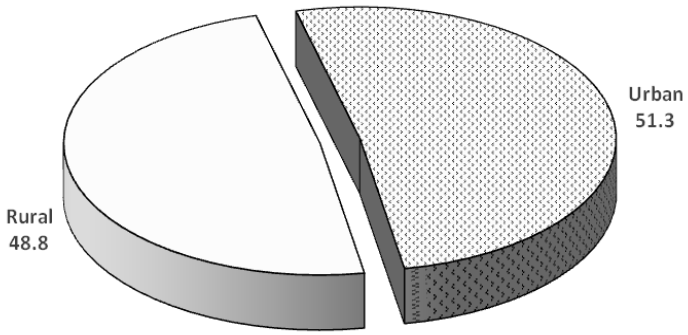

Figure 1: Distribution of the of nurses in the study sample by place of residence (n=160)

Table 2: Job characteristics of nurses in the study sample (n=160)

	Frequency	Percent
Unit:		
Pediatrics	13	8.1
Premature	9	5.6
Critical care	27	-16.9
Surgery	19	11.9
Theater	27	-16.9
Medicine	25	15.6
Hemodialysis	8	5.0
Urosurgery	8	5.0
Obstetrics/Gynecology	7	-4.4
Ophthalmology	8	5.0
Orthopedics	9	5.6
Job:		
Specialist	18	11.3
Technician	120	-75.0
Nurse	22	1 3.8
Experience years (total):		
<5	58	36.3
5-	58	36.3
10+	44	27.5
Range	1.0-40.0-	
Mean±SD	7.8±6.7	
Median	5.0	
Experience years (in hospital):		
<5	79	49.4
5-	46	28.8
10+	35	21.9
Range	1.0-40.0	
Mean±SD	6.2±5.7	
Median	5.0	
Experience years (in unit):		
<5	109	68.1
5-	33	20.6
10+	18	11.3
Range	1.0-35.0-	
Mean±SD	4.2±4.6	
Median	3.0	

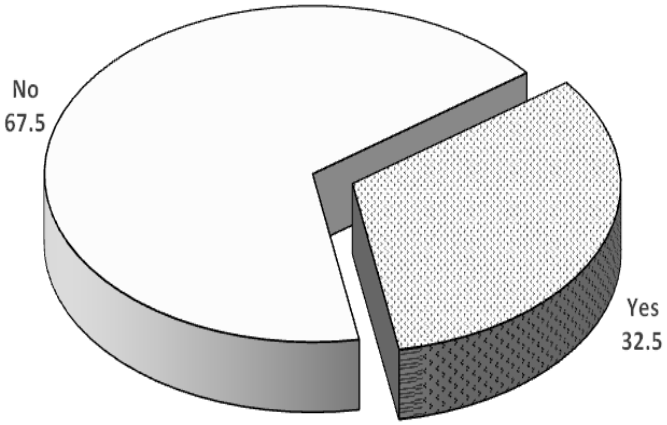

Figure 2: Intention to leave as reported by nurses in the study sample (n=160)

Table 3: Agreement upon magnetism among nurses in the study sample (n=160)

	Frequency	Percent
Nurses' participation in hospital affairs:		
Agree	74	58.8
Disagree	66	41.3
Foundations of nursing for quality care:		
Agree	91	56.9
Disagree	69	43.1
Nurse manager leadership ability and support		
Agree	80	50.0
Disagree	80	50.0
Sufficiency of staffing/resources:		
Agree	66	-41.3
Disagree	94	58.8
Relations between nurses and physicians:		
Agree	123	-76.9
Disagree	37	23.1

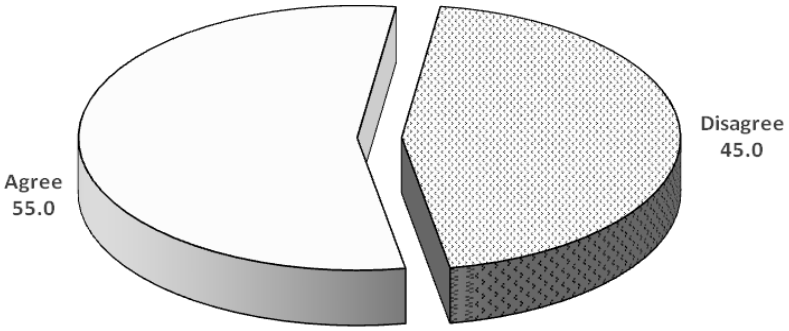

Figure 3: Total agreement upon magnetism among the nurses in the study sample (n=160)

Table 4: Relation between nurses' agreement upon magnetism and their personal characteristics

	Total magnetism				X2 test	p-value
	Agree		Disagree			
	No.	%	No.	%		
Gender:						
Male	34	44.7	42	55.3		
Female	54	64.3	30	35.7	6.16	0.01*
Age:						
<25	39	45.5	30	43.5		
25-	25	55.6	20	44.4	0.22	0.90
30+	24	52.2	22	47.8		
Current marital status:						
Married	59	60.8	38	39.2		
Unmarried	29	46.0	34	54.0	3.38	0.07-
Nursing qualification:						
Diploma	79	55.6	63	44.4		
Bachelor	9	50.0	9	50.0	0.20	0.65
Residence:						
Rural	37	47.4	41	52.6		
Urban	51	62.2	31	37.8	3.52	0.06-
Living:						
With family	63	55.8	50	44.2		
In hospital	14	45.2	17	54.8	2.46	0.29
Outside hospital	11	68.8	5	31.3		
Living with family:						
Yes	63	55.8	50	44.2		
No	25	53.2	22	46.8	0.09	0.77
Have chronic diseases:						
No	83	54.2	70	45.8		
Yes	5	71.4	2	28.6	Fisher	0.46
On regular medication:						
No	75	53.2	66	46.8		
Yes	13	68.4	6	31.6	1.57	0.21

(*) Statistically significant at p<0.05

Table 5: Correlation matrix of magnetism scale dimensions scores

Magnetism dimensions	Magnetism dimensions				
	Spearman's rank correlation coefficient				
	1	2	3	4	5
Participation					
Nursing quality care	.644**				
Leadership support	.418**	.579**			
Staffing/resources	.480**	.475**	.495**		
Physicians/nurses relations	0.12	.229**	.268**	.338**	

(**) Statistically significant at p<0.01

Table 6: Best fitting multiple linear regression model for the magnetism score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Constant	1.63	0.49		3.311	0.001	0.66	2.60
Male gender	0.39	0.10	0.33	4.087	<0.001	0.20	0.58
Qualification	-0.27	0.12	-0.21	2.277	0.024	-0.51	-0.04
Age	0.05	0.02	0.53	2.650	0.009	0.01	0.08
Urban residence	0.18	0.09	0.15	1.980	0.050	0.00	0.36
Total experience	-0.04	0.02	-0.47	2.209	0.029	-0.08	0.00
Unit experience	-0.03	0.01	-0.26	2.385	0.018	-0.06	-0.01

References:

1. Yoder-Wise S.: Leading and Managing in nursing (6thed), ch.Texas Teach University Science Center Lubboch, Texas: Mosby, an imprint of Elsevier inc 2015, p. 364.
2. Kaplow R., and Reed K.D.: The AACN synergy model for patient care: A nursing model as a force of magnetism. Nursing Economics 2008.; 26(1):17-25.
3. Shortell S.M., and Kaluzny A.D.: Health care management: organization design and behavior. 5th ed. Clifton Park, NY: Thomson Delmar Learning2006; .
4. Solomons N.M., and Spross J.A.: Evidence-based practice barriers and facilitators from a continuous quality improvement perspective: an integrative review. Journal of Nursing Management 2011; 19(1): 109–120
5. Ausserhoffer et al.: Prevalence, patterns and predictors of nursing care left undone In European hospitals: results from the multicountry cross-sectional RN4CAST study. BMJ Quality and Safety 2014;3:126-135 http://www. ncbi.nlm.nih. gov/ pubmed /24214796.
6. Heinen et al,: Effect of Conscientiousness and Professional Work Autonomy on Nurse Organizational Commitment (Affective and continuance) and Intent to Stay Unpublished Master Thesis Quean`s University. Canada.2013.
7. Menard K.I.: Collegiality: Through the eyes of a staff nurse. Western Journal of Nursing Research,2013, 35, 1232.doi: 10.1177/0193945913487168 Philosophy in Nursing at the University of Wisconsin-Milwaukee May 2014 thesis.
8. Farag, M.. Economic analysis of the nurse shortage in Egypt. Dubai School of Government Working Paper.2008; 08-06
9. Kish and Leslie: Survey Sampling. New York: John Wiley and Sons1965
10. Lake E.: "Development of the Practice Environment Scale of the Nursing Work Index." Research in Nursing & Health; 2002; 25(3): 176-188.
11. Warshawsky N.E., and Havens D.S.: Global Use of the Practice Environment Scale of the Nursing Work Index. Creating Healthy Work Environments Conference Sigma Theta Tau International. Indianapolis2013.
12. Lake E.T., and Friese C.R.Variations in Nursing practice environment; Relation to staffing and hospital characteristics. Journal of Nursing Research; 2006; 55(1): 1-9.
13. Behling O., and Law K.: In: Translating questionnaires and other research instruments: Problems and Solutions. Lewis-2000
14. Tei-Tominaga M., and Sato F. 2016: Effect of nurses' work environment on patient satisfaction: A cross-sectional study of four hospitals in Japan. Jpn J Nurs Sci.;13(1):105-13. doi: 10.1111/jjns.12091. Epub 2015 Jun 29.
15. 1 Alghamdi M.G., and Urden L.D.: Transforming the nursing profession in Saudi Arabia. J Nurs Manag.2016.;24(1):E95-E100. doi: 10.1111/jonm.12301. Epub 2015 Mar 24.
16. Petit Dit Dariel O., Regnaux J.P.: Do Magnet®-accredited hospitals show improvements in nurse and patient outcomes compared to non-Magnet hospitals: a systematic review. JBI Database System Rev Implement Rep. 2015;13(6):168-219. doi: 10.11124/jbisrir-2015-2262.
17. Duffield C.M., Diers D.K., O'Brien-Pallas L.L, Aisbett C., and Aisbett K.: 'Nursing staffing, nursing workload, the work environment and patient outcomes' Applied Nursing Research. 2011; 24(4): 244-255.
18. Stimpfel A.W., Rosen J.E., McHugh M.D.: Understanding the Role of the Professional Practice Environment on Quality of Care in Magnet® and Non-Magnet Hospitals. J Nurs Adm2015.;45(10 Suppl):S52-8. doi:

2014 10.1097/NNA.0000000000000253

19. Getachew G.T., Birhan T.W.H., Gerezgiher B., and Haftu B.: Nurse - Physician Work Relationships and Associated Factors in Public Hospitals in Tigray Region, Northern Ethiopia Greener. Journal of Biomedical and Health Science;2014 1(1): 001-013.
20. Barrere C., and Ellis P.: Changing attitudes among nurses and physicians: a step towards collaboration Health Qual.2002.; 24(3):9-
21. Hassen F.H.: "Work Empowerment as Perceived by Nurses and Physicians Working at National Heart Institute" Ain Shams University, 2002; pp. 9-27.
22. Ogbimi & Adebamowo.: Questionnaire survey of workingrelationships between nurses and doctors in University teaching hospitals in southern Nigeria BMC Nursing; 2006; 5(2): 1-6
23. Mouro G., Tashjian H., Bachir R., Al-Ruzzeih M., Hess R.: Comparing nurses' perceptions of governance related to hospitals' journeys to excellence status the Middle East. Nurs Econ.2013.;31(4):184-9.
24. Tourangeau A.E., Doran D.M., Hall L.M., Pallas L.O., Pringle D., Tu J.V., and Cranley L.A.: Impact of hospital nursing care on 30-day mortality for acute medi-cal patients. Journal of Advanced Nursing; 2006; 57: 32-44.http://dx.doi.org/10.1111/j.1365-2648.2006.04084.x
25. Choi J., and Boyle D.K. Differences in nursing practice environment among US acute care unit types: a descriptive study. Int J Nurs Stud2014:.;51(11):1441-9. doi: 10.1016/j.ijnurstu. 2014.03.001. Epub 2014 Mar 12.
26. Ulrich B.T., Buerhaus P.I., Donelan K., Norman L., Dittus R.: Magnet status and registered nurse views of the work environment and nursing as a career. J Nurs Adm.2007;37:212-220.
27. Lalleman P.C., Smid G.A., Lagerwey M.D., Oldenhof L., and Schuurmans M.J.: Nurse Middle Managers' Dispositions of Habitus: A Bourdieusian Analysis of Supporting Role Behaviors in Dutch and American Hospitals. ANS Adv Nurs Sci . 2015;38(3):E1-E16. doi: 10.1097/ANS.0000000000000083.
28. Laschinger H. 2012: Scoring of empowerment scales [online]. Available at: http://www.uwo.ca/fhs/nursing/laschinger/ scoring.html [accessed 23-7-2012].
29. Chen Y.M., and Johantgen M.E.: 'Magnet hospital attributes in European hospitals:a multilevel model of job satisfaction', International Journal Nursing Studies. 2010;47(8): 1001-1012.
30. Kaitelidou D., and Kouli E.: Greece: The health sector in a time of crisis. Euro health. 2012 ; 18:12-14.
31. Sherman R., and Eggenberger T.: Taking charge: What every charge nurse needs to know. Nurses First; 2009; 2(4), 6-10.
32. Lombardo B. Compassion Fatigue: A Nurse's primer. Journal of Issues in Nursing; 2011;16(1).
33. Safadi E.G., and Ahmed M.Z. : Decisional involvement among Nurses: Governmental versus Private Hospitals. Journal of Health Science; 2013;7(1): 18-27.
34. Hunt D.: Does value congruence between nurses and supervisors effect job satisfaction and turnover? J Nurs Manag. Jul; 2014;22(5):572-82. doi: 10.1111/jonm.12055. Epub 2013 Jul 5.
35. Kowalczuk K., and Krajewska-Kułak E.: Influence of selected sociodemographic factors on psychosocial workload of nurses and association of this burden with absenteeism at work. Med Pr. 2015;66(5):615-24. doi: 10.13075/mp.5893.00076.
36. Hagedorn Wonder A. : Engagement in RNs working in Magnet®-designated hospitals: exploring the significance of work experience. J Nurs

Adm;2012.;42(12):575-9. doi: 10.1097/NNA.0b013e318274b5a8.

37. Heinen M.M., van Achterberg T., Schwendimann R., Zander B., Matthews A., Kózka M., Ensio A., Sjetne I.S., Moreno Casbas T., Ball J., and Schoonhoven L.: Nurses' intention to leave their profession: a cross sectional observational study in 10 European countries. Int J Nurs Stud. 2013;50(2):174-84. doi: 10.1016/j.ijnurstu.2012.09.019. Epub 2012 Oct 27.
38. Romano M., Festini F., Bronner L.:Cross-sectional study on the determinants of work stress for nurses and intention of leaving the profession]. Prof Inferm.; 68(4):203-10. doi: 10.7429/pi.2015.684203.