The Relation between Work Environment and Professional Identity among Staff Nurses in National and International Hospitals: A Comparative Study

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Abstract

Background: Positive work environment help nurses to enhance their professional knowledge and competencies that in turn resulting in improvement of nurses' professional identity. **Aim:** Assessing the relation between work environment and professional identity among staff nurses in national and international hospitals. **Design:** A descriptive comparative study design was used for conducting current study. **Setting:** This study was conducted at Beni-Suef university hospital as an example of national hospitals and Saudi-German hospital as an example of international hospitals. **Sample:** A simple random sample of 460 nurses was used. **Tools:** Two data collection tools were used namely; a) Self-administered work environment questionnaire and b) The MacLeod Clark Professional Identity Scale. **Results:** Mean score of professional identity and work environment at Saudi German hospital (36.17 &135.79) is significantly higher than the mean score at Beni-Suef University hospital (31.23 &121.41) with p-value >0. 001. **Conclusion:** The work environment had a positive effect on nurses' professional identity at Beni-Suef University Hospital and Saudi-German Hospital. Moreover, work environment identified as a positive predictor of nurses' professional identity. **Recommendations:** Conduct workshops about how to create a positive work environment to enhance nurses' professional identity and engage nurses in decision-making especially regarding aspects that affect their practice as structure, system and instructions in health care organizations.

Keywords: Professional Identity, Staff Nurses & Work Environment.

Introduction

Human resources are the most valuable and, in many settings, undervalued asset of any organization. Work environment can be attractive or not attractive to work forces based on quality and amenability of work environment. Supportive and well-organized work environment play a significant role in attracting and retaining nursing personnel and helping nurses to perform effectively, making best use of knowledge, skills, and available resources **(Suleiman, et al., 2022).**

Work environment combined of the interplay between organization attributes and personal attributes as perceived by environment members. Environment concept is more broad than the performance of a single unit or single individual, and doesn't restricted to relations between few members, organization concept concerned with the social systems of total organization **(Raziqa & Maulabakhsha, 2015)**.

People and technology of various organizations are essentially not the same, and for this reason organizations have, different organizational characteristics that is essentially called, "Work environment". Work environment is concerned with the perception, i.e., what nurses recognize about their work unit or organization culture that institutionalized and formalized **(Putra, et al., 2020).**

Work environment considered one of the key factors that affect nurses' professional identity.

Nurses acquire learning from their work experiences. Nurses learn about nursing and about themselves and working as a nurse through interaction with other professionals, moreover, interaction with other nurses may contribute to their personal growth and self-concept **(Hoeve, et al., 2014).**

Professional identity is formed and maintained through social interactions therefor; work environment plays a significant role in professional identity construction and development which in turn reflected on quality of professionals' performance and patient care outcomes. professional identity considered as an important cognitive feature that affects nurses' work settings attitudes and behaviours. Nurses can form their work identities either social or role-based from their profession aspects or from their organization **(Janke, et al., 2021).**

Professional identity is a crucial nurses' practice concept and behaviour; professional identity forms a foundation for nursing to become a profession. Strong and indisputable professional identity affect with a crucial percent in maximizing provision of high-level care to improve patient health care related outcomes, and promote working retention rate. Professional identity is very important in enhancing awareness of nursing and enhancing the quality of the provided care **(Mahgoub, et al., 2022).**

International health nurses are committed to care for all persons across the life cycle; pregnant women, infants, children, adolescents, adults, and the elderly and especially vulnerable groups; the poor, refugees and displaced persons, street children, and the homeless. Nurses represent a powerful force for bringing about the necessary changes to meet the needs of health. Their contribution to health services covers the whole spectrum of health care, promotion and prevention, as well as health research, planning, implementation, and innovation **(Zhang, et al, 2021)**

Significance of the study
Work environment is the result of interactions between nurses and their organization without ignoring the role of any part form the environment. Healthy work environment has crucial role in enhancing nurses' knowledge and experiences and consequently affecting their professional identity through collaboration of health care providers and exchanging knowledge and experiences and empowering that leads to improvement of professional identity **(Suleiman, et al., (2022).**

Nurses who have a strong professional identity deliver effective service and high quality patient care in the healthcare team, develop competency in clinical expertise, and contribute to patient satisfaction. In addition, a positively developed professional identity, contributes to increases in personal satisfaction, and decreases in burnout levels and resignations. Healthy work environments, job satisfaction, and intent to stay were positively correlated, whereas a stressful work environment negatively impacts job satisfaction **(Al-Hamdan et al., 2017).**

Nurses acquire their professional identity from work acquired experiences and interaction with colleagues. Negative work environment make nurses frustrated and may affect their attitude when dealing with co-workers as well as decrease the acquired knowledge and experiences **(Putra, et al., 2020).** So, the current study purpose was to assess the relation between work environment and professional identity among staff nurses in national and international hospitals.

Aim of the study:
The current study aimed to assess the relation between work environment and professional identity among staff nurses in national and international hospitals.

Research Questions
1. What is the difference between international hospital and national hospital regarding work environment?
2. What is the difference between international hospital and national hospital regarding professional identity?
3. What is the relationship between work environment and professional identity among staff nurses in national and international hospitals?

Subject and Method
Technical Design: This design involved research design, settings, subjects of the study, and tools of data collection.

Research design: A descriptive comparative study design was used for conducting the study.

Study setting
The study was performed at Saudi-German hospital as an example of international hospitals and hospital affiliated to Beni-Suef University as an example of national hospitals; **Beni-Suef University Hospital (BSU):** The hospital capacity is 432 beds. The hospital has eighty primary departments that each offers a variety of services. The hospital is situated in a structure with six floors. The emergency department, hemodialysis unit, surgical intensive care unit, laundry room, kitchen, and sterilization unit are all located in the first floor. The second floor includes the oncology unit, radiology, orthopaedic unit, and laboratory department in addition to outpatient clinics. The third floor includes general intensive care unit, and the operation room that divided into general and specific operation rooms. The fourth floor includes surgical departments and a physician resting rooms. The fifth floor includes cardiac department, medical departments, and paediatric department. The sixth floor includes obstetric department, ear, nose and throat unit (E.N.T) and an endemic unit.

Saudi German Hospital (SGH): it is one of the largest healthcare service providers in the Middle East & North Africa region (MENA). The Saudi German Hospitals Group is a multi-functional healthcare developer that builds its own hospitals and establishes partnerships with numerous international institutions. SGH has a capacity of 300 beds and include 27 Departments such as orthopedic surgery, traumatology, cardiothoracic surgery, pediatric department, intensive care units … etc.

Study subjects
A simple random sample of (460) nurses out of (1250) nurses who are working at the previously mentioned study settings was used to achieve the aim of the study. (195) nurses out of (400) nurses working at Saudi-German Hospital and (265) nurses out of (850) nurses working at Beni-Suef University Hospital.

Sample size
Sample size was calculated using **Steven and Thompson (2012)** equation to calculate the sample size from the following formula

$$n = \frac{Np(1-p)}{(N-1)(d^2/z^2) + p(1-p)}$$

N= Population
Z= confidence level 95% (1.96)
P= probability (50%)
d= margin of error (0.05)

Data Collection Tools:
Data for this study was collected using two tools; Self-administered work environment questionnaire and The MacLeod Clark Professional Identity Scale (MCPIS-9).

Tool I: Self-administered work environment questionnaire: This questionnaire was developed by the researchers based on **AL-Meshwet, (2011) & Mahgoub, et al., (2019).** It consisted of two parts:

Part one: Nurses' socio-demographic characteristics: This part aimed to collect data about socio-demographic characteristics of study subjects including: gender, age, material status, experience, and department name.

Part two: Work environment questionnaire that composed of 35 items under 7 dimensions; systems & instructions, organizational structure, incentives & rewards, technology, participation in decision-making, training, and working conditions, each of them consisted of five items

Scoring system: Nurses' responses were measured and graded based on a 5-point Likert scale. Where 1 stands for "strongly disagree" and 5 stands for "strongly agree". Scores of items were summed-up and the total divided by the number of the items, giving a mean score of the part, the work environment was considered positive if the percent score was 60% or more and considered negative if the score percent was less than 60%.

Tool II: The MacLeod Clark Professional Identity Scale: This scale was developed by the researchers based on **Adams, Hean, Sturgis, & Clark, (2006)** to assess nurses' professional identity. It consists of nine items regarding professional identity

Scoring system: Professional identity scale is a single construct questionnaire with nine items measured on a 5-point Likert scale. Where 1 stands for "strongly disagree" and 5 stands for "strongly agree". Scores of items were summed-up and the total divided by the number of the items, giving a mean score of the part, the professional identity was considered high if the percent score was 60% or more and the professional identity was considered low if the score percent was less than 60%.

Validity and Reliability:
Face validity was examined by five experts in nursing administration specialty from different nursing faculties in Egypt. These included one professor from Ain Shams University, two assistant professors from Beni-Suef University, and two assistant professors from El-Minia University. According to experts' opinions, all recommended modifications were done. The study tools were tested for their reliability using Cronbach's alpha, and it was 0.903 for the Work environment questionnaire and 0.841 for the MacLeod Clark professional identity scale

Operational Design: The operational design consisted of three phases: preparatory phase, pilot study and field work.

Preparatory phase: The researcher reviewed related literature of the previous and current acquainted with the subject. Also, knowledge aspects of the study using books, articles. Magazines and internet beside national and international related literature to modify tools for data collection.

Pilot study:
Pilot study was conducted on 46 nurses representing 10% of the study sample before starting data collection. A pilot study was conducted for testing the clarity of questionnaire sheets and its relevance to the study. It also helped to estimate the time needed to complete the data collection forms. It took around 10-15 minutes to fill in the questionnaire. Pilot study respondents were included in the study sample because no modification was done.

Field work: After obtaining the official approval for conducting the study, the researcher met the nurses and introduced himself to them and clarify the aim of the study and its implication, the researcher distributed the study tools to the participants and asked them to fill the study tools, the researcher collected data throughout the week at different day times. confidentiality of the obtained information was ensured. Data collection were conducted from the beginning of January 2023 to the end of April 2023.

Ethical considerations:
Prior to the research study actual work, ethical approval was obtained from the Scientific Research Ethical Committee of the Faculty of Medicine at Beni-Suef University. Also, written approval was taken from both Saudi-German hospital as an example of international hospitals and hospital affiliated to Beni-Suef University as an example of national hospitals. The study subjects has the right to withdraw at any time without rational and the collected data will be kept confidential.

Administrative Design:
Before starting on the study, official letters were issued from both Saudi-German hospital as an example of international hospitals and hospital affiliated to Beni-Suef University as an example of national hospitals to facilitate data collection. Individual written consent was obtained from each participant in the study.

Statistical Design:
Data were verified prior to entry into the computer. The Statistical Package for Social Sciences (SPSS) created by IBM, Illinois, Chicago, USA (SPSS version 25.0) was used, followed by data analysis and tabulation. For numerical values, frequency, mean score, and standard deviations were used. Best fitting multiple linear regression model was used to determine the predictors of the study variables. The level of significant was adopted at $p < 0.05$ and a highly significant level value was considered when $p \leq 0.001$.

Results

**Table (1): Sociodemographic characteristics of nurses in the study sample (N=460)**

Sociodemographic Characteristics		Hospital			
		BSU (265)		SGH (195)	
		NO	%	NO	%
Age	>30	189	71.4	117	60.0
	30+	76	28.6	78	40.0
Mean ± SD		27.50	± 3.860	30.01	± 5.960
Marital status	Married	176	66.4	104	53.3
	Un-Married	89	33.6	91	46.7
Years of experience in nursing: -	<5	89	33.6	78	40.0
	5-	116	43.8	74	37.9
	10-	42	15.8	25	12.8
	15+	18	6.8	18	9.2
Nursing qualification	Technical	76	28.7	32	16.4
	Bachelor	131	49.4	152	77.9
	Master	50	18.9	10	5.1
	PHD	8	3.0	1	0.5
Gender	Male	109	41.1	81	41.5
	Female	156	58.9	114	58.5
Department	Intensive care	57	21.5	38	19.5
	Cardiac Unit	49	18.5	27	13.8
	Haemodialysis	25	9.4	20	10.3
	Operation unit	25	9.4	9	4.6
	Emergency	33	12.6	45	23.1
	Floor	42	15.8	31	15.9
	Paediatrics	17	6.4	19	9.7
	Obstetrics	17	6.4	6	3.1

Table (2): Nurses' work environment dimensions in the two study hospitals (n=460)

Work Environment Dimensions	BSU (265)	SGH (265)	F	p- value
	Mean ± SD	Mean ± SD		
Organizational structure	17.25 2.783	19.90 3.048	3.704	0.000**
Systems and instructions	17.03 3.198	18.95 2.943	.310	0.000**
Training	17.37 3.150	20.86 2.914	6.390	0.000**
Participation in decision-making	17.28 2.317	19.14 2.800	2.599	0.000**
Incentives and Rewards	17.17 3.662	17.08 4.035	7.543	0.787
Technology	17.81 2.679	20.17 2.989	3.178	0.000**
Working conditions	17.49 3.059	19.68 3.011	2.116	0.000**

Table (3): Staff nurses' Work Environment and professional identity in the two study hospitals (n=460)

Variables	BSU (265)	SGH (265)	F	p- value
	Mean ± SD	Mean ± SD		
Work Environment	121.41 15.959	135.79 16.199	3.634	0.000**
Professional Identity	31.23 5.329	36.17 5.048	1.663	0.000**

r= 0.501   p>0.001
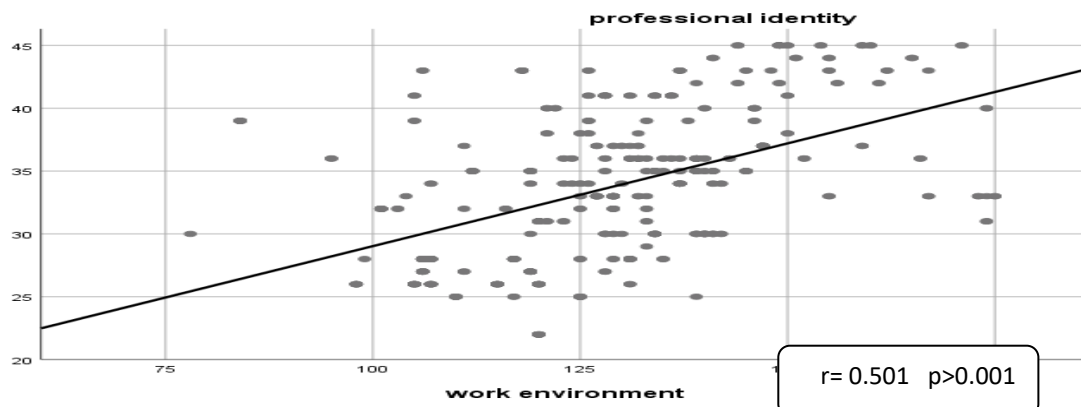
Figure (1): Correlation between work environment and professional identity

Table (4): Correlation matrix of nurses' score of study variables

Pearson correlation coefficient									
	1.Professional Identity	2. Organizational Structure	3. Systems and Instructions	4. Training	5. Incentives	6. Participation in Decision-Making	7. Technology	8. Working Conditions	9. Work Environment
1.Professional Identity									
2. Organizational Structure	.218**								
3. Systems and Instructions	.353**	.217**							
4. Training	.005	.113**	.316**						
5. Incentives	.111*	.078	.147**	.201**					
6. Participation in Decision-Making	.056	.219**	.269**	.436**	.136**				
7. Technology	-.082-	.219**	.137**	.436**	.214**	.119**			
8. Working Conditions	.051	.188**	.247**	.292**	.199**	.140**	.339**		
9. Work Environment	.501*	.036	.387**	.437**	.279**	.203**	.513**	.648**	

(*) *Statistically significant at p<0.05*   (**) *Statistically significant at p<0.01*

Table (5): Best fitting multiple linear regression model for nurses' work environment score.

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-VALUE
	B	Std. Error	Beta		
(Constant)	84.368	6.411		13.160	.000
Hospital name	8.233	1.518	.234	5.425	.000
Department name	-.956-	.297	-.122-	-3.214-	.001
Gender	-3.943-	1.311	-.110-	-3.007-	.003
Professional identity score	1.334	.125	.435	10.667	.000

R-square=0.35   Model ANOVA: F=34.5, p<0.001
Variables entered and excluded: Nursing qualification, Marital status, Age and Years of experience in nursing.

Table (6): Best fitting multiple linear regression model for nurses' professional identity score.

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-VALUE
	B	Std. Error	Beta		
(Constant)	8.488	2.324		3.652	.000
work environment	.135	.013	.413	10.667	.000
Hospital	3.134	.476	.273	6.578	.000
Department	.249	.095	.097	2.621	.009
Marital status	-1.405-	.440	-.120-	-3.190-	.002
Years of experience in nursing	1.087	.322	.172	3.371	.001

R-square=0.35   Model ANOVA: F=34.5, p<0.001
Variables entered and excluded: Nursing qualification, Marital status, Age and Years of experience in nursing.

Table (1): Clarifies the nurses' distribution regarding their demographic characteristics. The data illustrates that mean age of nurses at Beni-Suef University hospital is 27.5 while mean age of nurses at Saudi German hospital is 30.01. More than half of nurses at BSU and SGH their ages less than 30 years (71.4 & 60.0%, respectively). More than half of nurses at BSU and SGH are married (66.4 & 53.2% respectively) and more than half of nurses at BSU and SGH are female (58.9 & 58.5%, respectively). Less than half nurses at BSU had bachelor degree and have from five to less than ten years of experience (49.4 & 43.8%, respectively).

While three quarters of nurses at SGH have bachelor degree (77.7%). The largest percentage of nurses are working in intensive care units at BSU and in emergency unit at SGH (21.5 & 23.0%, respectively).

Table (2): Shows that, mean scores of the work environment dimensions at Saudi German hospital is significantly higher than the mean scores at Beni-Suef University hospital (p<0.001) regarding all work environment dimensions except incentives and rewards dimension.

Table (3): Illustrates that, the mean score of the total work environment and professional identity in

the Saudi German hospital is significantly higher than the mean at Beni-Suef University hospital (p<0.001).

Figure 1: Indicates there is a statistically significant moderate positive correlation between nurses' work environment scores and professional identity scores (r=0.501).

Table (4): Illustrates that, presence of weak to strong statistically significant positive correlations between different study variables. The strongest correlation was between work environment and working conditions (r=0.648), while the weakest correlation was between incentives and professional identity (r=0.111).

Table (5): Illustrates that, the independent statistically significant positive predictor of nurses' work environment score were hospital name and professional identity score. While, the negative predictors were department and gender. The model explains 35% of the change in nurses' work environment scores.

Table (6): Illustrates that, the statistically significant independent positive predictors of nurses' professional identity score were hospital name, department, experience, and work environment score. While, the negative predictor was marital status. The model explains 38% of the change in nurses' professional identity scores.

Discussion

Work environment plays a vital role in nurses' professional identity formation and development. Positive work environment not just can lessen nurse' intentions to leave profession but help nurse to enhance their professional knowledge and competencies that in turn resulting in improvement of nurses' professional identity. Human capital is regarded as the most valuable and unique asset and the costliest investment of organizations. Knowing how to gain and retain talent nurses is an important aspect for the success and sustainability of healthcare organizations **(Wang, et al., 2020).** Therefore, current study aimed to assess levels of work environment and comparing effect of national and international hospitals work environment on nurses' professional identity.

The current study findings revealed that the total mean score of work environment dimensions at Saudi German Hospital is significantly higher than the mean at Beni-Suef University Hospital as p-value less than 0.001 regarding all work environment dimensions except incentives and rewards dimension. Also, current study results illustrated that total mean score of work environment and professional identity in the Saudi German Hospital is significantly higher than the mean at Beni-Suef University Hospital as p-value less than 0.001. From the researcher point of view, this result may be due to the availability of sufficient facilities and good work condition at

Saudi German Hospital that affect nurses' professional identity, also, this result could be explained that clarity of system and instruction beside presence of clear procedures in international hospital resulted in nurses' enhancement of their professional identity and perceiving work environment positively than national hospital.

In same line, this study is congruent with the study conducted by **Ambani, et al., (2020),** who indicated that the nursing clinical practice environment were better in military hospital as compared with public hospital.

Moreover, the study findings supported by a study conducted by **Aiken, et al., (2011)** who concluded that poor work environments at hospital are common in public hospitals and are correlated to negative outcomes for nurses and quality of care. Enhancing work environments improves nurses' retention and lead to better quality of patient care. Findings of the current study isn't consistent with results of a study conducted by **Mao et al., (2021)** who indicated that the nurses in public hospitals enjoy higher professional identity than those in private hospitals

Current study findings indicated that there is a moderate positive statistically significant correlation between nurses' work environment core and their professional identity (r=0.501). From the researcher point of view, this result may be due to work environment considered one of the main factors affecting nurses' professional identity formation and development as identified in previous studies and our study emphasized this conclusion.

Previous studies have recommended that the practice work environment is associated positively with the professional identity of nurses **(Gao et al., 2022).** This result is congruent with the study done by **Hoeve, et al., (2014)** who concluded that, nurses acquire their professional identity and self-concept from their work environment, education, work values, and traditional cultural and social values.

In the same line, **Rasmussen, et al., (2018)** revealed that, factor influencing registered nurses' conception of their professional identity were categorized into three categories: the role, the self, and the context. The role in practice, the self is the nurse who enacts, and the context is the practice setting.

Moreover, current study finding is supported by **Xia, et al., (2023)** who stated that practice environment and self-identity are vital factors that influencing professional identity among nurses. On the other hand, this study is incongruent with the study conducted by **Zhang, et al., (2021)** who stated that location of the university was not statistically related to professional identity scores

Current study findings indicated that, statistically significant independent positive predictor of nurses' work environment score were the hospital

name and professional identity score. While, the negative predictors were the department name and gender. Moreover, current study findings illustrated that, statistically significant independent positive predictors of nurses' professional identity score were their hospital name, department name, experience and work environment score. While, the negative predictor was Marital status.

From the researcher point of view, this result may be due to the advancement of nurses in their career and increased experience their professional identity improved beside practicing in a hospital with a positive clinical environment improved sense of belonging to nursing profession.

In the same line, this result is in agreement with the study conducted by **Xie, et al., (2021)** who concluded that, the male nurses scores were lower than the female nurses. There were significant effects of organization category and residence on nurses' professional identity. This finding is congruent with the study conducted by **(Meng, 2018)** who reported the same results.

Moreover, current study findings is supported by **Mao, et al., (2021)** who concluded that, the nature of hospitals and employment was also found to influence the nursing professional identity. Similarly, the present study finding is agreed with the study conducted **by Smeds Alenius, (2018)** who concluded that, work environment structural factors such as geographical location, size, and teaching status, had relatively little influence on nurses' evaluation of their work environment.

On the other hand, current study finding contradicted by **Mahgoub, et al., (2019)** who revealed that work environment positive predictors were age and experience while the negative predictor was nurses' qualification. Also, the current study finding contradicted with **Oswald, (2012)** who concluded that, there was no significant correlation between work environment and nurses' education.

Conclusion

The study findings indicated that the work environment had a positive effect on nurses' professional identity at Beni-Suef University Hospital and Saudi German Hospital. Moreover, the study findings revealed that work environment identified as a positive predictor of professional identity. Moreover, mean score of work environment and professional identity was higher among nurses working at Saudi German Hospital than nurses working at Beni-Suef University Hospital.

Recommendations

According to the results of the present study, the researcher suggested the following recommendations:

1. Conduct workshops about how to create a positive work environment to enhance nurses' professional identity.
2. Engage nurses in decision-making especially regarding aspects that affect their practice as structure, system and instructions in health care organizations.
3. Further studies need should be conducted on larger and different study settings to generalize the study findings.

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