The Impact Of Hospital Work Environment On Nurses' Performance In Critical Care Setting

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Abstract

Background: *The work environment is considered an important factor for the success of any healthcare organization that keeps upstanding and can compete with others to achieve the organization and employee's goals. The context of healthcare delivery is rapidly changing. Such, care delivery is affected by the complexity of diseases, and technological development, all of which increase demands for high quality of care worldwide. So the nurses' work environment is getting global interest because there is a growing consensus that identifying opportunities for improving working conditions in hospitals.* ***The study aims:*** *To assess the relationship between hospital work environments on nurses' performance in critical care setting.* ***Methods:*** *A descriptive correlational design was co¹nducted at Hospital in Jeddah, KSA. Nurses worked on critical care units (95 nurses).Tools of data collection: Two tools, the first tool was nurses' work environment tool and the second tool was observational nursing performance.* ***Results:*** *These findings revealed that the majority of nurses had bad work as well as unsatisfactory performance.* ***Conclusion:*** *There were positive correlation between nurse's work environment and their performance (p= 0.002**)* ***Recommendations:*** *Enhance a supportive work environment by the nurse manager as effective way to increase nurses' psychological bonding and enhancing positive work-related outcomes that may, in turn, enhance their performance.*

Keywords: *Critical Care Setting, Hospital Work Environment, and Nurses' Performance.*

Introduction

Nowadays, the healthcare system is considered an uncertain area full of challenges and difficulties that require more attention and continuous development of plans and policies. These measures are necessary to cope with and survive in this dynamic environment and to keep pace with technological advances. The goal is to achieve high productivity and positive outcomes [1]. The work environment plays a crucial role in the success of any

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healthcare organization. It needs to be conducive and competitive to enable the organization to meet its goals and determine employees' productivity and outcomes [1, 2]. Moreover, it significantly impacts patients, affecting their safety, the quality of care they receive, and their overall outcomes [3]. However, the impact depends on the perception and type of work environment implemented, which affects patients, nurses, and the healthcare organization [2].

The work environment can be defined as the internal setting of an organization where employees carry out their work and interact with one another and with the organization [4]. For nurses, the work environment encompasses the organizational characteristics of the workplace that either enable or hinder professional nursing practice. This includes aspects such as the quality of care provided, nurses' involvement in hospital policies, adequacy of staffing and resources, and the nature of nurse–physician relationships [5]. There are two types of work environments: collaborative and toxic. Collaborative work environments are characterized by friendliness, mutual support, empathy, and a sense of shared purpose with others [6]. On the other hand, toxic work environments are marked by negative behaviors, such as disrespect, poor leadership, threats, harassment, incivility, and bullying [7].

Toxic work environments not only contribute to physical and mental distress among employees, leading to negative psychological effects and increased stress levels, but also impact employee performance and productivity, ultimately leading to intentions to leave the organization [2, 8]. The work environment has a significant impact on employees' outcomes, whether positive or negative [1]. In the healthcare system, a positive work environment is crucial as it provides optimal working conditions for employees, leading to improved performance, job satisfaction, and innovation [9]. A safe and high-quality care environment contributes to better patient outcomes and reduced mortality rates [3, 10]. Liu et al. (2021) [11] have also emphasized the importance of supporting and enhancing the work environment to improve outcomes and promote quality care [11].

Creating a healthy work environment based on commitment, interpersonal relationships, and the application of work environment principles increases nurse satisfaction, performance, and the overall quality of care [12]. Intensive care settings provide lifesaving care for the critically ill patients; however, it is associated with significant risks for adverse events and serious errors with multiple interactions occurring between health multidisciplinary health care providers, patients, and medical devices with increasingly complex interface [13].

Moreover nurses play a major role in the delivery of critical care in critical care units (CCUs), where the care they provide is more complex and challenging than that provided in other hospital departments [14]. The CCU nurses are frequently subjected to high demands to fulfill the duties assigned to them. Working in a field that involves complex multitasking, high workloads, and providing specialized care to critically ill and reliant patients can be overwhelming for nurses, especially during the coronavirus disease (COVID-19) pandemic [15].

Work environment is generally defined as "the physical, chemical, biological, organizational, social, and cultural factors that surround a worker" [16]. Also the nurses" work environment is defined as the characteristics of a practice setting that facilitate or constrain professional nursing practice and has been linked to patient outcomes. Nurses" work environment plays a key role in the quality and quantity of the care that they can provide as well as in workforce retention. The Study shows that the work environment is related to nurses" intent to leave. When nurses perceived better working conditions, the intent to leave the job decreased and their work engagement increased [17].

Nursing performance can be an evaluation indicator of hospitals. Therefore, improving it positively affects the development of nurses, patients, guardians, hospitals, and society [17]. Nursing job performance is defined as providing nursing care to the patient

based on the nurses' professionalism and all other related activities and processes. By improving nursing job performance, nurses can cope with changes in the medical environment and the patient's needs according to the times by applying their skills and knowledge. Research to improve nursing job performance has proceeded locally and globally, and grit is attracting attention as an important concept that can successfully enhance nursing job performance [18]. Moreover, high nurses' performance leads to patients' safety, and low nurses' performance could result in patients' death. Then, improving nurses' performance is absolutely a must to gain improvement in healthcare system performance, enhance and handle patients" needs, reduce health care costs by reducing the length of staying in hospitals [19].

Performance obstacles may be related to one or more elements of the work system, such as those related to tasks which include, dealing with many professional issues, and performance obstacles related to tools as unavailability of necessary equipment in a timely manner were considered among the categories of performance obstacles that prevent staff nurses from accomplishing their tasks [20].

Healthcare delivery is highly labor-intensive field. The quality, efficiency and equity of services are all dependent on the availability of skillful, competent and motivated health professionals when and where they are needed. There is a growing concern about the poor quality of health services rendered to the population. Also nursing staff is the largest personnel component in the public health sector and are deployed at all levels of the health care delivery system [21].

There are gaps in researches that associated the nurses work environment with their performance. There is research that assess of nurses performance on the patients safety which applied by **Aziz Mamdouh et al., (2020)** [13] who summarized that more than fifty percent of the participants had unsatisfactory knowledge as well as performance related to the implementation measures of patient safety. Also the study performed by **Mohamed and Gaballah, (2018)** [22] to assess relation between hospital climate as well as nurses' performance, and concluded that statistically significant positive association between nurses' perception of work climate as well as job performance.

On the same context the study applied by **Olsen et al., (2009)** [23] to examine a proposed bullying model that takes into account workplace demands and resources, as well as nurse outcomes expressed in work ability, job performance, and job satisfaction, and discovered that The majority of work climate factors were found to have a direct impact on nurse outcomes, including job performance, job satisfaction, and work ability, as well as on workplace bullying.

Moreover, no studies to date were done to identify the most important work environment of hospital nurses and its relation to their professional performance. Therefore, the aim of the current study was to assess the relationship between hospital work environments on nurses' performance in critical setting.

Methods

A descriptive correlational research design was used to achieve the aim of the current study. The study was conducted on General Hospital in Jedahh, KSA from January to May 2022. The subjects of study sample included all staff nurses working in critical care units in General Hospital during the period of data collection sample size (no.=95 nurses), classified as: NICC 27 nurses, CCU 18 nurses, Burn 9 nurses, Dialysis 33, ICU 8 nurses. **Exclusion Criteria:** Staff nurse had less than six months in nursing work experience and worked on an irregular basis on the hospital.

Data were collected through the utilization of two tools as follows: **Tool (1):** The Nurses Work Environment. It composed of two parts as following: **Part one: Personal data sheet** developed by the researcher and contained personal data as age, gender, and years of experiences etc. **Part two:** Nurses Work Environment was developed by **Lake, (2002)** [5], and modified by **Amaral et al., (2012)** [24], to assess nurses work environment.

It consisted of (31) items. Responses of each item ranged from (agree 3 to disagree 1). So the scoring system was ranged from 31 to 93 as following: Bad work environment ranged from 31:51, Fair work environment ranged from 52:72, Good work environment ranged from 73:93

Tool (2): Observational Nursing Performance was developed by **Schwirian (1978)** [25], and modified by **Battersby & Hemmings, (1991)** [26] as well as **Dyess & Parker, (2012)** [27]. It includes 66 items divided into six-dimensions as following: Assessment 11 items, Planning 9 items, Nursing care 26 items, Collaboration and teaching 8 items, Interpersonal relation and communication 8 items, Evaluation 4 items.

The response of each item was divided into two column, column (A) which describes how often does the nurse performs these activities in his/her current job, which ranging from, column (B) which describes how well does this nurse perform these activities in his/her current job, the response of each item was divided as the following:

Column(A) How often does the nurse performs these activities in his/her current job			Column (B) How well does this nurse perform these activities in his/her current job		
Never or seldom	Occasionally	Frequently	Not well	Satisfactorily	Well
1	2	3	1	2	3

The observation was done by the researcher on three times in separated period. So the scoring system was ranged as following: Unsatisfied ≤ 60, Satisfied > 60

A panel of three nursing administration professionals evaluated the tools for face validity, and any necessary revisions were made, including some sentence paraphrases and Arabic language changes as well as change the response from 4:1(strongly agree : strongly disagree) to 3:1 from (agree: disagree). It was requested that each member of the expert panel evaluate the tools for content coverage, clarity, phrasing, length, structure, and overall appearance. To ensure that the tools were consistent, the scales' reliability was tested. The Cronbach's alpha test was used to determine the degree to which scale items measured the same notion and were correlated with one another. The results showed that the tools in the current study had good internal reliability, and they were distributed as follows:

Nurses Work environment tool   0.893
Nursing Performance tool   0.900

To determine the clarity, completeness, and application of the tools as well as to determine the proper time needed to fill the tools, a pilot study involving 10% of nurses. The pilot study's findings were added to the final results without alteration. Approval was obtained from Ethical Committee of University. The nurses were made aware that taking part in the study was entirely voluntary and that declining to do so would not have any adverse effects. After describing the nature and purpose of this study, head nurses and nurses gave their verbal approval. The nurses gave their word that the study's data would not be used again without additional authorization. Confidentiality and anonymity were guaranteed.

Using descriptive statistical tests, the obtained data was tabulated, computerized, analyzed, and summarized using SPSS version (28). Frequency and percentage were used to express qualitative data. Less than 0.05 was regarded as significant, and probability (P-value) is the measure of significance. Less than 0.001 was deemed to be highly significant (**), and the more important the result, the smaller the P-value that was achieved. The mean and SD were used to express numerical data. Frequency and percentage were used to express qualitative data. If there were numerous small predicted values, Fisher's exact tests

are alternatives to the Pearson's chi square test.

A statistical tool called correlation can be used to assess the type and significance of a relation between two numerical variables. The strength of the association is shown by the value of the co-efficient, whose sign (positive/negative) indicates the relationship's nature: Rho numbers under 0.25 have a weak correlation, those between 0.25 and 0.49 have a fair connection, those between 0.50 and 0.74 have a moderate correlation, and those over 0.74 have a strong correlation

Results:

Table (1) explains that (50.5%) of nurses are in the age 22-32yrs old with mean age 30.2±2.214years, also (73.7%) of them are females, also (70.5%) of them have more than ten years of experiences. In relation to the working area was (34.7%) of them working in dialysis unit. Moreover (47.4%) of them are married. Also in relation to level of education (44.2%) of them has Bachelor degree of nursing. Also, these findings indicate that the high percent of nurses have bad work environment as (92.6%), while (7.4%) of them have fair work environment. Finally none (0%) of them have good work environment. The results indicates that, in the average of the three observation show that the high percent of nurses have unsatisfactory performance as (87.4%), while (12.6%) of them has satisfactory performance.

Table (2) shows that there are statistical significance between number of times of nurse performs these activities in his/her current job and the quality or satisfy degree of nurse perform these activities in his/her current job (P=.001). **Table (3)** illustrates that there is a positive correlation between nurses work environment and their performance (r= .321& P=.002)

Table (1): Percentage distribution of the nurse's personal data (no.=95)

Nurse's personal data	no.	%
Age		
• 22-32yrs.	48	**50.5**
• 33-43yrs.	38	40.0
• >43yrs.	9	9.5
Mean ± SD	30.2+2.214	
Gender		
• Male	25	26.3
• Female	70	**73.7**
Years of experience		
• 1-10yrs	28	29.5
• 11-20yrs	67	**70.5**
Mean ± SD	13.2+4.2324	
Unit		
• NICU	27	28.4
• CCU	18	18.9
• Burn	9	9.5
• Dialysis	33	**34.7**
• ICU	8	8.4
Marital statues		
• Single	42	44.2
• Married	45	**47.4**
• Divorce/Widow	8	8.4
Qualification		
Secondary school nursing diploma	9	9.5

Nurse's personal data	no.	%
• Technical institute of nursing	23	24.2
• Bachelor of nursing	42	44.2
• Master in nursing	21	22.1

Table (2): Mean scores of nurse's total performance on the three different time (no.=95)

Nurses performance	How often does the nurse performs these activities in his/her current job	How well does this nurse perform these activities in his/her current job	T-test P-Value
	Mean + SD	Mean + SD	
First observation	109.8211±16.863	80.9895±11.366	13.533 .001**
Second observation	109.9474±16.823	82.6737±11.282	12.783 .001**
Third observation	110.0316±16.798	82.9158±11.469	12.614 .001**
Average of the three observations	109.9333±16.826	82.1930±11.282	13.006 .001**

Table (3): Correlation between nurses works environment and their performance (no. = 95).

Items		Nurses work environment	Nurses performance
Nurses work environment	**r** **P- value**		.321** .002
Nurses performance	**r** **P- value**	.321** .002	

Discussion

Nursing services are considered one of the most important elements of the success of the health care process, and the nursing profession is the backbone of health activity in health care institutions due to its clear and tangible impact on the health services provided, as nursing represents the largest professional group working in health care organizations [28]. Nurses play an integral role in the healthcare settings, providing care to the patients and carrying out leadership roles in hospitals, health systems and other healthcare organizations. Because nurses spend a lot of time with patients, they affect patient care. Research has shown that the nursing work environment is a determining factor. It seems that when patients have positive experiences of nursing care, nurses also experience a good, healthy work environment and they become more commitment to their work and their profession [29].

Regarding personal data of nurses, the present research revealed that approximately fifty-percent of the nurses' staff age group ranged 22-32yrs., about three quarters of them were female as well as had more than ten years of experiences, also the about one third of them were worked in dialysis unit. Moreover about half of them were married. Also in relation to level of education less than half of them had Bachelor degree of nursing. Regarding total scores of the practice work environment, the present research also, revealed that the majority of nurses had a bad level of the work environment. The proper rationale for this is that several nurses staff still suffer from the practice workload,

lack of available resources, lack of managers and administrator's appreciation and reword, poor communication and decision making, lack of other staff personnel respect and cooperation especially physicians, poor training and improvement programs this all affect their level of work environment satisfaction.

This finding was attributed to **Olds et al. (2017)** [3], who report that many nurses' opinions disengagement and dissatisfaction with their jobs for reasons that can be attributed to the work environment. Also, **Hegazy et al. (2021)** [17], stated that there are negative factors such as increased workloads, an insufficient number of nurses, communication problems within teams, insufficient equipment, and a lack of managerial support that result in an unhealthy work environment. While the finding was aligned with **Brofidi et al. (2018)** [30], who Compared Greek (the nursing practice environments) NPEs in certified (United States) US Magnet and non-Magnet hospitals and has shown that Greek nursing work environments are significantly unfavorable settings.

In addition the current research illustrated that the minority of nurses had a fair level of the work environment. This could relate to nurses' satisfaction and their abilities to engage in the hospital rules and policies, the nurse manager's principles and suggestions, well-accepted relation with other hospital personnel, and their level of practice and competence in delivering patient care and patients' outcome too. This finding is supported by **Liu et al. (2019)** [31], who reported that improving work environments lead to improve nurses' outcomes and patient outcomes such as job satisfaction, and work engagement decreases missed nursing care and patient safety, less burnout, higher quality of care, and safer care.

Also, **Al Sabei et al. (2020)** [32] identified factors, which influence the positive environment, which may reduce turnover intention, and increase work engagement among nurses. These factors include autonomy, environmental control, the relationship between doctors and nurses, and organizational support. Regarding total scores of the nurses' performance, the present research showed that the majority of nurses had unsatisfactory performance. The proper rationale for this is that several nurses' staff still suffers from lack of available resources, increase workload, as well as the critical conditions of patients that increase their stress, this all effect on their performance.

This results supported by **Pourteimour et al. (2021)** [33] mentioned that the increase in the work load lead to less satisfaction which reflect on the nurses performance and their quality of care. Also **Al-Ajarmeh et al. (2022)** [34] sated that CCUs increase nurses stress that effect on nurses' performance. Also these researches results illustrated that there was positive correlation between nurses work environment and their performance, from the researchers' point of view the support and health work environment reflect on the nurses satisfaction that effect on their performance. On the opposite hand unhealthy work environment increase nurses dissatisfaction that effect on their performance. These supported by **Suliman and Aljezawi, (2018)** [35] they mentioned that the work environment which support from their manager and peers, and a manageable workload are more likely to stay in their jobs and provided high quality of care for the patients with more satisfaction. Moreover, **Moisoglou et al., (2020)** [36] organizational support for workplace improvements and thereby improve nursing retention and enhance the patient care

Conclusion

The current research concluded that the majority of t of nurses had bad work as well as unsatisfactory performance. More there were positive correlation between nurse's work environment and their performance (p= 0.002**). This study recommended that use effective leadership styles should be used according to different situations. Provide effective and enough resources as well as facilities to enhance work environment condition. Evaluate staff nurses performance frequently. Enhance a supportive work environment by the nurse manager as effective way to increase nurses‟ psychological bonding and enhancing positive work- related outcomes that may, in turn, enhance their performance. Provide in-service training program for studied nurses about nurse practice environment

and nurses' performance.

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