



Impact of Physical Work Environment upon Nurses' Job Performance in Hospitals

Hussein Kadhim Abd Ali*, MScN; Wissam Jabbar Qassem**, PhD

* Ministry of Health, Iraq.

** University of Baghdad, College of Nursing, Baghdad, Iraq.

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Abstract

Objectives: To assess the physical work environment in hospitals; to evaluate nurses' job performance in those hospitals, and to determine the impact of physical work environment upon nurses' job performance.

Methodology: A descriptive analytical study was designed and carried out during the period from May 15, 2022 to 1 January, 2023 in Nasiriyah City/Iraq. Non-probability (purposive) sample of (410) nurses working in the city center hospitals were selected for the purpose of the study. A questionnaire was designed and constructed to measure the variables through the review of literature and related studies. Content validity is determined by a panel of (8) experts of faculty members. Internal consistency reliability through Pearson correlation coefficient was $r = 0.82$. Data collection process is performed through the use of the study questionnaire and data are analyzed through using the program of Statistical Package of Social Sciences (SPSS, Version 21).

Results: The data analysis revealed that those nurses are working in an inappropriate work environment and they are at risk for exposing to health problems. Regarding their job performance all the sub domains' items shows low level of job performance, and there was a great impact from the work environment upon their job performance.

Conclusion: The study concluded that there was a great impact of the physical work environment upon nurses' job performance.

Recommendations: The study recommends for continuous work environment monitoring in Nasiriyah City hospitals, and regular medical examinations should also be initiated for those nurses for early detection and diseases protection from environmental risks potentials.

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* Corresponding author at: Ministry of Health, Nurse Specialist, Iraq; *E-mail address:* Hussein.kazem1106a@conursing.uobaghdad.edu.iq (HK Abd Ali). *ORCID:* <https://orcid.org/0009-0008-3401-6365>. *DOI:* <https://doi.org/10.58897/injns.v36i1.707>.

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اثر بيئة العمل المادية على الاداء الوظيفي للممرضين في المستشفيات

المستخلص

الاهداف: لتقييم بيئة العمل المادية في المستشفيات؛ لتقويم الأداء الوظيفي للممرضات في تلك المستشفيات، ولتحديد تأثير بيئة العمل المادية على الأداء الوظيفي للممرضات.

منهجية البحث: تم تصميم وتنفيذ دراسة وصفية تحليلية خلال الفترة من 15 مايو 2022 إلى 1 يناير 2023 في مدينة الناصرية / العراق. تم اختيار عينة غير احتمالية (هادفة) قوامها (410) ممرض / ممرض / عاملين في مستشفيات مركز المدينة لغرض الدراسة. تم تصميم وبناء استبيان لقياس المتغيرات من خلال مراجعة الأدبيات والدراسات ذات الصلة. يتم تحديد صلاحية المحتوى من قبل لجنة مكونة من (8) خبراء من أعضاء هيئة التدريس. كانت موثوقية الاتساق الداخلي من خلال معامل ارتباط بيرسون $r = 0.82$ ، ويتم إجراء عملية جمع البيانات من خلال استخدام استبيان الدراسة ويتم تحليل البيانات من خلال استخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS، الإصدار 21).

النتائج: أظهر تحليل البيانات أن هؤلاء الممرضات يعملن في بيئة عمل غير مناسبة وأنهن معرضات لخطر التعرض لمشاكل صحية. فيما يتعلق بأدائهم الوظيفي، تُظهر جميع عناصر المجالات الفرعية مستوى منخفضاً من الأداء الوظيفي، وكان هناك تأثير كبير من بيئة العمل على أدائهم الوظيفي.

الاستنتاج: خلصت الدراسة إلى وجود أثر كبير لبيئة العمل المادية على الأداء الوظيفي للممرضات.

التوصيات: توصي الدراسة بالمراقبة المستمرة لبيئة العمل في مستشفيات مدينة الناصرية، كما يجب الشروع في إجراء فحوصات طبية منتظمة لهؤلاء الممرضات للكشف المبكر والحماية من الأمراض من المخاطر البيئية المحتملة.

الكلمات المفتاحية: أثر بيئة العمل المادية، اداء العمل التمريضي، الممرضين، المستشفيات

Introduction

The environment can be defined as the setting that can have an effect on human-being on different levels, its effect persistent throughout life work. The surrounding work environment that nurses work with has a great impact on nurses achieving capacity, also many negative and positive factors interact with nurses' performance, such as the structure, processes, and tools that could form the nurses' working environment^{(1), (2)}.

The physical environment plays a crucial role in nursing practice as it can significantly impact the health and well-being of nurses. A well-designed and maintained environment fosters efficient workflow, reduces the likelihood of errors and accidents, and promotes overall job satisfaction for nurses. Ergonomic design of equipment and workspaces, ample access to natural light, and noise reduction measures help to reduce physical stress.

Moreover, infection control protocols such as proper ventilation systems, clean surfaces, and well-organized storage contribute to a decreased risk of healthcare-associated infections⁽³⁾.

The physical work environment is considered a major leading cause of the performance of nurses. Also, the working environment has a huge effect on the ability of nurses to perform tasks and thus affecting their care outcomes. Moreover, different efforts and approaches were applied to improve care services and above this, dissatisfaction with healthcare services was still noticed^{(4), (5)}.

Heat, noise, vibration, electricity, and contact with or being struck by an instrument is just a few of the common physical dangers in healthcare environments. Physical agents used on patients, including as lasers, X-rays, and

other forms of radiation, can be harmful to nurses if not properly handled ⁽⁶⁾.

Nursing care can be divided into direct and indirect care, direct care is the most important and it could be recognized by the behavior of nurses, the quality of care delivered as well as the care outcome. Moreover, there are multiple qualities that the nurse should have such as respecting patients' values and culture and maintaining human-being dignity ^{(7),(8)}.

The nurses' safety is very important in the work environment in any healthcare facility and affects directly their ability to work, so many psychological characteristics should be maintained such as satisfaction in job and compassion as well as warm social interactions, and also, they may suffer from emotional exhaustion, fatigue, and burnout. Moreover, many studies suggested that a positive environment in the healthcare facility can lead to good psychological health for nurses and vice versa ⁽⁹⁾.

Nurses' efficiency, participation, and ethics greatly depend on the work environment, as they could be positive or negative as well as nurses' performance and motivation. As a result, healthcare companies race time to build an environment filled with positive elements such as salaries equal to the working hours, easily applicable health insurance, physical and emotional safety, and sharing different types of information. Moreover, some companies offer good valid training to its employee to enhance their abilities ^{(10), (11)}.

Many reasons that nurses abandon the profession are because of unacceptable working conditions such as a decline in opportunities for development, a monopoly on decision making, as well as heavy workloads, all the previous causes will lead to definitive dissatisfaction of nurses, hence leaving the profession ⁽¹²⁾.

Hospitals are receiving acute patient conditions, as a result of the advancement in the methods of diagnosis, treatment, and management and with the increment inpatient admissions and the challenging workplace settings, hence making nurses less satisfying and less productive ⁽¹³⁾.

The current study aims to evaluate the impact of the physical work environment on nurses' job performance in hospitals of Nasiriyah City/ Iraq.

Methodology

A descriptive analytical study design was carried out in Al-Nasiriyah City hospitals. The study has been initiated from 15th May, 2022 and ended at 1th November, 2022.

The questionnaire was submitted to the College of Nursing / University of Baghdad's Ethics Committee for Research permission.

Similarly, participants' agreement is obtained after they are introduced to the study's details for the purposes of participation, rejection, or withdrawal at any time, and after they are assured that their data will be kept anonymous and secure.

Non- probability (purposive) sample of (410) nurse working in Nasiriyah City Center Hospitals, were selected based on the study criteria, and after obtaining their consent to participate in the study.

The criteria of inclusion include those nurses with more than one year of employment from both genders.

A questionnaire was designed and constructed to measure the study variables. The questionnaire consisted of (3) parts and (14) items and (66) sub items.

Part I: Nurses' Demographic Characteristics sheet, consisted of (4) items and (16) sub – items which included items.

Part II: Assessment of the Nurses' Physical Work environment in hospitals, consists of (25) items classified to (yes and no).

Part III: Evaluation of Nurses' Job Performance in Hospitals, consists of (25) item classified to (always, sometimes, and never).

A pilot study was carried out. The number of nurses that participated in the pilot study was 41, and these individuals

were selected purposively. The content validity is determined by a panel of experts who are (8) faculty members.

Internal consistency reliability through Pearson correlation coefficient which was $r= 0.82$.

Data collection process is preformed through the use of the study questionnaire started at 1 June, 2022 to 1th November, 2022 and data are analyzed through using the program of Statistical Package of Social Sciences (SPSS, Version 21).

Results

Table (1): Distribution of the Study Sample by Their Socio- Demographic Characteristics (N= 405 Nurse)

Variable	Groups	Freq.	%
Age Groups	21-30	341	84.2
	31-40	64	15.8
	Total	405	100.0
Gender	Male	164	40.5
	Female	241	59.5
	Total	405	100
level of Education	Secondary nursing school	7	1.7
	Diploma	272	67.2
	Bachelor	126	31.1
	Total	405	100.0
Employment	2 years	31	7.7
	3-6 years	374	92.3
	Total	405	100.0

This table revealed that the majority of study sample age at 21- 30 years, accounted for (84.2%). Most of the nurses were females (59.5%), and have diploma degree with 3-6 years of employment.

Table (2): Assessment of the Nurses' Physical Work environment in Hospitals

Physical hazards in the work environment		M.S	SD	Ass.
1	The workplace is suitable for nurses to work in health institutions	2.01	0.774	L
2	Ventilation is appropriate in the workplace	2.00	0.769	L
3	Exposure to radiation hazards in the workplace	4.00	0.763	H
4	Lighting is good and sufficient for working conditions	2.00	0.766	L
5	The temperature and coolness are appropriate in the workplace	2.00	0.787	L
Biological factors in the physical work environment		M.S	SD	Ass.
1	An appropriate environment is available to protect nurses from the risk of infection in health institutions	1.99	0.790	L
2	Personal protection means are available to avoid the risk of infection in the workplace	1.99	0.774	L
3	Adequate instructions are available regarding prevention and self-protection from infectious diseases	1.99	0.782	L
4	Work lobbies are appropriate and within the controls that help prevent infectious diseases	1.98	0.774	L
5	There is an administrative control that obliges nurses to adhere to personal protective equipment	1.99	0.785	L
Security factors in the physical work environment		M.S	SD	Ass.
1	There is sufficient security and safety in health institutions	2.00	0.794	L
2	There is a law that protects the rights of nurses in health institutions	1.99	0.771	L
3	Ensuring personal safety while doing work	1.99	0.782	L
4	Ensure safety from threats outside health institutions	1.99	0.776	L
5	There is coordination between supervisors in health institutions to ensure the safety of nurses	1.99	0.771	L
Chemical factors in the physical work environment		M.S	SD	Ass.
1	There are instructions showing how dangerous it is to deal with high-risk drugs	1.99	0.771	L
2	Ensure safety from the danger of dealing with sterilizers and disinfectants	1.99	0.769	L

3	Ensure safety from dangerous contact with detergents in the workplace	1.99	0.767	L
4	Ensure safety from fumes resulting from some treatments while giving treatment to patients ⁵	1.99	0.771	L
5	There are instructions showing the chemicals and how to deal with them	1.99	0.769	L
Social and psychological factors in the physical work environment		M.S	SD	Ass.
1	Dealing shall be on the basis of fairness and equality in the health institution	1.98	0.772	L
2	Dealing with each other is based on mutual respect in health institutions	2.12	0.910	L
3	Dealing shall be based on respecting the rights of others and respecting their dignity	2.10	0.898	L
4	Dealing positively to get rid of psychological stress during work	2.10	0.903	L
5	Psychological pressures affect the efficiency of performance during the practice of work	2.10	0.892	L

(M.s) mean of score, (SD) stander deviation, Low= 1-2.66, medium= 2.67-3.33, high= 3.34-5.

This table show that the risks of the physical work environment that all of responded were (low) except exposure to radiation hazards in the workplace was (high).

Table (3): Evaluation of Nurses' Job Performance in Hospitals

Evaluation of performance during the performance of nursing work		M.S	SD	Eva.
1	The supervisor rewards you for performing an outstanding job	2.10	0.896	L
2	The supervisor informs you of the wrong actions while performing your work	2.07	0.890	L
3	The supervisor tells you areas of work that need to be improved.	2.08	0.885	L
4	You receive directions about the work you are involved in	2.07	0.884	L
5	Your performance improves because of the feedback you receive while working	2.08	0.886	L
Supporting supervisors while performing nursing work		M.S	SD	Eva.
1	The supervisor engages the nurses in the decision-making process	2.08	0.889	L
2	The supervisor allows nurses to work on their own problems in complex situations	2.08	0.889	L
3	The supervisor directs the nurse what to do	2.08	0.888	L
4	Nurse supervisors help their love of nursing work	2.07	0.884	L
5	Nurse supervisors clearly provide their responsibilities and allow them to accomplish these tasks	2.07	0.883	L
Rewards and incentives during the performance of nursing work		M.S	SD	Ass.

1	Administrators are committed to your career development	2.07	0.880	L
2	How satisfied are you with the career progression and opportunities available to you in your organization	2.07	0.880	L
3	You are satisfied with your salary	2.06	0.876	L
4	You are consulted in the decision-making process of your department	2.08	0.881	L
5	You get compensated for the extra time you spend working	2.07	0.880	L
Evaluating the performance of nurses during the practice of nursing work		M.S	SD	Ass.
1	Easily make available the resources needed to do your work	2.10	0.873	L
2	How much do you trust your leaders in health institutions	2.07	0.861	L
3	I received adequate training to perform the job better	2.07	0.862	L
4	Your organization has a good policy and features in evaluating the work of nurses	2.06	0.848	L
5	Your organization has development opportunities for nurses working in health institutions	2.06	0.846	L
Evaluation of work efficiency during nursing performance		M.S	SD	Ass.
1	You are able to stick to working hours	2.07	0.861	L
2	You prioritize your tasks effectively	2.08	0.855	L
3	You can complete your tasks quickly	2.08	0.860	L
4	Make the most of your time by working efficiently	2.08	0.854	L
5	Use the most effective way to do nursing work	2.07	0.853	L

(M.s) mean of score, (SD) stander deviation low= 1-2.66, Medium= 2.67-3.33, High = 3.34-5.

This table show evaluation of nurses' job performance in hospitals in all subdomains items were low.

Table (4): Impact of Physical Work Environment upon Nurses' Job Performance in Hospitals

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(constant)	12.049	0.0686		28.053	0.000
work environment	0.0957	0.0852	0.423	0.823	0.001

B: regression Coefficients, **T:** t-test, **sig:** significant.

This table show great impact of the physical work environment upon nurses' job performance.

Discussion

The results of the study shows that among all study sample members, those between the ages of 21 and 30 made up the largest percentage (84.2%).

These results are consistent with those of the study by Naseri (2021), who evaluate the impact of work environment on nurses' compassion, which sought to evaluate the connection between workplace conditions and nurses' compassion in Tabriz University of Medical Sciences' intensive care units (78%),⁽¹³⁾.

This is consistent with Norkiah (2015), who conducted a study on the impact of the workplace on nurses' caring behavior in Sabah, Malaysia. Because of the profound impact that nurses' actions have on their productivity and patients' outcomes, understanding the factors that shape their pro-social conduct in the workplace is important. If nurses aren't able to do their jobs well, their patients won't be satisfied with the care they receive⁽¹⁴⁾.

Regarding nurses' gender, it is realized that 341 of the study sample's participants (61.7% of the total) were female, while the remaining participants are male. These results are consistent with the findings of Akhter (2017), who conducted a study on the workplace environment and performance of nurses in a tertiary hospital⁽¹⁶⁾.

A study in Chittagong Medical College Hospital, the results a study population of 192 nurses indicated that the majority of them were females (91,4%) and the remainder were males (38%)⁽¹⁷⁾.

These results are consistent with those of a study by Naseri (2021) who conducted a study on the impact of work environment on nurses' compassion, which set out to

evaluate the connection between nurses' working conditions and their compassion in intensive care units. A total of 235 nurses, including 165 women (73%) and 34 men (37.2%), participated in the stud⁽¹⁸⁾.

With respect to the assessment of the physical environment, the findings revealed that those nurses are working in an inappropriate work environment and they are at risk for exposing to health problems.

Regarding the job performance of those nurses and throughout all the sub domains, all items shows low level of job performance, and there was a great impact from the work environment upon their job performance.

Conclusions

The study concluded that there was a great impact of the physical work environment upon nurses' job performance and those nurses are at risk for experiencing work-related health problems.

Recommendations

The study recommends for continuous work environment monitoring in Nasiriyah City hospitals, and regular medical examinations should also be initiated for those nurses for early detection and diseases protection from environmental risks potentials.

Conflict of Interest

None.

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