Nursing Work Environment, Professional Competencies, Patient Safety Culture, and Attitude Toward Incident Report

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Abstract

Background: Unsafe health practices are one of the leading causes of disability and even death. Professional competence, patient safety culture and positive work environment are crucial to ensure safe and high-quality healthcare services as well as ensure the achievement and compliance with incident report. **Aim:** to investigate relationship among nursing work environment, professional competencies, patient safety culture and attitude toward incident report. **Participants and methods**: 230 nurses from Al-Ahrar teaching hospital in Zagazig, Egypt, were chosen at random from the sample. This study used a descriptive correlational design; four instruments were employed to collect the data: Practice Environment scale of nursing work index, Nurses professional competence scale, Hospital survey on patient safety culture scale, and Reporting of clinical adverse events scale. **Results**: nearly less than three quarters of studied nurses had a high perception level regarding nursing work environment and patient safety culture. While slightly more than three quarters of them had a high level of professional competencies, but more than half of them had a high perception level of attitude toward incident report. **Conclusion**: Nursing Work environment was positively correlated to professional competencies and patient safety culture. Also, patient safety culture had a positive correlation with professional competence and attitude to incident report. **Recommendation:** Healthcare providers should develop the basis for improving the culture of patient safety and reducing adverse events through methods such as encouraging the reporting of adverse events and holding training courses for nurses that improve their competencies within positive work environment.

Keywords: Attitude toward incident report, Nursing Work environment, Professional competence, Patient safety culture.

Introduction

Nurses play an important role in patient safety through nursing care and nursing management. Nursing care involves direct contact with patients; includes patient surveillance, dressing and medication administration. While nursing management includes reporting patient safety incidents, performing environmental or other unit activities, and being involved in leadership **(Agency for Healthcare Research and Quality, 2022).**

Nurses are often the primary point of contact with patients and are responsible for ensuring that their needs are met. They are in charge of ensuring that hospitalized patients get safe treatment, and nurse leaders are responsible for creating priorities that define the safety culture and prevent the occurrence adverse events **(Aboufour et al., 2022)**. On the other hand, by providing patient-centered care, nurses can assist in creating a culture that prioritizes patient safety. In addition, they can act as advocates for patient safety, promoting a culture of safety within the organization and encouraging others to do the same. Nurses should be given the power to make decisions about patient care and safety, as well as to report any harmful conditions or concerns. They can indeed act as role models for other healthcare professionals, emphasizing the importance of patient safety and providing a good example for others to follow **(Araújo et al., 2022).**

Competent nurses are key contributors to maintain safe and effective health care services by integrating knowledge, skills, and attitudes that enable them to adapt to dynamic health environments **(Huh et al., 2021).**

Nurses are always challenged on how they can contribute to society as professionals. They are expected to take professional responsibilities for continuously providing direct care, protecting individual lives and supporting activities of daily living. To accomplish this, it is important for nurses to improve their nursing competency and utilize it in their daily practice **(Feliciano et al., 2020).**

Nursing competency is a holistic and integrated concept, which is constructed from complex activities. It is defined as a performance competency, which meets the standards expected from potential competencies. Nursing competency was categorized into seven elements subsisting within three major components: the first component is the ability to understand people which includes; applying knowledge and building intrapersonal relationships. The second component is the ability to provide

people-centered care that includes; providing nursing care, practicing ethically, and collaborating with other professionals. While the third component is the ability to improve nursing quality which includes expanding their professional capacity, and ensuring the delivery of high-quality nursing **(Radwan et al., 2022).**

A professional competency is defined as the ability to practice nursing that meets the needs of clients cared for using logical thinking and accurate nursing skills." The nursing competency structure consists of four abilities: the ability to understand needs, the ability to provide care, the ability to collaborate and the ability to support decision-making. These four abilities are closely related and utilized in all types of nursing practice settings **(Gunawan et al., 2020).**

A high level of competence promotes the achievement and compliance with the patient safety goal. The assessment of patient safety culture could help to ascertain the staff's attitudes and beliefs with regard to patient safety **(Titi et al., 2021).**

A healthy work environment enables safe, empowered, and satisfactory work by nurses, and affects nursing outcomes; including job performance, job satisfaction and their psychological health. Additionally, nursing work environment is related to patient safety as improved work environments is associated with increased care quality, patient satisfaction, and a more positive safety culture in healthcare settings **(Rainbow et al., 2020).**

Patient safety is considered a very crucial and significant issue in nursing. It is described as healthcare organizations' common philosophies, ideologies, beliefs, sentiments, assumptions, expectations, attitudes, conventions, and values. Patient safety culture is a comprehensive notion that includes the nurse's interactions with healthcare organizational leaders beginning with hospital managers/administrators, directors of nursing services, or all management roles, peers, professional colleagues, and patients **(Alshehry et al., 2022).**

To improve patient safety, a systematic, organizational approach should be considered to create a patient safety culture, which is defined as shared values, beliefs, and norms among healthcare professionals in institutions that influence their behaviors, attitudes, and actions toward the safety of patient. Patient safety culture not only affects patient outcomes (e.g., infection, hospital-acquired pressure ulcers, and falls) but also patient experiences **(Zabin et al., 2022).** It is very important to improve patient safety by identifying nurses' awareness of patient safety culture and by exploring the factors that affect patient safety culture.

Several factors can affect patient safety culture; in particular, clinical competency, communication, and working environment are related to patient safety and safety culture. Because patient safety is a fundamental human right, it is the responsibility of all healthcare professionals, regulatory agencies, and political organizations to foster a growing patient safety culture **(Habahbeh et al., 2020).** According to the World Health Organization (WHO), the main barrier for moving toward a safe health system is shifting the culture from one of blaming people for errors to seeing errors as chances for improving the system and preventing injury. As a result, healthcare organizations should foster an atmosphere in which patient safety culture is explicitly stated as an organizational goal and is prioritized by healthcare executives in order to promote patient safety culture **(WHO, 2017).**

Creating a safety culture in healthcare organizations necessitates the involvement of all members, as healthcare delivery includes multiple caregivers beginning with physicians, pharmacists, nurses, technicians, and housekeepers, to collaborate as an effective team with the goal of achieving desired patient wishes, outcomes, and preventing harm. Because the quality of cooperation influences the efficacy of treatment, patient safety, and clinical results, the objective of developing a safety culture must be shared by all personnel in order to provide safe and effective healthcare **(Keshvari et al., 2023).**

Patient safety indicates the absence of adverse events (AEs). AEs are defined as an unintended injury resulting from a medical intervention, regardless of the patient's underlying medical condition. The occurrence of AEs varies between 3 and 17% of all hospital stays **(Mahsoon et al., 2021)**. The critical incident reporting system (CIRS) is an instrument and a platform where hospital employees can anonymously report AEs and other critical incidents that occur in the context of health care **(Lee and Kim, 2023).**

Reporting errors in clinical practice is critical to enhance patient safety and improve the quality of care. The aim of reporting errors is to gather all the required information on patient safety reported by healthcare professionals as well as to enable health care organizations to use this information to understand system errors and create changes to reduce the likelihood of the reoccurrence of the error. Therefore‹ reporting all types of errors by healthcare professionals is crucial **(Chapuis et al., 2019)**.

The most frequent events were complications associated infections, surgical procedures and medication, blood infection, pressure ulcer, patient fall, and hospital infection. However, there is a range

of barriers that impede AEs reporting. As possible reasons for not reporting AEs are lacks of support from authorities or the person causing the error, fear of consequences and punishment, lack of knowledge and high workload **(Hada and Coyer, 2021).**

These preventable events occur due to poor skills and knowledge of nurses and doctors. These errors caused by problems in management, work environment, and employees which are considered as an important aspect for preventing adverse events. Since individual errors are unavoidable completely, the focus has changed from blaming individuals to improving systems. **(Simsekler et al., 2020).**

Significance of the study:

As patient advocates, nurses are in a pivotal position to actively provide safe, culturally competent care. Patient safety is the heart of healthcare quality. Inadequate clinical competencies of nurses and other health workers causes sentinel incidents in health services **(Keshvari et al., 2023)**. This also contributes to job dissatisfaction, and affects the quality of care and patient safety.

Applying a patient safety culture and presence of positive nurse work environment are important factors affecting the quality of health services and improve nurse's attitude toward incident report. For instance, nurse work environment ,clinical competencies and patient safety culture were associated with a lower incidence of adverse events in patients which has become a global problem and a critical indicators of patient safety as well as they hurt patients and might result in temporary or permanent disability due to individual errors and system weakness in providing health service, so the aim of this study was to investigate the effect of nurse work environment, professional competence and patient safety culture on attitude toward incident report.

Aim of the study

The present study aimed to investigate relationship among nursing work environment, professional competencies, patient safety culture and attitude toward incident report.

Research Question

1. What are the nurses' perception levels about nursing work environment professional competencies, patient safety culture and attitude toward incident report?
2. Are there relations among nursing work environment, professional competencies, patient safety culture and attitude toward incident report?

Subjects and methods

Research Design:

A descriptive correlational research design was used to achieve the aim of the current study. The descriptive correlational design purposes to defines variables and examine relationships among them **(Grove et al., 2015).**

Research Setting:

This study was conducted at Al-Ahrar Teaching Hospital, Zagazig, Egypt, which encompasses five floors involving different departments providing free treatment, such as: emergency, Orthopedic Nephrology, Ophthalmology, Cardiology, Tumors, Open Heart Surgery I.C.U. Operation room, Internal Medicine, Cardiology, Endoscopy, Gynecology &Obstetric, General Surgery, with a total number of 500 staff nurses and total capacity of 480 beds.

Subjects & Sampling:

A simple random sample of 230 nurses providing direct patient care in the mentioned hospital. The researchers place all of the nurses' names in a container and collected until they had the necessary number of nurses.

Exclusion Criteria:

Staff nurses with less than three months' experience in Al-Ahrar Teaching Hospital and who were presently undergoing orientation were excluded from the study. The study did not include staff nurses who were not directly involved in caring for patients.

Sample size was estimated using the following formula [n= N/ 1+ N (e)2] **(Yamane, 1967)**; at confidence interval 95%, margin of errors 5.0%, a total population size of 500 staff nurses. The required sample size was 230 staff nurses.

Instruments:

Four tools were used to collect data for this study.

Tool I: Practice Environment Scale of Nursing Work Index (K-PES-NWI): It consists of two parts**. Part I:** Covered Personal and job characteristics of nurses. It was developed by the researcher such as; age, sex, years of experience, educational qualification and job position. **Part II:** It was developed by **Lake and Friese, (2002)** and translated by **Cho et al. (2011)** to assess working environment conditions levels as perceived by nurses. It consists of 28 items grouped under five domains namely: Nurse Participation in hospital affairs (8 items), Nursing foundations for quality of care (8 items), Nurse Manager Ability, leadership, and support of nurses (5 items), Staffing and resource adequacy (4 items) and collegial nurse-physician relations (3 items).

Scoring system:

Responses to the scale was measured on four-point Likert scale from one (strongly disagree) to four (strongly agree), with higher scores denoting a more positive nursing work environment. The participants' responses were added up; it ranged from 28 to 112.

The scores were converted into a percentage score, conferring to a statistically and validated cut-off point, the score was considered high (positive perception) if it was ≥ 60%, and low (negative perception) if it was < 60**%.** Cronbach alpha coefficient was 0.93 that demonstrated a reasonable degree of internal reliability.

Tool II: Professional Competence Scale. It was developed by **Nilsson et al., (2018)** to measure nurses' self-reported competence level. It included 35 items divided into six dimensions as following: Nursing care (5 items), Value-based nursing care (5 items), Medical and technical care, (6 items), Care pedagogics (5 items), Documentation and administration of nursing care (8 items), Development, leadership and organization of nursing care (6 items).

Scoring System:

The response to the scale was given on a 4-point scale ranging from 1 (to a very low degree) to 4 (to a very high degree). The participants' responses were added up; it ranged from 35 to 150. The scores were converted into a percentage score, conferring to a statistically and validated cut-off point, the score was considered high if it was ≥ 60% and low if it was < 60**%.** Cronbach alpha coefficient was 0.87 that demonstrated a reasonable degree of internal reliability.

Tool III: Hospital survey on patient safety culture (K-HSOPSC 2.0). It was developed by **Sorra, et al. (2019),** then modified and validated **by Lee and Dahinten, (2021)** to assess patient safety culture levels in healthcare organizations as perceived by nurses. It consists of 33 items grouped under ten domains namely: Teamwork (3 items), Staffing and Work Pace (3items), Organizational learning – Continuous improvement (3 items), Response to Error (4 items), Supervisor, Manager, or Clinical Leader Support for Patient Safety (3 items), Communication About Error (3 items), Communication Openness (4 items), Reporting Patient Safety Event (2 items), Hospital Management Support for Patient Safety (3 items), Handoffs and Information Exchange (3 items).

Scoring system:

Responses to the questionnaire were measured on 5-point response scales in terms of agreement (1= strongly disagree to 5= strongly agree). There are also two single items that ask respondents: (1) to provide an overall rating of patient safety for their unit (i.e., a patient safety grade) using a 5-point response scale (poor to excellent), and (2) how many patient' safety events they have reported. The participants' responses were added up; it ranged from 33 to 165. The scores were converted into a percentage score, conferring to a statistically and validated cut-off point, the score was considered high if it was ≥ 60 and low if it was < 60**%.** Cronbach alpha coefficient was 0.84 that demonstrated a reasonable degree of internal reliability.

Tool IV: Reporting of Clinical Adverse Events Scale (RoCAES-D). It was adopted by **Litke et al., (2020)** to identify perception level of nurses' attitudes toward incident reporting. It consists of 24 items under 5 dimensions, namely: Perceived Blame (8 items), Perceived criteria for identifying events that should be reported (6 items), Perceptions of colleague's expectations (5 items), Perceived benefits of reporting (3 items) and Perceived clarity of reporting procedures (2 items). Responses to the scale rated with a 4-point Likert scale from '1' (strongly agree) to '4' (strongly disagree). 16 items required reversed scoring. As agreeing to item 4 ('reporting adverse events protects patients') results in a positive attitude and item 3 ('It is not my responsibility to report adverse events involving colleagues') is formulated negatively, we assumed that the scoring guideline for these two items was switched in the original study**.**

Scoring system:

The participants' responses were added up; it ranged from 24 to 96. The scores were converted into a percentage score, conferring to a statistically validated cut-off point, the score was considered high if it was ≥ 60 and low if it was < 60**%.** Cronbach alpha coefficient was 0.83 that demonstrated a reasonable degree of internal reliability.

Data Collection Procedure:

1. Administrative Approval

Firstly, an ethical permission was granted from Scientific Research Ethical Committee at Faculty of Nursing Zagazig University. Then an official permission was obtained from The Dean of the Faculty of Nursing Zagazig University to the Director of Al-Ahrar Teaching Hospital to allow data collection for the current study.

Before conducting the study, meetings were held between the researchers and nurses for explaining the nature and aim of the study and informed that participation in the study is voluntary and they can withdraw from the study at any time. In addition, assuring complete confidentiality of the obtained information. The results of the study, along with the recommendations will be forwarded to the hospital administration for future application.

2. Operational design

The operational design includes the preparatory phase, the pilot study, and the fieldwork, started from the beginning of April to the end of June 2024.

Preparatory Phase:

The preparatory phase started from the beginning of March to the mid of April 2024, covering one month and half including the following: Reviewing the national and international related literature using journals, magazines, periodicals, textbooks, internet, and theoretical knowledge of the various aspects concerning the topic of the study. Four tools' contents were developed, translated into Arabic, and tested for its content validity and reliability.

Tools Reliability and Validity:

The tools contents were developed and tested for its content validity through five experts of Nursing Administration of various universities. The validity of the tools aimed to judge its clarity, comprehensiveness, relevance, simplicity, and accuracy. Based on their recommendations minor modifications were made and the researchers developed the final validated form of the tools. The internal consistency has been tested using Cronbach's alpha coefficient. Cronbach's alphas were (α= 0.93, 0.87, 0.84, & 0.83) for nursing work environment, professional competency, patient safety culture, and attitude toward incident report, which reflect accepted internal consistency of the tools.

Pilot Study:

At the end of March 2024, before collecting data, the revised questionnaire sheets were piloted with 10% from the total subject (23 nurses) to test the clarity of sheets and to evaluate the feasibility and effectiveness of the proposed tools. In addition, to estimate the time needed to fill questionnaire sheets. No modifications were done, and pilot nurses were included in the main study subjects.

Fieldwork:

Data collection extended three months from the beginning of April 2024 to the end of June 2024. The researchers collected data from nurses before and between their work hours according to their availability through three days per week (Sunday and Thursday) from 11.0 a.m. to 2.00 p.m.

The time required filling the questionnaires sheet was from 15-25 minutes.

Statistical Design:

Data entry and statistical analysis were performed using the Statistical Package for Social Science (SPSS), version 25.0. Cleaning of data was done to ensure there is no missing or inappropriate data. Data were displayed using descriptive statistics in the form of frequencies and percentages for categorical variables, and means and standard deviations for continuous variables. Pearson correlation analysis was used for assessment of the inter-relationships between total scale scores. Statistically significant difference was considered at p-value ≤0.05 and highly statistically significance when p≤0.005.

Results

Table 1 presents that, less than half of nurses' age were between 30 to < 40 years (84.4%) with a mean of 30.26 ± 6.45. Furthermore, the majorities of them were female, had less than 10 years of experience, and had Bachelor of nursing and work as a charge nurse (91.3%, 62.3 %, 56.7%, and 80.5% respectively). Regarding their job characteristics, all of studied nurses (100%) had a shift work, slightly more than half of them reported that they had patient safety related education, they hadn't experienced of patient safety incident at work place, and they reported that indirect patient safety was related to miss near (55%, 59.2 %, 55% & 60% respectively).

Table (2): indicates distribution of different study variables' mean scores as reported by nurses. Concerning nurse work environment, the highest mean score was related to nurse participation in hospital affairs followed by nurse manager ability, leadership and support of nurses (20.28 ± 3.9 & 13.60 ± 4.4 respectively), While the lowest mean score was related to collegial nurse physician relation (8.8 ± 4.1), with total mean score (66.55 ± 9.13). Regarding professional competence, the highest mean score was related to documentation and administration of nursing care followed by development, leadership of nursing care (20.75±3.1 &16.13 ± 2.8 respectively), while the lowest mean score was related to value **based** nursing care (10.45 ± 3.1), with total mean score (86.58 ± 13.60).

As regard patient safety culture, the highest mean score was related organizational learning – Continuous improvement followed by clinical leader support for patient safety and teamwork (8.7 ± 6.4, 8.4 ± 5.8 & 7.8 ± 1.2 respectively). While the lowest mean score was related to reporting patient safety event and handoffs and information exchange (1.3 ± 0.94 &1.6 ± 0.81), with total mean score (53.20 ± 12.76).

Concerning attitude toward incident report, the highest mean score was related perceived blame (17.9 ± 4.0), while the lowest mean score was related to perceptions of colleague's expectations (9.8 ± 2.8) with total mean score (54.16 ± 7.9).

Figure 1 demonstrates that slightly less than three quarters of studied nurses (70% & 73% respectively) had a high level of perception regarding nursing work environment and patient safety culture. While 78% of them had a high level of professional competencies but slightly more than half of them (67%) reported that they had a high level of perception related to attitude to incident report.

Table 3 demonstrates that nurse work environment had a positive correlation with professional competence and patient safety culture (r = - 0.340 & r = 0.410, at P = 0.000), also professional competence had a positive correlation with patient safety culture and attitude to incident report (r = 0.458 & r = 0.999, at P = 0.000, respectively). Similarly, patient safety culture had a positive correlation with attitude to incident report (r = - 0.721 at P=0.000).

Table (1): Personal characteristics of studied staff nurses (n=230).

Personal characteristics of studied nurses	**No**	**%**
Age in year:		
< 40	194	**84.4%**
≥ 40	36	15.6%
Mean ± SD **30.26 ±6.45**		
Gender:		
Male	20	8.7%
Female	210	**91.3%**
Experience (in years):		
< 10	150	**62.3%**
≥ 10	80	34.7%
Mean ± SD **7.68 ±5.03**		
Educational qualification:		
Nursing diploma	20	8.7%
Technical diploma in nursing	69	29.9%
Bachelor of nursing	131	**56.7%**
Master degree or more	10	4.3%
Job characteristics of studied nurses	No	%
Type of duty		
Shift worker	230	**100%**
Non shift worker	0	0
Job position		
Staff nurse	34	14.3%
Charge nurse	**186**	**80.5%**
Supervisor	10	4.3%
Work unit		
Department	96	**41.6%**
ICU	48	20.8%
Operating room	46	19.9%
Out patient	22	9.5%
Others	18	7.8%
Attended patient safety-related education		
Yes	127	**55%**
No	103	45
Patient safety incident experience		
Yes	92	39.8%
No	138	**59.2%**
Types of patient safety incident experience		
Direct	104	45%
Indirect	126	**55%**
Classification of patient safety incident		
Near miss	139	**60%**
Adverse events	91	40%
Patient safety accident reporting experience (last year)		
Yes	113	**48.9%**
No	117	**51.1%**

Table (2): Distribution of different study variables' mean scores as reported by studied nurses (n=230)

Study variables	Mean	±	SD
Nurse work environment:			
Nurse participation in hospital affairs	**20.78**	±	**3.9**
Nursing foundations for quality of care	12.05	±	2.2
Nurse manager ability, leadership, and support of nurses	**13.60**	±	**4.4**
Staffing and resource adequacy	11.28	±	3.4
Collegial nurse-physician relations	**8.8**	±	**4.1**
Total mean score	**66.55**	±	**9.13**
Professional Competence:			
Nursing care	13.05	±	4.4
Value-based nursing care	**10.45**	±	**3.1**
Medical and technical care	12.90	±	8.08
Care pedagogics	13.31	±	4.2
Documentation and administration of nursing care	**20.75**	±	**3.1**
Development, leadership and organization of nursing care	**16.13**	±	**2.**8
Total mean score	**86.58**	±	**13.60**

Cont. Table (2): Distribution of different study variables' mean scores as reported by studied nurses (n=230).

Con. Study variables	Mean	±	SD
Patient safety culture:			
Teamwork	**7.84**	±	**1.24**
Staffing and Work Pace	7.5	±	**1.21**
Organizational learning – Continuous improvement	**8.7**	±	6.4
Response to Error	6.04	±	1.53
Clinical Leader Support for Patient Safety	**8.4**	±	**5.8**
Communication About Error	6.3	±	5.3
Communication Openness	2.3	±	1.8
Reporting Patient Safety Event	**1.3**	±	**0.94**
Hospital Management Support for Patient Safety	2.00	±	1.8
Handoffs and Information Exchange	**1.6**	±	**0.81**
Patient safety grade	4.35	±	0.606
Frequency of event reporting	5.25	±	1.22
Total mean score	**58.20**	±	**12.76**
Attitude toward incident report:			
Perceived Blame	**17.91**	±	**4.0**
Perceived criteria for identifying events that should be reported	13.30	±	4.1
Perceptions of colleague's expectations	**9.8**	±	**2.8**
Perceived benefits and clarity of reporting	13.06	±	1.7
Total mean score	**54.16**	±	**7.9**

Figure (1) Total level of studied nurses' perceptions regarding study variables (n=230).

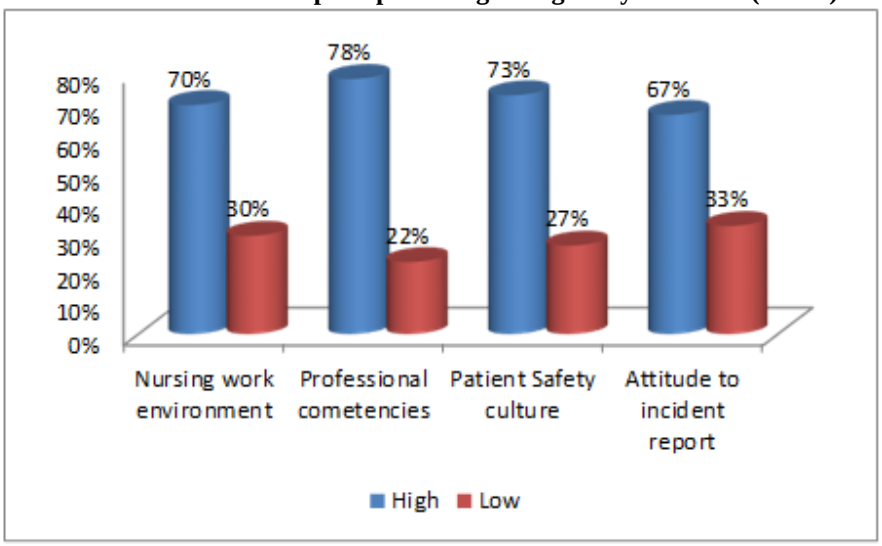

Table (3): Correlation matrix between study variables as reported by studied nurses (n=230)

Study variables	Nurse work environment		Professional Competence		Patient safety culture	
	R	P	R	P	R	P
Professional Competence	**0.340	0.000				
Patient safety culture	**0.410	0.000	**0.458	0.000		
Attitude toward incident report	0.061	0.358	**.999	0.000	**0.721	0.000

** Correlation is highly significant where p < 0.01 level.

Discussion

Concerning distribution of nurse work environment' mean scores as reported by nurses, the highest mean score was related to nurse participation in hospital affairs, while the lowest mean score was related to collegial nurse physician relation. As well only less than three quarters of studied nurses had a high level of perception regarding nurse work environment. In my opinion, this is may be due to medicine and nursing are closely linked professions in hospital care, and patient outcomes are dependent on the doctor's prowess in diagnosis and treatment, as well as nurses' constant observation and skills in passing on the right information to the right professional coworker.

Also, excessive stress has a negative impact on staff nurses' ability to deal with their environment in a normal manner, resulting in poor performance and, as a result, a negative impact on the organization where they work. These results were consistent with **Arsat, et al., (2022)** who investigated five types of work environment influencing nurses' caring behavior and found that highest mean score of nurse work environment was related to nurse participation in hospital affairs.

These findings were in disagreement with **El shrief et al., (2022)** who found that two third of studied subjects had poor perception of work environment. Also, **Abd-Elrhaman & Ghoneimy (2019)** who found that more than half of staff nurses perceived their work environment as average level regarding staff nurses' perception toward work environment.

Regarding professional competence, the highest mean score was related to documentation and administration of nursing care, while the lowest mean score was related to value based nursing care, as well more than three quarters of studied nurses had a high level of competence. This finding may be due to the hired nurses are expected to be qualified and were recruited by the hospital based on strict criteria related to these competency areas. In addition, they receive continued and in-service education from the nursing department throughout the year in different areas related to patient care.

The hospitals are equipped with high-tech systems of best care and documentation that facilitates nurses' care provision as well as documentation. Therefore, professionally competent nurses were able to provide quality of nursing care in the areas of documentation and administration which impact on patients and their families' satisfaction.

The results of the current study were consistent with **Halabi et al., (2021)** who assessing self-reported competence among registered nurses working as a culturally diverse work force in public hospitals in the Kingdom of Saudi Arabia and found that the RNs rated items of belonging to documentation and administration of nursing care were high from their competencies.

These findings were disagreement with **Abbaspour et al., (2021)** who study of the relationship between nurses' work experience and clinical competency at Mashhad University of Medical Sciences, Mashhad, Iran and found that most of studied nurses had a moderate level of clinical competence. Similarity a study conducted by **Al-Saqarat et al., (2018)** who assessed the impact of workplace bullying on nurses' competences among registered nurses in Jordanian public hospitals who found the lowest mean score of nurse competence was for care pedagogics.

As regard patient safety culture, the highest mean score was related organizational learning – Continuous improvement followed by clinical leader support for patient safety. While the lowest mean score was related to reporting patient safety event and handoffs and information exchange, as well as less than three quarters of studied nurses had a high level of perception regarding patient safety culture. This could be attributed the presence of management support for patient safety, the development of good communication between

nurses and between nurses and their managers, as well as feedback about errors, nurses working as a team within hospital units, and continuous learning and improvement through attendance at training programs.

These findings were consistent with and confirmed by **Olsen & Leonardsen (2021)** and **Araújo et al. (2022)** and who explained that the overall emphasis in quality and safety initiatives appears to be high at the hospital level. These findings, on the other hand, contradicted the findings of **Alquwez et al. (2018)**, who reported that patient safety culture at the unit level was moderate**.** Similarity **Alsenany et al., (2022)** to evaluate level of nurses' perception regarding patient safety culture for sustainable nursing practices at Egyptian university hospitals and found that the perception of staff nurses was greatest in the hospital handoffs and transitions dimensions of safety culture.

Concerning attitude toward incident report, the highest mean score was related perceived blame, while the lowest mean score was related to perceptions of colleague's expectations.

As well as slightly more than half of them had a high level of perception related to attitude to incident report. These findings may be due to doctors and nurses have a culture and knowledge about the reporting system and reported accidents. Generally, when healthcare providers do not have the courage and awareness of the importance of reporting incidents in terms of enhancing patient safety, this leads to a weakness in the incident reporting system in hospitals, as well as an increase in punitive that prevent the process of reporting conclude that there is a significant effect between the systems of reporting accidents by healthcare workers and patient safety.

These findings go in the same line with **Al Ratrout (2023)** among workers in the field of health care, evaluating the factors affecting it, and working to improve it in Palestinian governmental hospitals, and **Ismail & Khalid (2022)** who found that more than half of the study subjects had a high perception level of attitude toward incident report and the highest mean score was related to fear of punishment and blame. While these results were in disagreement with a study conducted by **Oweidat et al., (2023)** to investigate the level of awareness of incident reporting practices and identify the barriers that impact incident reporting among Jordanian nurses and found that nurses perceived their reporting practices at the medium level.

The finding of the current study demonstrates that nurse work environment had a positive correlation with competence and patient safety culture. In addition, competence had a positive correlation with patient safety culture and attitude to incident report. As well, patient safety culture had a positive correlation with attitude to incident report.

These findings may be due to a free and supportive nursing work environment has a great influence on the maintenance and securing of nursing personnel and the results of nursing work, and leads to the improvement of nursing quality, which positively affects the patient's health outcomes. Also, when patient safety culture perception within the hospital organization is established, not only errors can be minimized but also the incidence of safety accidents can be reduced.

The results of the current study go in the same line with **Choi and Kim, (2022)** who studied effects of perceived safety culture, nursing work environment, and professional self-concept on patient safety care activity of nurses in small-medium sized hospitals, found that nursing work environment was positively correlated to patient safety culture. On the same line a study conducted by **Hafezi et al., (2022)** to assess the relationship between patient safety culture and patient safety competency with adverse events, found competence had a positive correlation with patient safety culture and attitude to incident report.

On the other hands, the findings disagree with **Kim & Kwon, (2019)** who studied the effects of operating room nurses' perceptions of organizational health, safety climate, and the nursing working environment on engagement in patient safety management activities and **Lee and Kim (2023)** who studied environment on intention to stay of hospital nurses: a two-mediator serial mediation effect of career motivation and job-esteem found that nursing work environment was not correlated to patient safety culture.

Conclusion

Slightly less than three quarters of studied nurses had a high perception level of nurse work environment and patient safety culture. While more than three quarters of them had a high competence level. Also, slightly more than half of them had a high perception level of o attitude toward incident report. Nurse work environment had a positive correlation with professional competence and patient safety culture. Furthermore, professional competence had a

positive correlation with patient safety culture and attitude toward incident report. Similarly, patient safety culture had a positive correlation with attitude toward incidents, perception of patient safety culture, and ethical awareness in nurses of general hospitals or tertiary hospitals in Korea, and founded that ethical awareness had the greatest impact on nurses' intention to report errors.

Recommendations

In the light of the present study findings, the following recommendations are suggested:

- Encourage and give opportunities to their subordinates to engage in active staff development or continuing education programs, so that nurses acquire updated knowledge and skills,
- Use mistakes as learning opportunities, not criticism, are supportive of nurses and give praise and recognition for a job well done.
- Provide nurses the opportunities for career development/clinical ladder prospects, advancement, serving on hospital and nursing committees, participating in policy decisions, and involvement in the internal governance of the hospital.
- Build a supportive work environment as effective way to increase nurses' psychological bonding and enhancing positive work-related outcomes that may, in turn, enhance organizational performance and their work engagement.
- Create trust among nurses to maintain identity and confidentiality and be able to lead people's attitude towards reporting errors and make people feel comfortable to report their errors.

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