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| RESEARCH ARTICLE

The Transparency in Nurses' Work Environment and the Patient Safety

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| ABSTRACT

Transparency in nursing work environments is pivotal for enhancing patient safety and improving care quality. This study aims to identify work-related factors that influence nursing transparency and patient safety in a hospital setting. Employing a quantitative, non-experimental descriptive approach, this study surveyed 260 nurses from a pool of 800 at an educational hospital using an electronic questionnaire. The questionnaire assessed patient safety indicators, incident reporting transparency, work environment, and perceptions of patient safety culture. Data were analyzed using SPSS. The research highlights a significant correlation between work environments and transparency in incident reporting. Results indicated that better work environments are associated with higher levels of transparency and safety culture perception. The study also found that personal involvement in errors was underreported, suggesting a gap in the desired transparent culture. Enhancing the nursing work environment is crucial for improving transparency and patient safety, and strategic improvements in these areas can significantly bolster overall healthcare quality.

1. Introduction

Transparency is increasingly considered necessary to improve the quality of healthcare by being candid with both patients and nurses, which can promote leaders' accountability for safer systems, better engage nurses in improvement efforts, and engender greater patient trust (Nejm.org, 2013). Transparency refers to information-sharing. Transparency draws nurses into the decision-making process and provides more information to departments. When nurses understand processes and their organization, they are confident that their leaders and colleagues make good decisions (Maggie Farrell. 2016). In today's healthcare system, transparency is centered on patients. The patient was empowered to ask about treatment, risks, etc. Healthcare providers must provide information to ensure that suitable care is provided. Without trust and internal transparency among team members, it is impossible to have transparency with patients. In honesty among team members, no fear leads to collaboration, shared trust, and best practices across disciplines. Ultimately, the patient benefits at the end (Kaplan, 2018). Transparency can improve value by engaging nurses and healthcare organizations in quality improvement by appealing to their professionalism and stimulating competition among organizations or by providing patients with information that enables them to select nurses and health centers that offer higher-quality services, lower-cost services, or both (Austin, 2016).

Cultural issues are a major challenge in improving patient safety. There are five major concepts for creating environmental patient safety, one of which is practicing transparency as a must in everything (Gandi et al., n.d.). Dr Tedros Adhanom Ghebreyesus, WHO Director-General, said, ' No one should be harmed while receiving health care. However,", "We need a patient safety culture that promotes partnership with patients, encourages reporting and learning from errors, and creates a blame-free environment where health workers are empowered and trained to reduce errors." at least 5 patients die every minute because of unsafe care. (World

Health Organization [WHO], 2019). There is evidence of patient safety culture status in Arab countries, which is less than the highest standard because of the punitive way in which errors occur and the lack of open communication (Kidd, 2020). Reporting the incidence is seen as the center of patient safety improvement. It is important to learn from mistakes (WHO, 2020). Kaplan says, 'A culture of internal transparency does not come about overnight. ' There are many barriers to employees' fear of error repayment. Therefore, leaders must establish a culture of no blame. "Leaders must lead by example," Kaplan says. Starting from leaders is the most effective way to build a transparent culture of transparency (Kaplan, 2018). Incident report information is useful in action plans to prevent similar incidents from occurring in the same setting or different places by communicating the information, which is helpful in understanding the problem, research and improvement, and many other uses (WHO, 2020). Efforts to minimize injuries have led to patient safety movements, and the generally accepted definition of patient safety is the prevention and reduction of adverse outcomes or injuries stemming from healthcare processes (Alahmadi, 2009).

 Effective communication and teamwork are particularly important in the patient safety culture, as communication issues are the leading cause of preventable adverse events (Gluck,2012; Leonard et al., 2004). Improving nurses' attitudes toward transparency can improve healthy work environments and patient safety cultures. Transparency has historically been viewed as an essential component of effective organizations. Transparency is associated with higher levels of honesty, effective listening, and trust (Norman, Avolio, & Luthans. 2010).

This study aimed to describe the work-related factors that influence nursing transparency and patient safety. This study aimed to determine the factors that influence nurse transparency by identifying the factors that increase nursing transparency and patient safety. The findings from this study will add to the nursing work environment safe practice by recognizing the factors that affect nursing transparency in reporting errors and creating a new environment based on a blame-free environment and continuous learning from errors by providing a basis for a safe environment.

2. Methodology
2.1 Research Design
The research design of this study was quantitative, non-experimental, and descriptive correlational. This design was used to describe the relationship between nursing transparency in the work environment of nurses, nurses' superiors, and nurses' patients, as well as their relationship with the work environment between colleagues and patient safety without intervention from the researcher.

2.2 Sampling Procedure
The sample used in this study was non-probability quota sampling; for the sample to be representative, there will be no discrepancy in responses between males and females, age group, work experience, and department. The study population consisted of nurses in educational hospitals, approximately 800 nurses. The study sample was calculated using calculator.net. confidence interval of 95%, major error of 5%, population proportion of 50% and population size of 800; based on the calculator, the sample size is 260 nurses. The inclusion criteria for the study were male and female staff nurses with at least three years of experience working in direct patient care. Excluding criteria are Nurses working in intensive care units, hemodialysis, home healthcare, or outpatient clinics were excluded. Nurses who did not meet the inclusion criteria and who were not interested in participating in the study.

2.3 Instrument and scoring
The study utilized the "Practice Environment Scale of the Nursing Work Index" (PES-NWI), as proposed by Lake in 2002, comprising 31 items categorized into five subscales. These subscales include "Nurse Participation in Hospital Affairs" with 9 items, "Nursing Foundations for Quality of Care" with 10 items, "Nurse Manager Ability, Leadership, and Support of Nurses" with 5 items, "Staffing and Resource Adequacy" with 4 items, and "Collegial Nurse-Physician Relations" with 3 items. Responses were solicited using a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with the highest potential score being 4 and the lowest 1 for each subscale. Additionally, the study employed the "Transparency in Reporting Incident" tool by Bell et al. (2017), which contains 13 items evaluated on a ternary scale (yes, no, maybe). The tool differentiates between minor errors, serious errors, and errors in general based on the impact and outcome of the error.

The "Hospital Survey on Patient Safety Culture" (HSOPS) developed by the Agency for Healthcare Research and Quality (AHRQ) in 2017 was also integrated into the study to gauge perceptions of patient safety. This tool consists of 42 items spread across twelve domains, such as overall perceptions of safety, frequency of events reported, and teamwork within units, among others. It employs a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and also a frequency-based scale from 1 (never) to 5 (always). Items are primarily positively worded, with negatively worded items having their scores inverted to ensure consistency.

Prior to participation, online consent was secured from each participant, and an electronic questionnaire was disseminated. The questionnaire also collected sociodemographic data such as age, sex, nationality, marital status, years of experience, educational level, position, and hospital department. This approach ensured a comprehensive assessment of the work environment and patient safety culture among healthcare professionals.

2.4 Ethical considerations

In this study, ethical considerations were meticulously adhered to in order to protect the rights and well-being of participants. Prior to the commencement of the survey, all participants were required to provide informed consent after receiving a comprehensive explanation of the study's aims, methods, potential risks, and benefits. This process ensured that participation was voluntary and that participants were fully informed about the nature of the study. Privacy and confidentiality were rigorously maintained throughout the study. Participants' responses were anonymized, and personal identifiers were removed or altered before analysis to prevent any breach of confidentiality. Data was stored securely, accessible only to the research team, and will be used solely for the purposes outlined in the study objectives.

The study received ethical approval from the appropriate institutional review boards, ensuring compliance with national and international guidelines on ethical research conduct. This approval underscores the commitment to ethical standards in research, safeguarding participant welfare, and integrity in data collection and reporting. Furthermore, the study was conducted with a commitment to non-discrimination, ensuring equal treatment and access for all participants regardless of gender, age, or ethnicity. This approach not only enhances the ethical integrity of the study but also contributes to the robustness and generalizability of the findings.

2.6 Data analysis

Data analysis for the study was conducted using SPSS (Statistical Package for the Social Sciences), a robust statistical software ideal for managing and analyzing large datasets. The primary analysis involved descriptive statistics to summarize the sociodemographic characteristics of the sample and the main study variables. Mean scores, standard deviations, and percentages were computed to provide a clear picture of the data.

Further, inferential statistical tests were employed to examine the relationships between variables and to test the study hypotheses. Pearson correlation coefficients were calculated to determine the strength and direction of associations between nurses' work environments, transparency in reporting incidents, and perceptions of patient safety culture. Additionally, one-way ANOVA and t-tests were used to assess differences in transparency and patient safety perceptions across various demographic groups, including education level, years of experience, and work department.

The level of significance was set at $p<0.05$, ensuring that the findings were statistically significant and not due to random chance, thereby providing reliable insights into the factors influencing nursing transparency and patient safety.

3. Results

As shown in Table 1 in the present study, 81.7% of the participants were female, while 18.3% were male. The mean scores for the participants' age and experience were 34.15 and 8.42 years, respectively. More than half (68.2%) of the participants had a bachelor's degree, 54.4% were married, and more than two-thirds (81.5%) worked as staff nurses. Moreover, 80.3% of the participants were assigned to 2 – 5 patients, whereas 18.9% were assigned to 6 – 10 patients (Table 1). The results of this study showed that 31.0% of nurses were personally involved in no errors, 24.5% were personally involved in minor errors, and 14.0% were personally involved in near misses. On the other hand, none of the nurses in the present study declared that they did not report whether they were personally involved in any error, and 5.8% did not report if they had witnessed unreported minor errors. Moreover, 89.1% of the nurses in the present study declared that they had witnessed unreported serious errors, and 88.0% declared that they had been personally involved in serious errors (Table 2). The mean score for nurses' transparency in reporting incidents in the present study was 9.43 (range 7-21).

Table 1: Sociodemographic characteristics of the study sample (n = 269)

Variables	Number	Percentage (%)
Gender		
Male	48	18.3
Female	214	81.7
Age	34.15 ±7.54	
Experience	8.42 ±6.33	
Education		
Diploma	56	21.0
Bachelor	182	68.2
Master	29	10.9
Marital status		
Not married	118	45.6

Married	141	54.4
Positing		
SN	207	81.5
CN	47	18.5
Number of assigned patients		
2-5 years	191	80.3
6-10 years	45	18.9
>10 years	2	0.8

Regarding nurses' practice environment scale (Table 3&4), nurses in the present study had a higher mean score in "nursing foundations for quality of care" (3.02± 0.65), followed by "collegial nurse-physician relations" (2.97± 0.61) while they had the lowest score in "staffing and resource adequacy" (2.62± 0.82). Regarding nurses' perception of patient safety, nurses in the present study had higher mean scores in their perception of feedback and communication about errors (3.00± 0.58), followed by teamwork within units (2.99± 0.57), while they had the lowest perception score in hospital handoffs and transitions (2.51± 0.69).

Table 2: Transparency in Reporting Incidents

Item	No (%)	Not reported (%)	Yes (%)
Have you been personally involved in no error?	174 (69.0)	0 (0)	29 (31.0)
Have you been personally involved in Serious error?	234 (88.0)	8 (3.0)	24 (9.0)
Have you been personally involved in minor error?	195 (73.6)	5 (1.9)	65 (24.5)
Have you been personally involved in near miss?	211 (79.6)	17 (6.4)	37 (14.0)
Have you witnessed unreported serious error?	236 (89.1)	9 (3.4)	20 (7.5)
Have you witnessed unreported minor error?	217 (81.6)	26 (9.8)	23 (8.6)
Have you witnessed unreported near miss?	218 (84.2)	15 (5.8)	25 (9.7)
Mean ±SD	9.43 ±.38 (range 7-21)		

Table 3. Nurses' practice work environment

Item	Mean	SD
1. Adequate support services allow me to spend time with my patients.	2.73	0.87
2. Physicians and nurses have good working relationships	3.02	0.65
3. A supervisory staff that is supportive of the nurses.	2.98	1.41
4. Active staff development or continuing education programs for nurses.	3.12	0.65
5. Career development/clinical ladder opportunity.	2.93	0.78
6. Opportunity for staff nurses to participate in policy decisions.	2.86	0.86
7. Supervisors use mistakes as learning opportunities, not criticism.	2.82	0.85
8. Enough time and opportunity to discuss patient care problems with other nurses	2.83	0.81
9. Enough registered nurses to provide quality patient care.	2.52	1.06
10. A nurse manager who is a good manager and leader.	2.96	0.83
11. A chief nursing officer who is highly visible and accessible to staff	2.95	2.03
12. Enough staff to get the work done	2.41	1.02
13. Praise and recognition for a job well done.	2.78	0.92
14. High standards of nursing care are expected by the administration	3.08	0.80
15. A chief nursing officer equal in power and authority to other top-level hospital executives	3.00	2.01

16. A lot of team work between nurses and physicians.	2.94	0.74
17. Opportunities for advancement.	2.87	0.79
18. A clear philosophy of nursing that pervades the patient care environment.	2.91	0.72
19. Working with nurses who are clinically competent.	3.03	0.70
20. A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician.	2.94	0.76
21. Administration that listens and responds to employee concerns.	2.64	0.95
22. An active quality assurance program.	2.84	0.81
23. Staff nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).	2.81	0.83
24. Collaboration (joint practice) between nurses and physicians.	2.94	0.68
25. A preceptor program for newly hired RNs	3.20	0.64
26. Nursing care is based on a nursing, rather than a medical, model.	2.98	0.66
27. Staff nurses have the opportunity to serve on hospital and nursing committees.	2.92	0.71
28. Nursing administrators consult with staff on daily problems and procedures	2.71	0.88
29. Written, up-to-date nursing care plans for all patients.	3.01	0.70
30. Patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next.	2.96	0.74
31. Use of nursing diagnoses.	3.13	0.65

Table 4. Mean and SD of each sub-domain of practice environment scale

Sub-domain of practice environment scale	Mean± SD
Nursing foundations for quality of care	3.02± 0.65
Collegial nurse-physician relations	2.97± 0.61
Nurse manager ability, leadership, and support of nurses	2.89± 0.73
Nurse participation in hospital affairs	2.85± 0.75
Staffing and Resource Adequacy	2.62± 0.82
Overall Nursing Work Environment	3.03± 0.70

Regarding nurses' perception of patient safety, nurses in the present study had higher mean scores in their perception of feedback and communication about errors (3.00± 0.58), followed by teamwork within units (2.99± 0.57), while they had the lowest perception score in hospital handoffs and transitions (2.51± 0.69) [Table 5]. There was a significant correlation between nurses' work environments and their perceptions of the patient safety culture (p<0.05). An increase in nurses' work environments leads to a decrease in transparency in incident reporting. In addition, there was a significant correlation between nurses' transparency in reporting incidents and their perceptions of the patient safety culture (p<0.05). An increase in nurses' work environment leads to a significant decrease in their perception of the patient safety culture. Moreover, there was a significant correlation between nurses' transparency in reporting incidents and their work environment (p<0.05). An increase in nurses' work environment led to a significant decrease in their transparency in reporting incidents (Table 6).

Table 5: Nurses' perception about patient safety

Perception domain	Mean± SD
1. Overall perceptions of safety	2.67± 0.57
2. Frequency of events reported	2.86± 0.61
3. Supervisor/manager expectations & actions promoting patient safety	2.70± 0.60
4. Organizational learning –continuous improvement	2.95± 0.55
5. Teamwork within units	2.99± 0.57
6. Communication openness	2.74± 0.66
7. Feedback and communication about errors	3.00± 0.58
8. Non-punitive response to error	2.94± 0.65

9. Staffing	2.65± 0.69
10. Hospital management support for patient safety	2.80± 0.61
11. Teamwork across hospital units	2.67± 0.53
12. Hospital handoffs & transitions	2.51± 0.69
Total	2.77± 0.44

There was a significant difference in the mean score of nurses' transparency in reporting incidents with regard to their education (p<0.05), in which bachelor's degrees had significantly higher mean scores for transparency in reporting incidents than did master-degree nurses (p<0.05). However, there was no significant difference in the mean score of nurses' perceptions of patient safety with regard to the number of assigned patients, gender, position, and marital status (Table 7).

Table 6. Correlation between Nurse Work Environment and Patient Safety

Scale	Patient safety culture perception		Nurse work environment		Transparency in reporting incident	
	r	p-value	r	p-value	r	p-value
Nurse work environment	0.749	0.000	-	-	-0.286	0.000
Transparency in reporting incident	-0.173	0.007	-0.286	0.000	-	-

Pearson correlation

In addition, there was a significant difference in the mean score of nurses' perception of patient safety with regard to the number of patients assigned in favor of those who were assigned 2 – 5 patients (p<0.05). In addition, there was a significant difference in the mean score of nurses' perception of patient safety with regard to gender, in which female nurses had significantly higher mean scores for the perception of patient safety than males (p<0.05). Moreover, unmarried nurses had a significantly higher mean score for the perception of patient safety than married nurses (p<0.05). Furthermore, charge nurses had a significantly higher mean score for perception of patient safety than staff nurses (p<0.05). However, there was no significant difference in the mean score of nurses' perceptions of patient safety regarding their education (Table 8).

Table 7. Differences in the mean score of transparency of reporting incidents with regard to demographic factors

Transparency of reporting incidents	N	Mean	SD	F/t statistics	p value[a]
Education					
Diploma	51	1.26	0.37	3.376 (2, 239)	0.036[a]
Bachelor	162	1.40	0.52		
Master	29	1.19	0.36		
Number of assigned patients					
2 – 5 patients	173	1.29	0.43	0.139 (2, 214)	0.870[a]
6 – 10 patients	42	1.29	0.35		
>10 patients	2	1.14	0.20		
Gender					
Male	42	1.36	.45	0.331 (234)	0.741[b]
Female	194	1.33	.49		
Marital status					
Unmarried	111	1.29	0.41	-1.066 (232)	0.288[b]
Married	123	1.36	0.50		
Position					
Staff nurse	188	1.32	0.45	-1.780 (228)	0.078[b]
Charge nurse	42	1.46	0.55		

[a] One-Way ANOVA; [b] Independent Sample t test

Table 8: Differences in the mean score of nurses' perception of patient safety culture with regard to demographic factors

Perception of patient safety culture	N	Mean	SD	F/t statistics	p value[a]
Education					
Diploma	56	2.77	0.40	1.627 (2, 262)	0.199[a]
Bachelor	180	2.75	0.43		
Master	29	2.91	0.53		
Number of assigned patients					
2 – 5 patients	190	2.82	0.36	5.527 (2, 233)	0.006[a]
6 – 10 patients	44	2.62	0.46		
>10 patients	2	2.87	0.00		
Gender					
Male	48	2.64	0.52	-2.286 (258)	0.023[b]
Female	212	2.80	0.42		
Marital status					
Unmarried	117	2.87	0.39	-3.221 (256)	0.001[b]
Married	141	2.70	0.43		
Position					
Staff nurse	205	2.78	0.43	-0.216 (250)	0.829[b]
Charge nurse	47	2.79	0.38		

[a] One-Way ANOVA; [b] Independent Sample t test

There was a significant correlation between nurses' experience and their mean transparency score in reporting incidents and their perception of patient safety culture ($p<0.05$). An increase in nurses' age led to a significant increase in their transparency in reporting incidents, while an increase in nurses' age led to a significant decrease in their perception of patient safety culture. Moreover, there was no significant correlation between nurses' age and their mean transparency score in reporting incidents ($p>0.05$), while it was significant with their perception of patient safety culture ($p<0.05$). An increase in nurses' age led to a significant decrease in their perceptions of the patient safety culture (Table 9).

Table 9. Correlation between nurse's age, experience, and perception of patient safety culture and their transparency in reporting incidents

	Transparency in reporting incidents		Patient safety culture perception	
	r	p-value	r	p-value
Age	0.025	0.738	-0.234	0.001
Experience	0.148	0.047	-0.144	0.044

Pearson Correlation

4. Implications for nursing practice

The results of this study have a profound impact on nursing practice— especially in the areas of communication, workplace culture and safety. Firstly, transparency is underscored as pivotal to enhancing patient safety. Nursing administrators are advised through this study to see to it that they make creating an open environment a priority. A place where nurses can report incidents without fear should be established, staffed with individuals who undergo constant training and work under clear protocols which emphasize error reporting as a learning tool rather than a punitive measure. On another note, staffing levels and resource allocation play a

significant role in determining the quality and safety of care provided by nurses— which means burnout prevention programs need implementation along with support systems for nurses who require assistance to carry out their duties effectively. Lastly, establishing a cooperative atmosphere among nurses and doctors is of utmost importance. Promoting interdepartmental communication and respect between health care workers has the potential to produce good results for patients as well as a pleasurable workplace for nurses— which, in turn, fortifies the patient safety culture.

5. Conclusion

The findings of this study offer empirical evidence of the openness of incident reporting and nurses' perceptions of patient safety culture in relation to the nursing work environment. It is of utmost importance to emphasize particular aspects of the nursing work environment, such as sufficient staffing and resources, as well as nurses' engagement in the running of the hospital, to enhance the level of care delivered to patients. This study established a benchmark for an inadequate degree of openness in incident reporting, patient safety culture, and the nursing work environment. A significant association was found between the openness of reporting occurrences, the nurse work environment, and the culture of patient safety.

Conflicts of Interest: The authors declare no conflict of interest.
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