

Patient Safety Culture from Perspective of Nurses Working in ICU and CCU Wards of Al-Najaf Al-Ashraf Hospital

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Abstract

Background: The culture of patient safety is one of the most important factors in ensuring the quality of nursing care and is essential in enhancing patient safety in the health system.

Aim: This study aimed to determine the patient safety culture from the perspective of nurses working in the Al-Najaf Al-Ashraf Teaching Hospital.

Method: This descriptive cross-sectional study was conducted in 2021 on 167 nurses working in the electronic surveillance unit (ESU) and critical care unit (CCU) wards of the Al-Najaf Al-Ashraf Hospital. The subjects were chosen in a stratified manner with adequate allocation. Data were collected using personal information forms and a valid and trustworthy patient safety culture questionnaire. Data were analyzed by SPSS software (version 18). $P < 0.05$ was considered statistically significant.

Results: Independent t-test showed that among the demographic characteristics, gender and marital status had a statistically significant relationship with safety culture ($P < 0.05$). The variable of non-punitive response to events has the highest proportion of positive responses (73%). In contrast, the most negative response relates to supervisor performance and patient safety promotion expectations (43%). Also, 67% of nurses working in the Al-Najaf Al-Ashraf Hospital reported that patient safety is adequate. Notably, only 6.6% of respondents indicated that the level of protection is very weak.

Implications for Practice: According to the findings, the patient safety culture at Al-Najaf Al-Ashraf Teaching Hospital is appropriate from the perspective of nurses working in this hospital.

Keywords: Health care delivery, Nurses, Patient safety culture

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Introduction

Patient safety, one of the most important aspects of the quality of health services, refers to the prevention of patient injury during care delivery (1). Despite advances in healthcare, patient and patient-centered safety remain a concern in healthcare systems worldwide. In other words, medical errors worldwide are the significant threats to the health systems of all nations (2). Globally, the notion that the health system is insufficiently secure and requires betterment and modernization has been examined over the past two decades.

The development of patient safety, on the other hand, will assist healthcare organizations and providers in identifying situations that put patients at risk of harm and help them find a solution to eliminate it (3). Based on the available evidence, it is estimated that one per ten hospitalized patients in developing countries will sustain an injury. Even though statistics in developing countries are not always clear, this is much more likely (4).

In the current environment, many strategies, organizational structures, and work procedures of all types of hospital care actors are not aligned with patient's value creation. Patient safety is a criterion for achieving the desired results (5). The term "safety" refers to an environment in which the patient and other caregivers comply with safety standards, thereby reducing the risks associated with an action to an acceptable level. Patient safety is how a business administers care to patients (6). Error and exposure to risk can be examined from two angles: the particular method and the systematic method. The human element is responsible for eighty percent of the method's errors. Because different people will repeat errors until the system is corrected and the possibility of error is reduced to zero, eighty percent of the errors caused in the systematic method are system-related. The probability of errors and the associated risks are reduced by systematically evaluating events, reviewing them, and then searching for ways to prevent their recurrence (7).

The health system's complex and inflexible environment has rendered efforts to provide high quality services exhausting and impractical. Since professional groups are divided by barriers, cohesion has only occurred at the service's periphery (8). Changing these obstacles and overcoming them requires a cultural shift (9). Patient safety culture, change in the nursing work environment, while emphasizing the role of nurses in enhancing the quality of health services, manages resources that pose a risk to patient safety, including workforce, work processes, and organizational culture. Since instituting cultural shifts is the greatest obstacle to creating a health care system that prioritizes patient safety, patient safety should be one of the primary priorities of all organizations involved in health care delivery (10).

Researchers have identified various dimensions of the patients' safety culture. Some dimensions includes evaluation of patient safety attitudes, dimensions of teamwork atmosphere, job satisfaction, perceptions of management, safety atmosphere, working conditions, and identification of stress (11). Some researchers have measured patient safety culture based on the dimensions of expectations and management practices, organizational learning, teamwork between units, open communication, non-punitive response to error, staff, hospital administration, and patient's transfer and delivery (12). Some studies have utilized the free flow of information, continuous improvement, error reporting, patient's family participation, organizational safety leadership, occupational safety leadership, patient safety committee leadership, and access to equipment and rules (13).

According to literature, 3% to 17% of hospitalized patients experience an injury or complication, and approximately 30% to 70% of these incidents are preventable with conventional methods. Patient safety should be at the top of the organizational objective to prevent the harm caused by these errors and accidents (14). All organization members should recognize its significance and institutionalize it, so that patient safety becomes a part of the organization's culture. Culture is a collection of beliefs, ideas, and group values reflected in individual behavior (15). Patient safety culture is when everyone in the organization agrees that patient safety is the most important thing. It also includes an incorporated model of personal and managerial respect to the given common values, which aim at reducing the pain done to the patient care presentation (16). Implementing safety measures and precautions without a proper evaluation can increase costs and introduce new and unanticipated risks. Still, the information obtained from this evaluation can satisfy managers' long-term information needs. Patient safety culture is extremely important in health care systems, but staff, particularly nurses, frequently experience fatigue due to the system's continuous and

around-the-clock operation. As a result, patient safety culture decreases (17).

Culture reflects individuals' technical and social roles and functions in dire circumstances. Safety culture is the outcome of perceptions and amount, and it is undeniable that without establishing a safety culture in all health care facilities, there will be no sudden and lasting improvement in patient care (18). A team with a strong patient safety culture reduces the number of mistakes and their negative effects on the hospital. The perception and behavior of safety by nurses significantly impact promoting patient safety culture, as demonstrated by numerous studies (19). In addition, it has been discovered that nurses' attitudes toward the culture of patient safety influence clinical outcomes. The American Medical Institute also describes the role of nurses in enhancing health care quality (20).

Over the past few decades, global research has been conducted on the notion that the health system is not safe enough and must be improved and upgraded. Examining treatment personnel's perspectives can be useful when implementing promotion programs. Due to the major position of nurses in health care organizations, this study evaluated the patient safety culture from the nurses' side. This study was performed aimed to determine the patient safety culture of nurses at Al-Najaf Al-Ashraf Hospital due to the increasing relevance of patient safety and the lack of past studies in Najaf. This research highlights the strengths and drawbacks of the hospital's patient safety culture in Najaf.

Methods

This descriptive cross-sectional study was performed in 2021 on the nurses working in the electronic surveillance unit (ESU) and critical care unit (CCU) wards of Al-Najaf Al-Ashraf Teaching Hospital. Based on Cohen's power table, a power analysis using regression analysis with four independent variables was conducted and the results showed that a sample size of 167 participants was required based on a medium effect size ($f^2 = 0.15$), a power of 0.80 and significance level of 0.05 (21).

The inclusion criteria were full-time ESU and CCU ward nurses with at least six months of experience in these wards, interested to participate in the study and having a bachelor's degree or higher. Exclusion criteria were unwillingness to participate in the study and refusal to complete the questionnaire. The Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire consists of 42 questions, which are detailed in full below. Twenty minutes are necessary to complete the questionnaire. The questionnaire has been provided according to each employee's shift time. To collect data, researchers were present at the hospital on various days and distributed the questionnaires. The participants then completed the questionnaires and delivered them at the end of the same day shift. The collection of data took roughly three months.

The culture of safety in hospitals can be evaluated using a variety of measures. One of the most widely used questionnaires is the Hospital Survey on Patient Safety Culture (HSOPSC) provided by the Agency for Healthcare Research and Quality (AHRQ). The research tool used in this study was the HSOPSC questionnaire, developed by the AHRQ in 2004 (22). Accordingly, 42 items make up the 12 dimensions of the original questionnaire. Answering the questions is based on 5-point Likert scale, which scores agreement ("strongly disagree" to "strongly agree") and frequency ("always" to "never"). The research team members translated the questionnaire into Arabic using a forward-backward technique, and a panel of specialists in the fields of patient safety then reviewed the translation. It was then retranslated into English, and a native expert judged its linguistic validity. Additionally, the items' content validity index (CVI) and content validity ratio (CVR) were calculated. The items' necessity is specified by CVR, while the questions' ease of use, applicability, and clarity are demonstrated by CVI. Cronbach's alpha was estimated for internal consistency analysis. The questionnaire has a Cronbach's alpha of 0.816. In this study, Cronbach's alpha values of the 12 dimensions varied between 0.54 and 0.91. Moreover, the Guttman split half coefficient was calculated to be 0.74 and the Spearman-Brown coefficient was 0.75.

This questionnaire has 42 questions which measure 12 different dimensions of safety culture. These dimensions include frequency of incident reporting (3 questions), employees' overall understanding of safety (4 questions), manager supervisor performance and expectations regarding safety improvement (4 questions), organizational learning (3 questions), and teamwork within the unit (4

questions), open communication channels (3 questions), communication and providing feedback on errors (3 questions), non-punitive responses regarding errors (3 questions), staff issues (4 questions). In addition, there were two questions regarding how respondents generally view patient safety in their unit and how many error reports they have failed in the past year. In addition, this questionnaire has positive, neutral, and negative scales; the positive scale is extremely positive, the neutral scale is unrelated to the theoretical answer, and the negative scale is related to the opposite and extremely opposite responses. The questionnaire guide divides the safety culture into three categories based on the percentage of positive answers to each question: high (more than 75%), medium (75% to 50%), and low (less than 50% of answers, consensus). To comply with ethical considerations, the researchers explained the purpose of the study to the nurses. Involvement in the research was free, and nurses' permission was acquired before conducting the study. The nurses completed the questionnaires anonymously and were assured that their responses would remain confidential.

Data were analyzed by SPSS software (version 18). Independent t-tests and analysis of variance were used to determine the significance of each demographic variable. A logistic regression model was used to evaluate the impact of different variables on patient safety culture (outcome variable). $P < 0.05$ was considered statistically significant. The strength of associations was estimated by using odds ratios with 95% confidence interval (CI).

Results

In this study, 75% of the participants were female with mean age of 37.62 ± 7.19 years. Table 1 showed the demographic information of the studied nurses. Independent t-test examined the characteristics of gender, marital status, educational attainment, and employment status. The age and job experience were analyzed using variance analysis (ANOVA). According to the table 1 and based on independent t-test, among the demographic characteristics, gender and marital status variables had a statistically significant relationship with safety culture ($P < 0.05$).

Table 2 presented the mean of different patient safety culture dimensions from the perspective of nurses. The ranges for the mentioned dimensions are 3-15 or 4-20, as indicated in the table 2.

Table 3 displayed the results for each of the 12 patient safety dimensions separately. The highest proportion of positive responses was associated with the non-punitive response to the dimension of the event (73%). In comparison, the most negative response was related to supervisor's performance

Table 1. Demographic characteristics of the subjects

Characteristics	Variable	Frequency (%)	Mean \pm SD*	P-value
Gender	Female	126 (75%)	127 ± 11.09	0.026**
	Male	41 (25%)	129 ± 9.82	
Marital status	Single	95 (57%)	134 ± 10.43	0.017**
	Married	72 (43%)	133 ± 9.57	
Educational attainment	Bachelor	119 (71%)	131 ± 10.18	0.814**
	Master	48 (29%)	132 ± 11.04	
Age	<35	62 (37%)	138 ± 9.53	0.096***
	35-45	84 (50%)	136 ± 8.12	
	>45	21 (13%)	138 ± 9.71	
Job experience	<5	38 (23%)	129 ± 9.07	0.163***
	5-10	43 (26%)	128 ± 9.43	
	11-15	67 (40%)	128 ± 10.85	
	>15	19 (11%)	128 ± 9.79	
Employment status	Official	91 (54%)	131 ± 11.03	0.761**
	Contractual	76 (46%)	132 ± 11.46	

*SD = Standard deviation

**Independent t-test

***ANOVA

Table 2. Values related to different dimensions of patient safety culture from the perspective of nurses

Different dimensions of patient safety culture	Mean±SD*	Normalized (Mean±SD*)
1- Intra-departmental teamwork (score range 4-20)	14.19 ± 3.16	63.69
2- General understanding of patient safety (score range 4-20)	13.04 ± 1.78	56.5
3- Management support for patient safety (score range 3-15)	9.41 ± 1.89	53.41
4- Communication and providing feedback on errors (score range 3-15)	10.07 ± 2.52	58.92
5- Supervisor's performance and expectations regarding patient safety promotion (score range 4-20)	11.09 ± 2.73	44.31
6- Organizational learning continuous improvement (score range 3-15)	10.57 ± 2.13	42.08
7- Teamwork between organizational units (score range 4-20)	13.48 ± 1.89	59.25
8- Employee issues (score range 4-20)	14.03 ± 2.26	62.69
9- Open communication channels (score range 3-15)	10.98 ± 2.07	66.5
10- Incident reporting frequency (score range 3-15)	10.29 ± 1.94	60.75
11- Non-punitive response to events (score range 3-15)	10.84 ± 2.14	65.33
12- Information exchange (score range 4-20)	12.03 ± 3.51	66.92

*SD = Standard deviation

Table 3. Nurses' response to performance on safety culture

Different dimensions of patient safety culture	Frequency (%)			Performance about safety culture
	Positive	Neutral	Negative	
1- Intra-departmental teamwork	119 (71%)	26 (16%)	22 (13%)	High
2- General understanding of patient safety	73 (44%)	49 (29%)	45 (27%)	Low
3- Management support for patient safety	89 (53%)	50 (30%)	28 (17%)	Medium
4- Communication and providing feedback on errors	71 (43%)	56 (34%)	40 (23%)	Medium
5- Supervisor's performance and expectations regarding patient safety promotion	52 (31%)	44 (26%)	71 (43%)	Low
6- Organizational learning continuous improvement	92 (55%)	53 (32%)	22 (13%)	Medium
7- Teamwork between organizational units	68 (41%)	62 (37%)	37 (22%)	Low
8- Employee issues	101 (60%)	32 (19%)	34 (21%)	Medium
9- Open communication channels	86 (51%)	52 (31%)	29 (18%)	Medium
10- Incident reporting frequency	57 (34%)	66 (40%)	44 (26%)	Low
11- Non-punitive response to events	122 (73%)	35 (21%)	10 (6%)	High
12- Information exchange	64 (38%)	36 (22%)	67 (40%)	Low

and expectations regarding patient safety promotion (43%).

Also, Table 4 showed the results of the multivariable logistic regression model and putting independent variables into this model.

Table 4. Logistic regression model results

Different dimensions of patient safety culture	β coefficient	Odds ratio	95% confidence interval	P-value
1- Intra-departmental teamwork	-1.376	0.349	40-46	0.001
2- General understanding of patient safety	0.388	0.412	53-59	0.043
3- Management support for patient safety	-1.163	0.351	36-42	0.021
4- Communication and providing feedback on errors	-1.287	1.204	53-57	0.028
5- Supervisor's performance and expectations regarding patient safety promotion	-0.214	0.783	62-80	0.195
6- Organizational learning continuous improvement	1.323	2.143	61-67	0.014
7- Teamwork between organizational units	0.546	0.339	58-64	0.374
8- Employee issues	-1.193	0.452	29-34	0.009
9- Open communication channels	1.272	0.506	57-64	0.038
10- Incident reporting frequency	-0.359	1.127	66-72	0.041
11- Non-punitive response to events	-1.384	0.214	36-42	0.001
12- Information exchange	-0.143	0.326	50-57	0.038

Nagelkerke R²=0.147

Table 5. The general assessment of safety culture

Status of safety culture	Frequency (%)
Very weak	11 (6.6%)
Weak	26 (15.5%)
Acceptable	113 (67.7%)
Good	13 (7.8%)
Excellent	4 (2.4%)
Total	167 (100%)

According to the results of Table 5, 67.7% of nurses at Al-Najaf Al-Ashraf Hospital reported that patient safety was satisfactory. Notably, only 6.6% of respondents indicated that safety is very weak.

Discussion

The present study was performed aimed to investigate the patient safety culture from the perspectives of nurses working in ESU and CCU wards of Al-Najaf Al-Ashraf Hospital. The two dimensions of non-punitive response in the event of errors and intra-departmental teamwork were identified as the strengths of a patient safety culture based on the 12 dimensions of patient safety.

In the research by Akologo et al. (23), ward teamwork received the highest score compared to other aspects of patient safety culture. Consistent with the present study, cooperation between organizational units and the supervisor's performance and expectations regarding the promotion of patient safety received the lowest score on the safety culture dimensions. In the study of Saudi hospitals, Alahmadi (24) found that teamwork within the units is the most important part of the safety culture. He also reported that not punishing people who make mistakes and sharing information about patients were the least important parts of the safety culture, which is inconsistent with the results of the present study. Liang (25) stated that safety cannot be established as a treatment objective without the assistance and support of the highest level of management. Andersson's (26) study also demonstrated that a large number of patients had received substandard care. The study by Kohn et al. (27) revealed that a lack of reporting errors due to fear of punitive responses, failure to use errors as a source of learning, and repetition of errors contributed to the inadequacy of the patient safety culture in all hospitals studied. El-Jardali et al. (28) found that in Lebanese hospitals, 60% of employees said they had not reported any incidents in the past year. If medical errors are not being reported, analyzed, and tracked in the system, this could be one of the contributing factors endangering patient safety. Roux and Halstead (29) also concluded that the rational use of the non-punitive approach for incident investigation is one of the hardest parts of switching care to new ways of ensuring that the patients are safe. Traditional methods of placing blame on someone for an accident that was not their fault have become increasingly difficult (30). To provide the necessary conditions to strengthen the patient safety culture, the hospital should encourage teamwork among nurses to promote cooperation in the ward.

In the present study, among the demographic characteristics, gender and marital status had a statistically significant relationship with safety culture. Women and married people reported higher patient safety. It seems that women who participated in this study were more sensitive to patient safety than men, and as a result, they observed a greater culture of patient safety. As other studies have not confirmed this result, additional research is required to determine why female nurses are more concerned than male nurses. Based on the findings of this study and other studies in this field, hospital administrators should pay more attention to the hospital's patient safety culture to maintain and enhance it for nurses.

One of the limitations of this study is that only ESU and CCU wards of the hospital were examined. Another limitation is that only the nurses' views were assessed. It is proposed that comparative research be conducted at other medical centers and the findings be compared. It is also recommended to use educational initiatives to enhance the patients' safety culture.

Implications for practice

Patient safety-centered accreditation is one of the most critical factors in health systems and hospital accreditation programs. In this regard, management programs should prioritize safety-oriented culture development. Nursing managers can use the findings of this study to promote nurses' awareness of

patient safety culture through workshops and encourage nurses' non-punitive response to error and teamwork within the ward. When nurses are given more non-punitive answers to their mistakes and do more group work in the community, they face the challenge of improving the culture of patient safety in clinical nursing. The results of the present study showed that patients' safety culture in the ESU and CCU departments of the Al-Najaf Al-Ashraf Hospital is satisfactory.

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Conflicts of interest

The authors declared no conflict of interest.

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