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Nursing Care Quality in the Cardiac Care Unit: A Cross-Sectional Study

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Abstract

Background: Health care is inevitably associated with an increased risk of patient safety. Due to the complexity of attitude of care, the safety culture and the care of patients play a major role in safe care.
Objectives: The present study aimed to assess the quality of safe nursing care in the Cardiac Care Unit.
Methods: This is a descriptive study conducted in the Cardiac Care Unit of Baqiyatallah Hospital in 2018. All nursing staff working in the cardiac care unit comprised the sample of the study. Safe nursing care was measured using a tool designed by Rashvand et al. in 2015. Data were analyzed by SPSS version 21. This study was approved by the ethics committee in BMSU.
Results: The results showed that the majority of the research sample (55%) was male with an average age of 42.85 ± 9.66 years and a working experience of 19.05 ± 8.4 years. The mean score of the ethical dimension was 17.47 ± 1.92.
Conclusions: The results of this research can be used in educational planning at the undergraduate level of nursing to educate the students from the beginning of education, especially in the first semester, regarding patient safety, in particular, ethics, and safe care, in order to make it easier to use in the future and to reduce the need for in-service training programs. This develops safe care in healthcare settings.

Keywords: Quality, Safe Care, Nursing

1. Background

Nurses play a vital role in the health system. This is because a high level of competence in nursing care is necessary to provide patient safety and safe nursing care to patients (1-3). Therefore, evaluating the quality of service can help us to improve the allocation of resources and provide useful interventions. In addition, the quality assessment of health care improves the regulation of health care and ethical health care priorities based on care standards (4, 5). Quality improvement requires a systematic screening program to include all hospital staff and focus on quality through activities based on evidence such as Clinical Audit. As for many organizations, quality improvement program is a priority for health care system (6, 7). CCU is one of the bottlenecks for hospitals to reduce mortality; since this ward must have employees with high skills and advanced equipment for better care, paying attention to the quality of care and safety in this ward is very important (8). On average, in critical wards, 1/7 error occurs per patient per day, of which 29% result in serious injuries or death (9). In addition, the occurrence of human error in the intensive care unit is critical to the particular circumstances of the patients and is directly related to the health and treatment process (10). In other words, clinical management is an integral part of clinical management and is a reliable tool for assessing the quality of care provision (4, 8). The importance of observing safe nursing care comes from the pain that patients and their families endure due to mistakes made by the members of the treatment team and the starting point of this suffering is the stress of patients for paying hospital fees, which increases with prolonged hospitalization. The complications are not caused by the initial illness of the individuals that have led them to the healthcare team but are due to the mistakes of individuals such as the physician and the nurse, which ultimately entails the material and spiritual costs of payment to the patient (11). Kimiaimehr et al. (2014) in a research titled "the relation between medical audit performance and enhancement of nursing care qualities in surgery unit" showed that there was not a significant relationship between clinical audit performance and controlled cares, primary care (P = 0.69) and drug actions (P = 0.18). There was a significant relationship between clinical audit performance and working with electroshock (P = 0.02), oxygen therapy (P = 0.05), CPR (P = 0.04), controlling and monitoring (P = 0.03), patient and companions education (P =

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0.03), the process of avoiding drug mistakes (P = 0.01), and client glorification (P = 0.03) (12). Tabrizi et al. (2015) in a research titled "Clinical audit process: hand hygiene in nurses", showed that the total number of situations of pre-intervention was 126 that increased to 168 situations after clinical audit (post-intervention). The total rate of compliance with the standard hand hygiene in pre-intervention was 71.1% that improved after the implementation of the intervention (73.59%) (13). In addition, the findings reported by Poortaghi et al. (2015) in a research titled "Findings from a Nursing Care Audit Based on the Nursing Process: A Descriptive Study" showed that the compliance rate with nursing process indicators was 79.71 $\pm$ 0.87. The mean compliance scores did not significantly differ by education level and gender. However, the overall compliance scores were correlated with nurses' age (r = 0.26, P = 0.001) and work experience (r = 0.273, P = 0.001) (14). In another research titled "Audit of Endotracheal Tube Suction in a Pediatric Intensive Care Unit", Davies et al. (2017) reported the outcomes of a clinical audit examining criteria used in clinical practice to rationalize endotracheal tube (ETT) suction, and the extent of which these criteria matched the Endotracheal Suction Assessment Tool (ESAT). A retrospective audit of patient notes and analyses of criteria documented by pediatric intensive care nurses were undertaken to rationalize ETT suction. The median number of documented respiratory and ventilation status criteria per ETT suction event that matched the ESAT criteria was 2 [Interquartile Range (IQR) 1-6]. All criteria listed within the ESAT were documented in the reviewed notes. A direct link was established between criteria used for the current clinical practice of ETT suction and the ESAT. The ESAT, therefore, reflects documented clinical decision - making and it could be used as both a clinical and an educational guide for inexperienced pediatric critical care nurses. Modification to the ESAT (15). A literature review on published papers so far in other parts of the world suggests that over the past decades in developed countries, significant changes have been made in the field of patient safety and quality of care. For this reason, the nursing system of these countries is seeking ways to increase nursing competence, quality of care, and patient safety. In Iran, the need for paying attention to nurses' clinical competence has become more and more felt in recent years because health service providers, due to increased awareness and public expectation of receiving quality services, will inevitably increase the efficiency of human resources employed in the system. At present, in Iran, considering the importance of the issue, it seems that nursing education focuses on nursing attaining a high level of competence in nursing care in order to introduce the patient's safety and nursing care safety in nurses. Providing safe nursing care requires identifying criteria. Ideally, considering the importance of this issue, attention should be paid to the dimensions of safe nursing care from both clinical and educational viewpoints to provide a more complete picture of patient safety and the ways of providing safe nursing care (16).

The aim of the present study was to evaluate the performance of nurses in safe clinical care clinically and therefore to demonstrate how well the cardiac intensive care unit has been successful in providing services and achieving safe nursing care. Therefore, the present study aimed to assess the quality of safe nursing care in the cardiac care unit.

2. Methods

This is a cross - sectional study in the Cardiac Care Unit of patients in Baqiyatallah Hospital in 2017. All nursing staff working in the cardiac care unit comprised the study sample. Safe nursing care was assessed using a tool designed by Rashvand et al. in 2015, which included 41 questions that evaluated patient safety on a 5-point Likert scale. The questionnaire was completed by the supervisor confidentially for each staff. The aforementioned tool was first designed and presented by a Ph.D. Nursing student, Mrs. Farnoosh Rashvand, in 2015 in a combined study (17). This tool was reviewed by Rashvand et al. in 2015, and the validity of the structure and its content was confirmed and its reliability using the internal consistency method gave the value of 0.97. This scale has five dimensions including: 1) nursing skills (16 questions), 2) Psychological safety (8 questions), 3) Physical safety (8 questions), 4) Teamwork (5 questions), and 5) Ethics (4 questions). Data were analyzed by SPSS version 21. This study was approved by the ethics committee in BMSU with code IR.BMSU.REC.1396.182. In addition, this work received an IRCT code (IRCT20091118002730N10) from this center.

3. Results

In a sample of 40 nurses working in cardiac care units, there were 22 men and their average age was 42.85 $\pm$ 9.6. The demographics of nurses are shown in Table 1. The table shows the different dimensions of the patient's safety system in the cardiac care unit. The results showed that the score of all dimensions except the ethical dimension is in the optimal level. Table 3 shows the average, minimum, and maximum of the ethic scores.

4. Discussion

Considering the importance of patient safety and the quality of nursing care, this study aimed to assess the qual-

Table 1. Personal and Demographic Characteristics of Nurses Working in Cardiac Care Units

Variable	Frequency (%)
Age, y	
20 - 30	7
31 - 40	7
41 - 50	18
51 - 60	8
Sex	
Female	18 (45)
Male	22 (55)
Nursing work experience	
5 - 10	8 (20)
11 - 20	15 (37.5)
21 - 30	15 (37.5)
31 - 40	2 (5)
Work experience in CCU	
1 - 5	11 (27.5)
6 - 10	8 (20)
11 - 15	15 (37.5)
16 - 20	6 (15)
Employment status	
Official	27 (67.5)
Contractual	11 (27.5)
Buy service	2 (5)
Hours of work	
100 - 150	5 (12.5)
151 - 200	24 (60)
201 - 250	6 (15)
251 - 300	2 (5)
301 - 350	3 (7.5)
Level of education	
Master science	33 (82.5)
Bachelor	7 (17.5)

ity of safe nursing care in the cardiac care unit. Dimensions of safe nursing care including nursing skills, teamwork, psychological safety, and physical safety were favorable although the ethical dimension was weaker than the other dimensions. In line with the results of this study, Abdi and colleagues in 2012 conducted a study entitled "Employee perception of the patient safety culture" in three teaching hospitals. The findings of the research showed that the safety culture score in each of ten dimensions of safety culture and the two dimensions of the consequences of the existence of a safety culture was low and moderate. Meanwhile, the dimensions of the non-contributory response to errors and teamwork among the units of the hospital received the lowest score while the teamwork within the unit received the highest score. The findings of this study showed different dimensions of safety culture in these hospitals need to be improved. Accordingly, in this study, suggestions on how to promote safety culture in treatment centers were provided to managers and relevant authorities (18). While the study on the quality of care provided at Baqiyatallah Hospital showed that all dimensions of patient safety were favorable, the ethical dimension was moderate. Kimiaemehr et al. (In 2014) conducted a study entitled "The Relationship between Clinical Examination Performance and Nursing Improvement in the surgical unit". The results showed that there was no significant relationship between clinical audit function and managed care, comprehensive care, primary care, and drug interventions. Other areas such as oxygen therapy, CPR, control and monitoring, patient education and fellowship, prevention of drug errors, and customer reciprocal design were significantly different (12). The results of this study were consistent with the current study. Therefore, the study on nursing skills was in the desired level in cardiac care units. The difference with the present study was a distinction between different skills areas such as ectopic, control and monitoring, etc. that could be compared precisely with the study. In 2015, Hamid Mekak Pak and colleagues in Iran conducted a study entitled "The Relationship between Nurse Communication Skills and the Patients' Safety Status" in 155 nurses in critical ward of teaching and non-teaching hospitals in Urmia. The results of the study showed that there was a significant difference between non-verbal communication skills among nurses working in ed teaching and non-teaching hospitals, but in non-verbal skills, this relationship was not significant (19). Compared to the present study, it can be said that in Baqiyatallah Hospital, communication skills were good among quality care dimensions, which showed that nursing staff had a good relationship with colleagues and patients and this does not require an intervention to improve after quality of care. In another study, the effect of the clinical audit process on the level of tracheal suctioning skills in nurses and anesthetized technicians in 2015 was investigated by Farsi et al. The results showed that there was no significant difference between the two groups before the study, but there was a significant difference between the two groups after the intervention (17). Compared to the present study, it can be said that in the current research, the research samples were in the ICU, there was intervention and control groups, and the work was done on one dimension of safe care and the nursing skill was

Table 2. Specifications of Quality of Care

Dimensions	Number of Questions in Each Dimension	Average	Total Score	The Percentage of the Score
Nursing skills	16	74.35	90	82.2
Psychological safety	8	37	40	92.5
Physical safety	8	37.1	40	92.75
Teamwork	5	21.6	25	85.6
Ethics	4	12.9	20	64.5

Table 3. The Ethical Dimension of Safe Nursing Care

Ethical Dimension Score	Average	Standard Deviation	Minimum	Maximum
Medication error	3.3	0.88	2	5
Teamwork	5.85	1.79	4	10
Informed consent	3.57	0.90	2	5

suctioning, while the present study considered different dimensions, safe care was the ultimate goal of all members of the health team and it seems to be more comprehensive. Johnson et al. conducted another study in 2010 referred to as Nursing and Midwifery Content Audit Tool: Short Nursing Accountability Audit Instruments for monitoring the quality of 200 nursing registries to audit recent nursing documents. This tool was used to record patient health conditions, use objective information, and provide logical presentation. Patient's response to treatment and nursing interventions included cases requiring attention. This proposed evidence-based audit is to improve nursing documentation (20). Compared to the present study, although the above study monitored the nursing documentation, safe-care referral was not extracted from the documentation to be considered. Another study was carried out by Howell in 2013 entitled Pulse Oximeter: An Audit for Understanding Nurses and Health Team Workers. In this study, 50 employees of public hospitals, including trained and untrained workers, were investigated. The questionnaires were provided to these people, as well as the scenarios for the response. The results indicated that the staff was deficient in pulse oximetry. There was also no more knowledge in this area in the trained group versus untrained one. Therefore, frequent audits were needed to understand the level of knowledge and skills of employees (21). It can be said that the research methodology was consistent with this research methodology. Therefore, the results of the study showed that nursing staff in the CCU have enough knowledge about the patient's safety dimensions such as nursing skills, physical, mental, communication, and ethical dimensions, and there is no need to intervene in this regard. In the other study about the ethical dimension, Farasatkish et al. (2015) (22) evaluate the ethical sensitivity and its relationship with demographic characteristics in critical care nurses of Shahid Rajaee Heart Center in Tehran. The mean score of nurses' ethical sensitivity was 70.85 $\pm$ 7.73 with the highest scores in the domain "knowledge of how to communicate with patients" while the lowest score was related to the domain "the level of professional knowledge." Among the demographic variables, there was a statistically significant correlation between age, average weekly work hours, and years of working and ethically sensitive nurses; by an increase in age and experience, the moral sensitivity also increased, while the ethical sensitivity decreased as a result of the increase of average weekly work hours. Compared to the present study, both studies were reported the ethical dimension at a moderate but acceptable level. Overall, the results of the study in relation to the purpose of the research showed that the quality of safety care in all dimensions is ideal and in the ethical dimension is moderate but acceptable.

4.1. Conclusion

The safety status was favorable and did not require any action to be improved. However, the results of this research can be used in educational planning at the undergraduate level of nursing to educate students, from the beginning of education, especially in the first semester, regarding patient safety, in particular, ethics, and safe care, in order to make it easier to use in the future and to reduce the need for in-service training programs. For nurses working, specialist caregivers can also develop safe care in healthcare settings.

Footnote

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