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Research Article

Nurses' Perspectives About Reasons for Not Reporting Medical Errors in Educational Hospitals, Ahvaz, Iran

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Abstract

Background: Reporting of medical errors is an approach to identify and prevent errors in hospitals.

Objectives: The purpose of this study was to determine the barriers to error report from the nurses' viewpoints in Ahvaz Educational hospitals.

Methods: This descriptive-analytical study was done on 206 nurses working in educational hospitals of Ahvaz selected by stratified random sampling. The measurement tool used in this study was a researcher-made questionnaire, which its validity was confirmed by content validity, and its reliability using Cronbach's alpha was calculated to be 0.84. Data collection was performed from April to June 2019.

Results: The causes of failure to error reporting included educational, attitudinal, process, structural, and managerial factors. The total mean score of the factors causing non-reporting of errors was 3.88 ± 0.53, which was between 3 and 4 ("important"). Also, educational, attitudinal, and process factors were reported as "very important" for nurses. Structural and managerial factors were rated reported "important" by nurses over 90% of nurses rated educational, attitudinal, and process factors as important and very important, and more than 70% of them rated structural and managerial factors as important and very important. Nurses with different levels of education or work experiences had different scores in reasons for not reporting errors.

Conclusions: Some educational, attitudinal, process, structural, and managerial factors were critical reasons for not reporting errors. In order to reduce same errors in the future and promoting health care quality, officials need to develop strategies to remove barriers and consider the reasons for not reporting errors in nurses' educational programs using team-based and forward-looking approaches, adopting an impersonal and systematic approach, and finally, modifying error reporting rules.

Keywords: Error Reporting; Nurse; Hospital; Ahvaz

1. Background

Patient safety as one of the main components of the quality of health services means avoiding any injury to the patient during the provision of health care (1). Among the dangers that occur in hospitals and threaten the safety of patients and staff are medical errors (1). Receiving safe care services is one of the basic rights of the patient and is one of the main tasks of the health care service and system (2).

Error is an operational term by which the planned chains of physical and mental activities fail to achieve a goal (3). Errors can occur in any care environment, including hospitals, health centers, clinics, and laboratories; thus, they can adversely affect patient safety. There are different classifications of errors, including technical errors, systematic errors (e.g., administrative and process errors), and human errors (e.g., medication, diagnosis, and treatment) (4).

Nursing errors, such as errors in medication or patient care, are known problems in the health care system, and such errors are important in healthcare because, unlike mistakes in other occupations, they may have irreparable consequences (5). Nursing errors have led to several injuries and consequences resulting from medical malpractice and even death in the United States, and over the past decade, there have been approximately 2,000 deaths due to nursing errors in the United States (6). It was reported

that injuries due to medication errors in outpatient clinics cost the recipients approximately $887 million; however, salary, productivity reduction cost, and other costs were not calculated (7).

Currently, awareness about the importance of medical error and its implications for the quality of health services and patient safety has been increased (8). Reporting errors is known as the basis for maintaining and promoting patient safety (6). Reporting is effective in reducing the adverse effects of error, reducing the financial costs of the organization and the patient, timely healing of the injury, shortening the length of stay in the hospital, and preventing similar errors in the future (9). Reporting errors is one of the duties of nurses to plan accordingly. When errors are not reported, system problems will remain unresolved, and management, ethical, and therapeutic decisions will face and create problems (7). Action to reduce errors by health care providers requires information on the nature of the errors, which can be obtained through the reports of members of the treatment team. In this regard, Manjoghi et al. (10), in a study, examined the report of hospital errors by nurses and the results showed that only 62% of nurses are ready to report these errors (10). Numerous studies have implied that there are no reliable statistics about the number and types of errors in the hospitals in Iran, and the increase in referral cases of complaints from doctors and nurses to the Islamic Republic of Iran Medical Council (IRIMC) and courts is evidence of this claim (11).

Nurses, as service providers on the front lines of hospitals, are responsible for reporting these errors. They can play an important role in reporting the error of the health care system as a cause of the medical error, a partner, or an observer of error (12). A significant proportion of medical errors are errors made by nursing staff when providing care services (13), while the few nurses report medical errors for various reasons (14). Reporting human errors in health care organizations is often accompanied by embarrassment and fear of punishment (12). Accordingly, the most important obstacle to reporting was the fear of individual and legal charges. Such mistakes can highlight a lack of attention, motivation, and adequate training, and therefore, the tendency to hide them. Estimates show that 50% - 96% of side effects are never reported, while about half of them are preventable (15).

In classifying the causes of death, healthcare-related errors are one of the top ten causes (16). Although the causes of errors have been reported in many studies, there is limited knowledge about the barriers to report nursing errors. Nurses play an important role in improving patient safety. Compared to other members of the health care team, nurses spend more time with patients and are more involved in ongoing patient care. Such a relationship can put nurses at greater risk of error (15). The ultimate goal of the nursing profession is to ensure the recovery and health of humanity, indicating the need to report errors to achieve the therapeutic goals because misrepresentation of clinical findings to the patient is an important ethical and necessary aspect of care with several benefits for the patient, the health care provider, and health service organization (17). In order to identify nursing errors better, the non-reporting in this area should be examined, and action should be taken to eliminate them (15). The four main barriers to error reporting include fear, management attitude, system-related barriers, and perception of error by the staff (16). Therefore, to increase the reporting of ethical and managerial errors, it is necessary to understand nurses' perspectives, reporting barriers, and possible ways to increase the report of these errors because health care providers believe that reporting errors in the workplace improves their performance and increases patient safety and as a result, it will reduce the error rate (17).

2. Objectives

Because the occurrence of errors during the provision of nursing care endangers the safety and health of patients, efforts should be made to prevent and reduce them. This effort not only saves the lives of many patients but also saves patients from the considerable expenses of treatment because of the consequences of these errors. Due to the importance of error reporting in promoting safety and reducing medical errors, this study was conducted to determine the causes of non-reporting from the perspective of nurses.

3. Methods

The data of this descriptive-analytical study were collected from April to June 2019. The study population consisted of 206 nurses of Ahvaz educational hospitals calculated using the following formula $(d = 2 \,\&\, \delta = 14.62,\ z^2_{1-\alpha/2} = 1.96)\ n = \frac{\left(z^2_{1-\alpha/2}\delta^2\right)}{d^2}$. Accordingly, 60 nurses were selected from Imam Hospital, 51 from Golestan Hospital, 33 from Razi Hospital, 25 from Baqaei Hospital, and 32 from Abuzar Hospital. The sampling in each hospital was conducted randomly. After explaining about the study and obtaining informed consent from the nurses, the researcher gave them the questionnaires, and the questionnaires were taken back on the same day after completion.

The instrument used was a two-part questionnaire, including demographic information, and a researcher-made questionnaire that was designed using a review of valid texts and articles and the opinion of professors. Demographic questions included age, gender, marital status, employment status, work experience, and educational level. The researcher-made questionnaire consisted of 36 items, including 5 questions for education, 9 questions for attitude, 10 questions for the process, 4 questions for structure, and 8 questions for management. In each question, a maximum score of 5 indicated strongly agree, and a minimum score of 1 indicated strongly disagree. The average score of the questionnaire was evaluated as fol-

lows: score 1 - 2 “less important”, 2 - 3: “unimportant”, 3 - 4: “important”, and 4 - 5: “very important”. A three-point spectrum was used to confirm the content validity based on the Lavashi model as follows: “necessary”, “useful but not necessary”, and “not necessary”. The questionnaire was provided to 36 health care management specialists and nurses to confirm the content validity. Content validity ratio of 0.78 $CVR = \frac{nE-\frac{N}{2}}{\frac{N}{2}}$, and validity index of 0.86 ($CVI = \frac{\sum CVR_{Retained\ numbers}}{Retained\ numbers}$) were also calculated. Qualitative method was used to evaluate face validity. The qualitative face validity was determined using a panel of 10 experts to find the level of difficulty, inconsistency, the ambiguity of phrases, or no accurate meaning of the words whose opinions were applied in the questionnaire. To assess the reliability of the questionnaires, a pilot study of 40 people was conducted, and the reliability of the questionnaire was calculated to be 0.84 using Cronbach’s alpha. = SPSS 21 software and descriptive statistics and measures of central tendency were used to analyze data. The independent t-test was used to investigate the relationship between the causes of non-reporting of errors and education, and analysis of variance (ANOVA) was used to assess the relationship between non-reporting of errors and gender, age, and work experience. The confidence level in this study was 95%.

This research was approved by the Research Ethics Committee of Ahvaz University of Medical Sciences (ethics code: IR.AJUMS.REC.1397.815), and all related ethical issues were considered in the research process.

4. Results

Table 1 shows the demographic characteristics of the respondents.

Table 1. Demographic Characteristics of the Respondents

Demographic Variables	No. (%)
Age	
< 30	48 (23.2)
31 - 40	87 (42.2)
41 - 50	66 (32)
> 50	5 (2.4)
Gender	
Female	139 (67.7)
Male	67 (32.3)
Academic degree	
Bachelor	138 (67)
Masters	68 (33)
Work experience	
< 5	24 (11.6)
6 - 10	99 (48.1)
11 - 15	64 (31.1)
> 15	19 (9.2)

According to Table 1, nearly one-third of respondents were male. Also, 98% of the participants were under 50 years old, and the mean age was 31 years old. In terms of work experience, 90% of the subjects had less than 20 years of experience In Table 2, the mean scores of the five factors causing no report of medical errors are demonstrated.

Table 2. Mean and Standard Deviation of the Scores of the Factors Causing No Report of Medical Errors

Factors	Mean ± SD
Educational	4.1 ± 0.66
Attitudinal	4.1 ± 0.63
Process	4.1 ± 0.68
Structural	3.71 ± 0.82
Managerial	3.56 ± 0.72
Total	3.88 ± 0.53

According to Table 2, the total mean score of the factors causing non-reporting of errors was 3.88 ± 0.53, which was between 3 and 4 (“important”). Also, educational, attitudinal, and process factors were reported as “very important” for nurses. Structural and managerial factors were rated reported “important” by nurses.

Table 3 indicates the frequency and percentage of the level of importance of factors causing non-reporting of

medical errors reported by nurses.

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Table 3. Frequency and Percentage of the Level of Im

Factors	Unimportant	Less Important	Important	Very Important
Educational	2 (1)	15 (7.3)	100 (48.5)	89 (43.2)
attitudinal	2 (1)	12 (5.8)	103 (50)	89 (43.2)
Process	2 (1)	28 (13.6)	78 (37.9)	98 (47.6)
Structural	8 (3.9)	43 (20.9)	98 (47.6)	57 (27.7)
Managerial	2 (1)	47 (22.8)	113 (54.9)	44 (21.4)

[a]Values are expressed as No. (%).

Table 3 shows that educational, attitudinal, and process factors with the frequency of more than 90% and structural and process factors with the frequency of more than 70% were rated as important and very important. Table 4 presents mean scores of five factors affecting non-reporting of errors based on gender, age, and education variables.

Table 4. Mean Scores of Factors Influencing Non-Reporting of Errors Based on Gender, Age, and Education

Variable	Factor				
	Educational	**Attitudinal**	**Process**	**Structural**	**Managerial**
Gender					
Female	4.08 ± 0.63	3.98 ± 0.61	3.94 ± 0.68	3.71 ± 0.76	3.56 ± 0.69
Male	4.14 ± 0.72	4.03 ± 0.66	4.08 ± 0.69	3.70 ± 0.93	3.56 ± 0.80
Age					
< 30	4.16 ± 0.64	4.11 ± 0.53	4.11 ± 0.68	3.90 ± 0.77	3.62 ± 0.73
31 - 40	3.96 ± .068	3.91 ± 0.68	3.95 ± 0.65	3.60 ± 0.77	3.52 ± 0.65
41 - 50	4.22 ± 0.62	4.04 ± 0.58	3.93 ± 0.69	3.68 ± 0.85	3.55 ± 0.80
> 50	4.48 ± 0.74	3.93 ± 0.98	3.94 ± 1.31	3.95 ± 1.31	3.56 ± 1.07
Educationa					
BSc	4.14 ± 0.66	4.07 ± 0.65	4.05 ± 0.70	3.78 ± 0.84	3.65 ± 0.75
MSc and PhD	4.02 ± 0.67	3.86 ± 0.55	3.85 ± 0.64	3.55 ± 0.75	3.36 ± 0.63

[a]P-value < 0.05.

According to Table 4, there was no significant difference between the factors for non-reporting of error based on age and sex. In addition, there was no difference between different educational levels in terms of educational, process, and structural factors. However, there was a significant difference between attitudinal (P-value = 0.022) and managerial (P-value = 0.06) factors for non-reporting of medical errors based on education. The average score of attitudinal and managerial factors for no report of errors in nurses with a bachelor's degree was higher than those with MSc. and PhD degrees.

5. Discussion

The results of the present study showed that the five dimensions of non-reporting of error were rated as important considering their scores. Of these five dimensions, educational, attitudinal, and process factors were rated as "very important" and the structural process was evaluated as "important" from the nurses' point of view.

According to more than 90% of nurses in our study, educational factors were rated as "important and very important", which is consistent with the results of Saadati et al. (1), who reported that the lack of knowledge and awareness about medical errors was the most important barrier to reporting medical errors from the perspective of nurses and managers. Also, Zaboli et al. (18) declared that 28.28% of nurses stated that they were not given any training on how to report their errors, and 18% of them were unaware of medical errors. Hajibabaee et al. (19) reported that the lack of awareness and agreement about the definition of work error was the reason for the non-reporting of errors by nurses so that 16% of nurses did not know when the error occurred, and 14% did not know when to report an error. Therefore, it is necessary for those in charge of education in hospitals to pay more attention to develop training programs for nurses.

Cramer et al. (20) showed that nurses report an average of 1.9% of their errors, and only 20.5% of all errors are reported by nurses, and also one-third of nurses do not know what errors have to be reported. Haw et al. (21) and Seidi and Zardosht (22) indicated that poor knowledge is the reason for no report of errors. Lack of information on how to report makes the medical team unaware of the error compensation and related treatment and care. It is essential to have clear instructions on how to report a

medical error, provide training in the university and also start in-service training, and update this training and what to report.

The results of the present study showed that for more than 90% of nurses, attitudinal factors are "important and very important". Attitudinal factors include reprimands from the treating physician for reporting errors, legal complaints to the nurse after reporting errors, negative reactions from the patient and his family, jeopardizing the job position, cowardice of colleagues, and distrust of colleagues and all members of the treatment team. Banakhar et al. (23) reported that fear of blame and punishment are barriers to error reporting in the clinical wards of the hospital. Golafrooz (17) showed that the most important reasons for not reporting nursing errors were endangering job positions. If a systemic approach and thinking become prevalent in hospitals, officials and managers will be convinced that most medical errors are not due to personal weaknesses of staff and result from system failures. When an accident occurs, blaming someone is not important, but why and how it happened in the system should be considered. We must look for the weaknesses of the system that pave the way for the error to occur. Our study showed that for more than 90% of nurses, process factors were considered "important and very important". Seidi and Zardosht (22) concluded that forgetting to report is one of the reasons for the non-reporting of errors by nurses. One of the major obstacles to report errors and incidents is the complexity and time-consuming process. In this regard, it is suggested that nurses in different places and in different ways can report the error. Emphasis on the importance of recording and reporting errors, a collective agreement on the errors to be reported, and clear definitions of medical mistakes/errors are some of the factors that increase error reporting.

In this study, more than 70% of nurses rated structural factors as "important and very important". These results are consistent with the study, in which satisfaction with the error reporting system was one of the reasons for not reporting the error (24). Poorolajal et al. (25) showed that the lack of a medical error reporting system, as well as the lack of proper reporting forms are the reasons for not reporting errors, which is consistent with the results of the present study. The health care system will not be far from medical errors due to the use of advanced technology and the complexity of its processes, and the sensitivity of its services. Therefore, managers and policymakers of the health care system should adopt the necessary infrastructure for proper management of medical errors, including the establishment of a medical error reporting system away from fear and a culture of blame in hospitals in order to improve the safety of patients and staff. Providing effective error reporting systems to encourage nurses and improve their motivation can have a positive effect on reducing medical errors in clinical settings (11). In order to receive medical errors, the hospital should install feedback boxes in different parts of the hospital and encourage the staff to use this method. Finally, the primary purpose of medical error reporting systems is to learn from reported errors and suggested solutions.

Our study showed that for more than 70% of nurses, managerial factors were considered "important and very important". Salavati et al. (26) indicated that the most important reason for the non-reporting of errors was managerial factors. The lack of positive feedback from nursing officials following the reporting of errors and the focus of officials on the wrongdoer without considering other possible factors involved in the occurrence of errors were two critical factors from the perspective of nurses. Based on the results of this study, the most important barriers perceived from the perspective of nurses in reporting medical errors were managerial factors (26). Bahadori (cited in Mardani and Shahraky) (5) also showed that managerial factors play the most important role in nurses' refusal to report their errors, which is consistent with the results of our study. Considering health promotion as the ultimate goal of health systems and patient safety as a major concern of these systems, error reporting by nurses seems essential. In order to achieve acceptable error reporting, it is necessary to overcome perceived barriers. Blegenet et al. noted that nursing managers should use management measures and strategies to promote ethics based on accountability, responsiveness, and reporting of nurses' errors. In addition, rather than establishing a mere system of punishment for professional misconduct, they should try to promote this culture in the employees under their supervision because high-quality care is a patient's right, and nurses must be accountable for their actions and report their work errors due to their professional independence (27). Also, in a study by Mirsadeghi and Pazokian (28), managerial barriers, such as managers' lack of support for reporting, were mentioned as the main barriers to non-reporting. In the study by Mullaei et al. (29), respondents ranked three priorities in the field of conceived management-related factors for not reporting errors as follows, (1) not receiving positive feedback from nursing officials following error reporting; (2) officials' focus only on the wrongdoer regardless of other factors involved; and (3) lack of organizational support for those who have already made mistakes. One of the management measures to improve the reporting of nursing errors is the existence of an appropriate system for organizing the supervision of nurses' work so that it can prevent dangerous work errors and, if necessary, take appropriate measures to eliminate them. There was a difference between attitudinal and managerial causes in the non-reporting of medical error based on education level. In a study by Golafrooz et al. (17), there was a significant difference between educational, attitudinal, and managerial factors, which is consistent with the present study. Yung et al. (30) and Zaboli et al. (18) reported no significant relationship between education level and reasons for non-reporting of errors. Therefore, by educating physicians to reduce blaming, training the

staff in order not to take sides against the error report, favorable feedback from the nursing manager after an error, the appropriate response of officials considering the importance and severity of errors, and increasing safety culture by managers the reasons for not reporting the error can be eliminated. There was no difference between nurses' perspectives based on work experience in terms of attitudinal, process, structural, and managerial factors for no error reporting. However, there was a difference between educational factors in non-reporting of medical errors based on service history. Noohi et al. (2) reported no significant relationship between the causes of non-reporting of errors and demographic characteristics, which was not consistent with our study (2). In this regard, it is recommended to provide the necessary training for all personnel with different work experiences on error reporting importance, process, and cases that should be reported.

5.1. Conclusions

The reasons for not reporting errors can be categorized as educational, attitudinal, process, structural, and managerial factors. Educational, attitudinal, process, and managerial factors were assessed as "very important" and structural and managerial factors as "important". Reporting errors is essential for preventing and learning from errors, and it has an undeniable effect on reducing the occurrence of errors in the future and increasing proper patient care; thus, it is worthwhile for senior officials to use strategies to remove barriers or reduce the causes of non-reporting errors. To reduce the factors that lead to no error report, an impersonal and systematic approach should be adopted so that nurses can report their errors without fear and in an environment free of punishment and blame. Nursing managers need to teach nursing staff about the types of errors and reporting processes and items. In other words, they have to establish rules and regulations in the field of error reporting and define and explain the rules of error reporting and its constituent elements, including the errors categories.

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Conflict of interest

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