Factors Affecting Reporting of Nursing Errors: A Qualitative Content Analysis Study

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Abstract

Background: Reporting errors has a key role in reducing the frequency of errors and improving patient safety. The present study was conducted to investigate factors affecting reporting of nursing errors in military hospitals. **Materials and Methods:** The present qualitative study was conducted with the participation of eight military nurses. Data were collected using semi-structured in-depth interviews. Sampling began purposively and continued until data saturation. Data were analyzed according to Elo and Kyngas content analysis approach. **Results:** Analysis of data led to the extraction of 400 initial codes and two general categories, including barriers to reporting error (error causing harm, maintaining reputation, negative organizational encounter, nurse's temporary position, and lack of accountability) and facilitators of reporting error (positive previous experience, being new, anonymity of reporting system, nurse' personal values, positive supportive atmosphere). **Discussion and Conclusion:** Many factors affect reporting errors, some facilitate and some prohibit it. To obtain proper information about errors and improve patient safety, health systems should reinforce factors facilitating reporting errors in hospitals.

Keywords: Reporting errors; Nursing Errors; Qualitative Study; Management of Errors; Military Hospital

Introduction

Despite advances made in the management of errors, they still happen in the health system. [1,2] As in other medical professions, errors in nursing can lead to mortality, prolonged hospital stay, and negative effects on nurses. [3,4] Previous studies have shown that medical errors are the third leading cause of death in America. [5] A study conducted in Pennsylvania University on 393 full-time nurses over one month showed that 30% of nurses committed at least one error in the course of the study. [6] In a review study conducted by Mansoori et al. nursing errors were between 14.3% and 70%, of which, only 14% to 27% had been reported. [7] Reporting errorsis the first step toward preventing the occurrence of the same error again. [8] Studies reveal only a small proportion of errors are reported. [7,9] We therefore decided to investigate factors affecting reporting of nursing errors in military hospitals by qualitative content analysis method.

Materials and Methods

The present qualitative study was conducted to investigate factors affecting reporting of nursing errors in military hospitals using content analysis approach. This approach has been recommended for phenomena with little information available about them. [10] This method also provides a broader description of the studied phenomenon in the form of concepts and categories. [11,12]

A total of eight nurses from four military hospitals in Tehran took part in the present study. The study inclusion criteria were willingness to take part, and employment in military hospitals. Based on the available statistics of errors, the assumption in the selection of participants was that all working nurses in these hospitals had committed at least one error.

After explaining the study objectives and obtaining written consents from participants, data were collected through semi-structured interviews. Interviews were conducted face-to-face outside working hours in personnel's rooms with prior arrangements. Participants were selected by purposive sampling, which began on October 22th, 2017 and continued until data saturation on April 22th, 2018. A number of questions were used as interview guide; for instance: "Please explain how care is provided in your ward"; "Please explain your experience of errors"; "What factors made you report the error?"; "What factors made you not report the error?", and "Could you elaborate on that?". A total of eight interviews were conducted,

each lasting 20-60 minutes. Interviews were recorded and transcribed and analyzed at the first opportunity.

Data were analyzed according to qualitative content analysis approach and Elo and Kyngas method. [10] This method proposes three stages of analysis, including open coding, creating categories, and abstraction. Before open coding, interviews were transcribed and reviewed several times to construct a general understanding of them. In the open coding stage, codes were assigned to semantic units in MAXQDA-11. In creating categories stage, codes were compared in terms of similarities and differences, and those that implied the same meaning were assigned to one category. New codes were placed in previous subcategories after assessment, and categories were formed by the addition of further interviews. To reduce the number of initial categories, they were compared and if possible integrated and placed in a common category. By the end of this stage, the researcher obtained a general description of the phenomenon. In abstraction stage, the researcher labeled categories and subcategories according to codes and their contents, indicating the general content of that category.

Assessment of accuracy and rigor in content analysis method is similar to other qualitative studies, [10] and the following measures are taken: adequate relations with participants, using participants' views to confirm extracted codes and categories (three participants), allowing sufficient time for collection and analysis of data (about seven months), assessment of interviews and analysis of data by advising and consulting professors (all interviews), maximum diversity of subjects in terms of gender, age, work experience, and education.

The present study was approved by the ethics committee of the AJA University of Medical Sciences. Prior to interviews, participants' written consents were obtained, and during interviews, feedback and verbal consents were also obtained to continue.

Results

A total of eight nurses took part in the present study (three female and five male), including one assistant nurse, six nurses with bachelor's degree, and one with master's degree, with age ranging from 24 years to 41 years (mean 31 years), and minimum work experience of two months and maximum of 18 years (mean five years). Of all participants, one was on contract employment, two on military services, and five were formally employed.

Analysis of data led to the extraction of two general categories relating to reasons for reporting errors in military hospitals: barriers to reporting and facilitators of reporting errors. Categories and subcategories are summarized in Table 1.

Barriers to reporting errors

Barriers to reporting errors were the first category to emerge in relation to main objectives of the study. Participants cited factors such as error leading to harm, preserving reputation, negative

Table 1: Summary of categories and sub-categories.	
Category	**Subcategory**
Barriers to reporting errors	Severity of error
	Preserving reputation
	Negative organizational encounter
	Nurse's temporary position and lack of accountability
Facilitators of reporting errors	Positive previous experiences
	Being new
	Anonymity of reporting system
	Nurse's personal values
	Positive supportive atmosphere

organizational encounter, nurse's temporary position and lack of accountability as barriers to reporting errors. Participants believed that barriers had a greater effect than facilitators in reporting errors.

Severity of error

The severity of error was one of the barriers leading to refraining from reporting errors, as cited by participants. When an error was likely to cause a patient harm or when it was severe, nurses tried to conceal that error. A participant with 18 years of experience in emergency department explained:

"The majority of medication and care errors that did not lead to harm were reported" (M, 3).

Another participant with four months' work experience said:

"I would not report if an error is so bad that it cannot be fixed" (M, 8).

Preserving reputation

Another subcategory relating to the general category of barriers was preserving reputation. According to participants, preserving reputation and avoiding profession scandal was among factors causing non-reporting errors. A participant explained:

"I wrongly injected a patient with insulin .... I was scared of being discredited before my colleagues or being named and shamed. Besides, the patient was not harmed ..... so I injected him with a little dextrose" (M, 8).

Preserving nurse's reputation and position also affected decisions of nursing managers concerning the culprit nurse and reporting errors. A participant with 17 years of clinical experience and two years of experience as a patient safety nurse said:

"I knew if I had reported this person her professional reputation would be ruined, and as a culprit nurse, no one would any longer accept her in the system, and that is why I didn't report" (M, 2).

Negative organizational encounter

This was another factor affecting non-reporting errors. With the ruling punishable atmosphere, nurses tried not to report errors. A participant commented:

"Here, you would be disciplined for any big or small error, and if you are doing your military service, you have to serve extra. That is why most errors are concealed and not reported" (M, 6).

Nurse's temporary position and lack of accountability

This was another subcategory of barriers to reporting errors. Presence of military service personnel and lack of accountability on the part of contract personnel affected reporting errors in military hospitals. A participant said:

"Military service personnel tell me that they are here to do their compulsory service and that they would be disciplined and have to serve extra. That's why theyconceal most errors and don't report them" (M, 2).

Facilitators of reporting errors

This was another category formed in relation to the main objectives of the study, and included the following subcategories: previous positive experiences, being new, anonymity of reporting system, nurse's personal values, and positive supportive atmosphere. These factors encourage nurses to report errors.

Positive previous experiences

According to participants, positive previous experiences were among factors affecting their decision to report errors. With positive previous experiences, nurses were encouraged to report their new errors. A participant with six years of experience in emergency department said:

"I reported an error in the hospital I work, and I was not disciplined or blamed. This encourages a nurse to report any errors she commits, and in my view, these reports prevent nurses from committing more errors" (M, 5).

Being new

Being new was another subcategory of facilitators of errors. Work experience was among factors affecting reaction to errors, as cited by nurses. For instance, a participant with four years' experience in internal department said:

"A patient accompaniment came and said that the patient had breathing difficulty, and I quickly off serums transfusion, and realized that I had given her the wrong medication. I was new then, and I informed the in-charge [nurse].... Why did you report, and why didn't you try to conceal the error? Perhaps I could do that now. I was new then, and not much oriented. That is why I reported" (M, 7).

With increasing work experience, nurses were less inclined to report errors, and rather tried not to report them, and resolve the error themselves, so that no one would ever know.

Anonymity of error reporting system

According to participants, the type of reporting system affected reporting errors. They believed that frequency of error reports increased when the system requested errors anonymously. A participant with experience as head nurse explained:

"We have an error registration system in which errors can be registered by the individual concerned. An error happened; this occurred, and no names required. We don't write who committed the error .... Since using this system, the number of error reports has increased" (M, 4).

Nurse' personal values

This subcategory was formed in relation to the category of facilitators. In participants' view, personal attributes were among factors affecting reactions to errors. A participant said:

"If an error causes a patient harm, I am so conscientious (laughing) I quickly tell, albeit a doctor, colleagues, or the head nurse. I cannot accept it. Then I followup the patient to see he comes to no harm" (M, 4).

participant argued:

"Errors always happen. It depends on the person's care and conscience whether to report it or not. Otherwise, they always happen" (M, 3).

Positive supportive atmosphere

According to participants, the supportive atmosphere was among factors affecting how they dealt with errors. Participants considered the presence of a supportive atmosphere among factors affecting reporting errors. With a ruling supportive atmosphere, nurses protected the patients and did not cover up errors as much. Participant eight with four months' experience said:

"Fortunately, we are at ease with colleagues and have a good rapport. We have resolved errors by ourselves many times .... That is why we tell oneanother about errors, so they can be resolved within the team".

Discussion

The present study was conducted to investigate factors affecting reporting of nursing errors in military hospitals. The results obtained showed errors causing harm, preserving reputation, negative organizational encounter, and lack of accountability as barriers to reporting errors, and positive previous experiences, being new, anonymity of reporting system, personal values, and positive supportive atmosphere as facilitators of reporting errors by military nurses. There is rarely a single contributing factor to reporting errors, and a set of factors makes nurses report errors.

Among barriers to reporting errors, error leading to harm was one of the most important factors. Nurses refrained from reporting severe errors due to fear of being disciplined or losing reputation. Nurses reported errors that were not severe or harmful. In a study conducted by Hashemi et al., nurses' perception of severity of errors was cited as a barrier to reporting errors. [13] Some studies have not referred to severity of

errors as a factor affecting reporting errors, and their results are contradictory. [14,15] This suggests that there are factors other than severity of error affecting decision-making about reporting errors.

Another factor causing non-reporting of error was preservation of reputation. To avoid loss of reputation, nurses had no desire to report errors. In a study conducted by Valiei et al., it was argued that nurses did not report errors to preserve their professional reputations. [16] Reporting errors can be increased and its reoccurrence can be avoided by teaching nurses that errors can happen to everyone (professional or novice) and that errors are not indicative of a person's weakness.

Negative organizational encounter was among the main barriers to reporting errors. Due to a disciplinary atmosphere in military hospitals, nurses refrained from reporting errors. Previous studies have referred to organizational and management factor as the most important cause of not reporting errors. [13,17] Inappropriate encounter of nursing managers and disciplinary atmosphere had made nurses fear reporting errors. Thus, by creating an equitable culture in the medical system, the weight of this factor on non-reporting errors can be largely reduced and nurses can be encouraged to report errors.

The next category of barriers to reporting error was nurse's temporary position and lack of accountability of some nurses working in military hospitals. Given their temporary position, military service nurses (24 months military service) lacked accountability, and thus they did not report their errors. In a study conducted by Hashemi et al., lack of accountability was also a barrier to reporting errors. [18]

The next category relating to the present study main objective was facilitators of reporting errors. According to participants, facilitators had a less role in reporting errors than barriers. This has also been cited in similar studies. [13,19]

In view of participating nurses, positive previous experiences of reporting errors were among facilitators of reporting errors whereas, in the absence of unreasonable treatment of hospital managers, nurses were inclined to report their errors. In a study conducted by Ajri-Khameslou et al., nurses' previous experience of dealing with errors was also among factors affecting how errors are dealt with by individuals. [4] Hence proper response to errors creates a positive experience in nurses to report errors, and also reduces the fear of organizational disciplinary measures.

According to participating nurses, anonymity of error reporting system was another factor facilitating reporting of error, and this has been overlooked in previous similar studies. [13,16] A review study referred to the absence of a known process of reporting errors and also reporting of errors being time-consuming as a barrier to reporting errors. [20] It is therefore recommended that medical systems develop their anonymous error reporting systems. Professional nursing systems should also have a role by creating online error reporting system.

Nurse's personal values are also regarded as facilitators of reporting errors. Like other behaviors, an individual's error reporting behavior is rooted in his personal characteristics and personality. The personal characteristics of nurses in reporting errors are also cited in a study conducted by Mc Lennan et al. [21] Therefore, it is recommended that individual's personality (a sense of accountability) and psychological features be considered in recruiting nurses.

In the present study context, supportive atmosphere was another factor facilitating reporting errors. Nurse argued that with a supportive atmosphere of the ward, they would be more inclined to report error committed by medical team. Many studies have cited supportive atmosphere as a facilitator of reporting errors. [20,22,23] It is therefore recommended that open communication and teamwork policies be implemented in hospitals to improve supportive atmosphere.

Conclusion

Errors are a threat to patient safety. To avoid errors, they should be reported by nurses and analyzed, so as to prevent repetition of errors. In fact, reporting errors is the first step in preventing them from happening again. In the present study, a set of factors affected reporting errors by nurses. In the view of participating nurses, not just one factor affected reporting errors, but a set of factors contributed to the occurrence of errors. Health systems should implement regular programs to eliminate barriers to reporting errors and improve facilitators, so that nurses can report their errors more than ever before. By reporting an error and investigating its causes, its happening again can be prevented.

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Conflict of Interest

The authors disclose that they have no conflicts of interest.

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