Research Paper:
Barriers and Facilitators of Reporting Medical Errors in a Hospital: A Qualitative Study

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ABSTRACT

Background & Aims of the Study: Reporting human errors in healthcare agencies is often accompanied by embarrassment and the fear of punishment; such errors can highlight motivation, the lack of attention, and enough education. Thus, there is a tendency to hide them. This study aimed to investigate the barriers and facilitators of reporting medical errors in hospitals.

Materials and Methods: A qualitative study design with a conventional content analysis approach was used. The data were collected through in-depth semi-structured interviews with a purposive sample of 13 employers working in the hospital in Qom Province, Iran. Interviews were transcribed and finally analyzed through conventional content analysis. Accordingly, its results were presented in a theme, subcategories, and categories.

Results: Our findings indicated that the employees had a multilevel perspective of medical error, viewing facilitators, and barriers to a medical error concerning several system levels. The barriers to medical error included individual, organizational, and social barriers. The facilitators of medical errors consisted of education, organizational, and cultural facilities.

Conclusion: Findings suggested the need for support and security for employees and consideration of facilities to prevent the nonreporting of errors. Managers must provide the necessary personal, professional, and legal support to employees to remove barriers to encourage them to report the mistakes effectively.

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1. Introduction

Medical errors are the preventable adverse effect of care that may include incorrect or incomplete diagnosis or treatment [1]. The prevalence estimates ranged from 2% to 94% [2]. Ramia and Zeenny found that 73% of patients had incomplete therapeutic/safety laboratory-test monitoring tests [3]. Preventable adverse medication events were estimated as 15/1000 individuals/years [4]. In Iran, a systematic review study highlighted that medical errors are approximately 50% [5]. This frequency of medical errors can lead to several complications [6].

Multiple studies have reported the consequences of medical errors. Medical errors have direct and indirect impacts. Immediate results include patient harm as well as increased healthcare costs. Indirect effects include damage to nurses regarding professional and personal status, confidence, and practice [7]. Although most errors are minor, there is a considerable spectrum, and some are fatal. It is estimated that medical error is the third cause of death in the USA [8]. A study reported that the number of deaths related to U.S medical error is 44000-98000 cases annually [8]. Approximately 1%-3% of pediatric hospital admissions are complicated by medical error [9]. Therefore, medical errors must be caught in time, and their reasons are revealed if solutions are found for their prevention [10].

The first step in preventing medical errors is identifying the causes of medical errors using the medical error reporting system. If medical errors are well reported by health system staff, health managers can identify the causes of medical errors; thereby, they can plan and implement operational programs to prevent the causes [11]. The medical error reporting system is the essential method that can be used to identify errors in healthcare services. This measure is aimed to save patients from being harmed by such errors and reduce these errors altogether [10]. Despite the medical error reporting system's importance, some health workers refuse to report the mistakes. Estimates suggest that 50%-96% of adverse events are never reported [12], while about half of them are considered preventable [13]. Identifying the facilitators and barriers to reporting medical errors can enhance medical error reporting to identify and prevent the causes of medical errors [14].

A large body of literature from different contexts has reported the facilitators and barriers to reporting medical errors. Of the surveys published in the literature, most have been conducted in the U.S., Australia, and the United Kingdom (U.K.), with findings of barriers towards reporting, including the fear of adverse consequences following reporting [15-17] disagreement over error [18, 19], identifying the lack of knowledge and awareness [20], and the lack of feedback [21]. Despite numerous studies on facilitators and barriers to reporting medical errors, a limited number of these studies are related to healthcare delivery systems in Iran. The managing system of healthcare in Iran is different from other countries [22]. Furthermore, the culture of Iranian health workers is different from other countries [23]. Therefore, facilitators and barriers to reporting medical errors in Iran can differ from other countries. This study aimed to explore the barriers and facilitators of reporting medical errors in Iranian hospitals.

2. Materials and Methods

A qualitative study design with a conventional content analysis approach was used. The qualitative content analysis examines participants' experiences [24]. The study setting included the teaching hospitals of Tehran and Qom Provinces, Iran. The study participants were selected using the purposive sampling method [25]. As per Table 1, 13 clinical staff members were invited to participate in the study. The examined participants differed concerning the level of education (B.A. degree), job positions (nurse, head nurse, midwife, anesthesiologist, & physician), workplaces (maternity ward, operating room, intensive care unit), and work experience (ranged: 2-21 years).

The study's inclusion criteria included at least one year of work experience in the clinical setting and the informed consent of the participants to participate in the study. The study participants who dropped out of the study at each study stage were excluded. Sampling was performed by the purposive method. For this purpose, the subject who met the inclusion criteria and could express their experiences were considered. In-depth interviews were used to gather information; that the study participants could have more freedom of action and freely discuss the topic of the study. Before the interview, the study participants were permitted to record the interview and ensure that their information was confidential. These interviews were conducted where participants could feel comfortable about their mistakes, such as the clinical governance office. The interview was conducted in Persian. Sampling continued until the data were saturated. After providing voluntary information, the interviews began with a general question about the barrier medical error report. Next, we used adequate questions to under-

stand the participants' experiences better. No pre-defined definition of medical error is provided. The research participants were requested to talk about what they were experiencing and identify them as medical errors. The interview was semi-structured. Some of the interview questions were as follows: Please tell me about your mistakes in providing care. What do you do when you have a medical error? After commenting on the importance of the error, a participant was asked. Do you remember what the barriers/facilitators to error reporting were? Furthermore, research questions were asked to ask for more details or clarification.

To validate the findings, member checking was applied to the research participants. Moreover, the research team triangulation results for checking and establishing the validity of finding by analyzing a research question from multiple perspectives to arrive at consistency across data sources or approaches. Moreover, codes and categories were checked and confirmed by two experts in qualitative study design by two colleagues. The peer reviewers were not involved in this study. The qualitative data analysis was based on the content analysis method, and its results were presented in the form of a theme, subcategories, and categories.

Conducting the interviews took 20 to 45 min, was audio-recorded. Subsequently, they were immediately transcribed to the paper, following which they were analyzed using descriptive qualitative analysis. In this study, the coding of the interviewees, including the Midwife (M), Nurse (N), Anesthesia Nurse (AN), the Operating Room Nurse (ORN), and the work experience with (E) and the age of the employees (Y) were determined. For example, a nurse with 18 work experience, 42 years old, was written in the figure below (N, E18.42Y).

The interviews were concurrently recorded, transcribed verbatim, coded, and analyzed. In the initial step, interviews were read and re-read to understand what the participants had talked about. Then, the texts about the study participants' experiences were extracted and brought together into one text as a unit of analysis. The meaning units were identified, condensed, abstracted, and labeled with codes in this text. Based on differences and similarities, the various codes were sorted into 16 subcategories and six categories [26].

The study participants are voluntary for cooperation in the study, and the study's purposes were described for them. Therefore, all participants were informed about the study's protocol, and confidentiality was assured and maintained for all of them. Moreover, verbal con-

sent was obtained from recruited subjects. Furthermore, the research team described to the participants that they were free to withdraw from the study if they felt embarrassed at any time. The anonymity of the participants was ensured by taking cod to the subjects during the interviews. The recording of the discussion was conducted with the consent of the interviewees.

3. Results

According to the study data, most individual, organizational, and social barriers to medical error reporting were raised. Besides, the staff provided training and organizational and cultural facilities to create the obstacles to error reporting by creating facilitators. The executor did not use the sample list of obstacles and facilitators during the in-depth interviews. This is because there was much discussion with the participants, s they reacted to each other's experiences, especially when they had to think of facilitators. In total, 3 categories of barriers and 3 classes of facilitators were identified.

Barriers

The barriers involved 3 categories of individual, organizational, and social (Table 2):

Individual

Two sub-headings, including the lack of staff time to report medical errors, the lack of awareness of medical error definition, no job commitment was related to individual barriers.

Lack of staff time to report medical errors

Excessive workload and responsibility prevent staff from reporting errors. Nursing experts said: "...Due to the overload, and when the ward gets crowded, I forget to report the error" (N, E2,25Y).

Lack of awareness of medical error definition

The lack of awareness was one of the cases that participants cited as a barrier to reporting. The lack of awareness was reported primarily on the newly graduated nurses; a nurse said: "Sometimes we do not have enough knowledge about the error, and we do not know what is wrong and need to report it (N, E2,25Y). The nurse from the operating room said: "Do not know the error definition and does not know to report the error (AN, E8,32Y).

Table 1. Characteristics of study participants (n=13)

Variables		No. (%)
Gender	Female	13(100)
	Male	0(0)
Marital	Single	1(7.6)
	Married	12(92.3)
Age, y (Mean±SD)	34±5.2	-
Clinical experience, y (Mean±SD)	10.3±3.5	-
Education	Bachelor	12(92.3)
	Specialist	1(7.6)
Workplaces	Intensive care unit	3(23.07)
	Childbirth block	2(15.3)
	Surgery room	2(15.3)
Job position	Physician	1(7.6)
	Nurse	4(30.7)
	Supervisor	1(7.6)
	Midwife	2(15.3)
	Operating Room Technician	2(15.3)
	Head Nurse	3(23.07)
Practice experiences, y	<10	1(7.6)
	10-20	8(61.5)
	>20	4(30.7)

Organizational

Four sub-heading, including notification from the direct supervisor, useless medical error report, negative attitude responsible department, exposed to charges, were related to organizational barriers.

Notification from the direct supervisor

Most study participants were referred to reprisals and did not report errors due to fear of reprisal. Midwife... I am not aware of the fear of reprimand or remorse for the mistake committed (M, E10,33Y). Another nurse said we were reprimanded for the error and told us that you had increased the error rate (N, E16,39). Another nurse mentioned... When an error occurs, authorities look for the offender (N, E14,37Y). Also, I am not reporting the error due to the terrible attitude of the person in charge of the department and because of the mistake of going to the nursing office (N, E2,25Y)…I fear that job stigma and inappropriate treatment of the head of the department cannot be misreported. That mistake will not be erased from the past (AN, E9, 33).

Useless medical error report

One consequence of failing to report medical errors is that the error is unimportant, which seems to be due to a lack of awareness of the error:…Many mistakes are trivial in terms of personnel and not worth telling (M, E10,33Y). If it does not harm the patient, the nurse said any error reporting is required (N, E14,41Y). Another

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nurse…In the past, employees felt responsible, but now the opposite is exact (N, E18, 42Y). …We are no longer motivated to work at all. If I say we are not encouraged, it is useless (AN, E9, 33)…. What is the result of recording the error? What will happen? (M, E16,43Y).

Negative attitude responsible department

Most research participants were unhappy with the shift in viewpoints of the lineage officials and were barriers that could not easily report their error.

Nurse…If staff members report an error, their comments about the person will be wrong (N, E16,39Y).

Midwife…The fear of incorrect view of department responsible who does not allow error to be declared everyone else in the error department will blame me.

Eexposed to charges

An examination of the staff revealed that they would be impeachment if they made a mistake…When I make a mistake, I feel like others are infamous (N, E14,37Y). Another nurse...only when you say the mistake does the person in charge of the worse part stress you out (N, E6,33Y)…Whenever you make a mistake, the feedback you receive is essential. Everyone understands. They become curious, You are just being punished, For example, salaries are reduced, pay attention to the error, You are insulted, This is discouraging)N, E20,44Y).

Social

Four sub-heading, including humiliation and blame the staff, legal issues, distrust, and losing a reputation or a job, were related to organizational barriers

Humiliation and blame the staff

Being punished or reprimanded in the organization increases the anxiety and stress of the nurse, resulting in an increased error and no reporting. Midwifery…I once reported a mistake. I was humiliated by my boss and treated me harshly, and she treated me very harshly. Insulted my personality (M, E10,33Y)...

Well, it depends on whether the error is large or small ... it is more about maintaining prestige. Furthermore, a more experienced nurse is waiting to see our error (N, E14,37Y).

Legal issues

According to the importance of patients' rights, the legal issue of medical errors has become common. Moreover, employees are reluctant to report errors for fear of cost overruns and consequences….When the error is said, it has trouble Bored of not following up; also, I am terrified that I will be forced to pay compensation (N, E6,33Y).

Distrust

Nurses seem to report their mistakes when they feel safe and confident that error reporting is not a bad outcome for them. ... There is no sense of security (M, E10,33Y) …There are no supporters. First, they say report the error, but in the end, you have to go to the committee and explain. (N,E6,33Y).

Losing a reputation or a job

Error detection is often a complicated process. Accordingly, the reason for not reporting errors is damage to the professional position and reputation of the service provider…... If we report an error, our Work reputation will be damaged (ORN, E10,33Y).

Facilities

Facilities created the 3 categories of education, organizational, and cultural (Table 3):

F.1. Education

Two sub-headings, including "education how to report errors, and patient safety training based on patient safety standards", were related to Education

F.1.1: Education on how to report errors

Most participants noted the necessity of training in this regard….It is a good idea to learn more about how to report an error and how to report it to. Let's talk about what they say is wrong, how to say it (N, E2,25Y). Continuous training should be given to the staff because it causes sensitivity and accuracy and affects the patient's safety (N, E18,42Y).

F.1.2. Patient safety training based on patient safety standards

The institutionalization of patient safety standards in medical centers requires establishing standards. Most of the study participants mentioned this issue…. Try to remind the staff frequently of the standards and safety

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Table 2. Barriers to reporting medical error

Categories	Sub-category
Individual barriers	Lack of staff time to report medical errors Lack of awareness of medical error definition
Organizational barriers	Notification from the direct supervisor Useless medical error report Negative attitude responsible department exposed to charges
Social barriers	Humiliation and blame the staff Legal issues Distrust Losing a reputation or a job

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issues should be valued more (ORN, E10,33Y)..... If we know the instructions, we will recognize what the error is and report it. Most of these are for patient safety… Patients often do not know the standard, and we think We are exemplary and not wrong (M, E16, 43Y).

F.2. Organizational

Three sub-heading, including "Reward payment, supporting individuals in disclose, medical errors were related to the administrative aspect:

F.2.1. Reward payment

Most research participants were dissatisfied with not being encouraged to take the right action and reporting medical errors. They pointed to motivational factors, e.g., using an incentive approach and rewarding…Encourage the staff to be happy because it will make the mistakes clear and not be repeated (M, E10,33Y)….Give employees the right encouragement and do not lie (M, E12, 43Y)…I think employees should be encouraged financially and in the case(N, E2,25Y). Another nurse Written encouragement and special privileges are much better for the error reporter. It affects staff because of the encouragement he received. That mistake did not leave his mind (N, E16,39Y)…Encourage any personnel who pose the most significant error. The kids in that section have a sense of attention from the managers(AN, E9, 33)… Encouragement in exchange for a mistake increases the motivation to work (N, E14,41Y)…. Encourage the person as a gift that the hospital considers (ORN, E10,33Y).

F.2.2. Supporting individuals to disclose medical errors

In the treatment system, employees require further support. Thus, the study participants tend to be supported by managers if they make a mistake…. The gynecologist

said. Do not just look for the cause of the error to support. I announce the error when I know it will be supported. I try to work better (G, E2,35Y) …… I expect them to support me and make me confident (M, E12,43Y).

F.2.3. Creating an error reporting system

Regarding identifying and reporting errors, most employees referred to issues, such as conditions and the characteristics of reporting, confidentiality, and the necessity of having a system for monitoring and recording errors in the organization...The error registration process should be concise and short, and the staff should have easy access (M, E12,43Y)…The error report becomes systematic and is confidential and without a name. There is no need to write the error name (AN, E9,33)… Leave a separate box to monitor for errors and give feedback to the person so they know the outcome of their work. (M,E10,33Y).

F.3. Cultural

Two sub-headings, including "Organizational learning and learning errors, a culture of encouragement versus inspection and punishment was related to the cultural dimension:

F.3.1. Organizational learning and learning errors

Most study participants cited such issues as error feedback and corrective action to learn from mistakes…..I made a mistake in finding a solution to the error in the body participation session so that it stays in my mind, and I do not repeat the danger (M, E12,43Y) ….The wrongdoer should be guided by the superior, not punishment and reprimand so that he learns from the mistake (N, E2,25Y) ….On the other hand, if the result of the

Table 3. The facilitators for reporting medical error

Categories	Sub-category
Education	Education how to report errors Patient safety training based on patient safety standards
Organizational	Reward payment Supporting people to disclose medical errors Creation error reporting system
Cultural	Organizational learning and learning errors A culture of encouragement versus inspection and punishment

error is sent to the department, it will be experienced by everyone, and they will learn to ask (N, E16,39Y).

F.3.2. A culture of encouragement versus inspection and punishment

Encouragement seems to impact reporting medical errors significantly. Furthermore, stress-relieving staff can articulate their misconceptions about the fear of reprimanding and punishing the majority of participants…Encourage the staff to be encouraged because it will make the mistakes clear and not be repeated…(M, E10,33Y) Honest encouragement of the body no lies at work (M, E12,43Y) …

Employees should be encouraged both financially and in a case-by-case manner rather than by abusive behavior or inspection (N, E2,25Y)…. written encouragement. Visa score is much better for the error reporter and affects the staff because of his encouragement (N, E16,39Y)… Encouragement in exchange for a mistake increases the motivation to work...

Body motivation Raise the staff's self-confidence Reassure the body of non-punishment and reprimand (N, E14,41Y)…… Encouragement to the person as a gift that the hospital considers ORN, E10,33Y).

4. Discussion

The present study aimed to investigate barriers and facilitators in reporting medical errors. The obtained findings were classified into 6 categories and 16 subcategories.

The present study data revealed that the barriers to reporting medical errors included individual, organizational, and social aspects. Besides, the first barrier to reporting medical errors is individual barriers. Individual barriers to reporting medical errors included the lack of staff's time to report medical errors and lack of awareness of medical error definition. This finding is consistent with previous studies [27, 28]. Studies conducted in Iran [29, 30], Taiwan [31], and Germany [32] also signified that the first barrier to reporting medical errors is the high workload of healthcare workers. Due to the increased work shifts and the high ratio of patients to nurses in Iran, nurses lack adequate time to participate in in-service training classes actively and learn the basics of error reporting. Additionally, the lack of time has led nurses who know the basics of medical error reporting to refrain from doing so.

These results indicate the significance of improving health workers' ratio to patients and improving health workers' knowledge about the importance of medical error reporting in increasing medical error reporting.

The achieved results demonstrated that the second barrier to reporting medical errors is organizational barriers. Organizational obstacles to reporting medical error included notification from the direct supervisor, useless medical error report, negative attitude responsible department exposed to charges. Stratton reported that senior managers focus on the person who committed errors rather than a system where medical errors can be registered and analyzed [19]. Moreover, Soydemir et al. argued that the employees' perceptions of preventing the medical reporting error included the lack of belief in the need for such a system, unawareness about medical errors, considering errors normal, and not considering it as an error [10].

These results indicate that the medical error reporting process will not be appropriately performed until an adequate error reporting system is established. In a fair error reporting system, managers understand the importance of paying attention to the reported errors, managing the individuals who reported the mistake and accompanying the error reporter to find the root causes of the error and the method of preventing its recurrence. In this system, instead of focusing on the erring individual, it focuses on a set of individual and organizational factors that can be effective in causing the error.

The results show that the third barrier to reporting medical error concerns social aspects. Social barriers to reporting medical errors included humiliation and blame to the staff, legal issues, distrust, and losing a reputation or a job. Bayazidi S et al. stated that the most critical barriers of reporting medication errors were blaming individuals instead of the system, the consequences of reporting mistakes, and fear of reprimand and punishment [33].

In another study, the most significant obstacles to error reporting in both cohorts consisted of the fear of reprimand, poor communication, and hierarchy [34]. Qalandarpuratar et al. and Helmchen et al. also argued that some health system employees do not report medical errors due to the fear of adverse consequences, such as malpractice lawsuits, the loss of patient trust, and emotional reactions of patients and their relatives, or the loss of job [35, 36]. Accordingly, following the reporting of an error, the authorities should hold the entire treatment team responsible for the occurrence of this error. Without punishing or stigmatizing the person reporting the error, they should search a set of factors contributing to the error. In a system with adequate error reporting, not only is the reporting person not punished but individuals who report errors to identify existing gaps (which can be effective in creating systematic errors) are encouraged.

The collected results outlined that the facilities of medical error reporting included education, organizational, and cultural facilities. Moreover, the first facilitator of medical error reporting is education that provides education on reporting errors and patient safety training based on patient safety standards. Elder et al. and Pattison et al. found that improving workers' information about the error reporting process and devoting educational resources can improve medical error reporting [37]. Therefore, in creating a quality error reporting system, one of the first steps is to educate healthcare workers about the importance and process of error reporting. If healthcare workers know that reporting their errors can help identify similar gaps and challenges and prevent similar mistakes, they will undoubtedly be more interested in reporting errors. There should also be straightforward error reporting processes so that healthcare workers can register their errors in the shortest amount of time, despite their busy schedules.

This study indicated that the second facilitator of medical error reporting is organizational that includes reward payment, supporting individuals to disclose medical errors, and creating an error reporting system. Evidence revealed that a fault recording system could be considered a powerful tool for further detecting faults and risk factors and may help prevent the occurrence of preventable side effects [38]. In line with the results of this study, Varjavand found that light workload, optimal working conditions, effective systems, sound policies, and procedures are the fascinators of medical error reporting. These findings also indicate the importance of an incentive organization in increasing medical error reporting. The error reporting system should be designed with an incentive approach so that health care providers are more willing to participate in error reporting.

The third facilitator of medical error reporting is cultural, i.e., organizational learning and learning errors and a culture of encouragement versus inspection and punishment. Pattison Jet al. concluded that a just and trusting culture should enhance the likelihood of reporting medical errors. Improved reporting, in turn, should improve patient safety [39]. Another study concluded that instead of punishment, it should be used as a facilitator in the training system's error report and employee encouragement. With a culture that encourages reporting errors and learning, clear guidelines should be communicated [40]. Participants may not be willing to report their mistakes, a cultural issue.

Organizational culture should be easy to inform and support when medical errors occur [41]. These findings confirm that it is impossible to provide a medical error reporting mechanism without considering the organization's culture. In an organizational climate where the individual reporting the error is regarded as a culprit, health workers cannot be expected to report their errors. Health managers should create an environment in which the offender can easily register their mistake without fear of being punished, stigmatized, or fired, and help the health system identify and eliminate factors that could be effective in repeating the errors. This study was conducted only in the maternity ward, operating room, an intensive care unit. Therefore, the results can not be generalized to other sections.

5. Conclusion

The present study results signified that the barriers to reporting medical errors included individual, organizational, and social aspects. Additionally, according to the results of this study, the facility of medical error reporting had education, administrative, and cultural facilities. Findings indicate the necessity for support and security for employees and consideration of facilities to prevent the nonreporting of errors. Managers must provide the necessary personal, professional, and legal support to employees to remove barriers to encourage them to report the mistakes effectively.

Ethical Considerations

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