[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Review Article

Barriers and Facilities in Reporting Medical Errors: A Systematic Review Study

Azadeh Asgarian, Pegah Mahjour[1], Hamidreza Heidari[2], Nasim Khademi[3], Keivan Ghassami[4], Abolfazl Mohammadbeigi[2]

Department of Nursing, Qom University of Medical Sciences, [1]Department of Pharmacology, Qom University of Medical Sciences, [2]Research Center for Environmental Pollutants, Faculty of Health, Qom University of Medical Sciences, Qom, Iran, [3]Department of Midwifery, Nursing and Midwifery Sciences Development Research Center, Najafabad Branch, Islamic Azad University, Najafabad, Iran, [4]Department of Neurology, Faculty of Medicine, Arak University of Medical Sciences, Arak, Iran

Abstract

Introduction: The medical error report is known as the basis for patient safety measures. To increase the frequency of error reporting, it is important to identify selection barriers and remove them over time. We aimed to review the barriers and facilities of medical errors reporting. **Materials and Methods:** A systematic review was conducted on the English and Persian documents published throughout a 10-year period (2010–2020) in PubMed/Medline, Science Direct, Web of Science and Google scholar databases. All documents were assessed for eligibility by titles or abstracts according to the search strategy. The screening process was conducted by two independent authors. The selected articles were checked regarding inclusion and exclusion criteria. **Results:** In total, 231 relevant studies were searched in 2010–2020, and after evaluating the full text of the article, 28 full-text articles were opted in accordance with the eligibility criteria, and finally, 22 full-text articles were reviewed systematically. According to the studies that were analysed, the most common obstacle was the reporting fear of individual and legal charges among health-care personnel. The majority of clinical staff suggested using anonymous reporting systems, modifying the 'blame' culture and the unsuitable behaviour of managers to prevent reporting barriers. **Conclusion:** Based on the up-to-date information on barriers to medical error reporting by the staff, suggestions are made to address the barriers. Efforts to create an effective reporting system will be appropriate for patient care. Furthermore, the correct behaviour of managers will be very effective in dealing with employees' errors and training.

Keywords: Barriers, facilities, medical errors, review

Introduction

Medical errors can cause various damages to patients, hospitals, financial and insurance systems. Hence, reporting medical errors as an important and inevitable issue can prevent the mentioned damages and increases patient safety.[1] On the other hand, due to the current situation and the domineering atmosphere of hospitals, reporting medical errors can have negative consequences, including legal issues, being blamed by colleagues and managers, financial difficulties and being labelled as incompetent.[1,2]

Studies have shown that despite the countless benefits and ethical criteria, nurses reporting errors may be sceptical of diagnosing errors for patients so that they can protect themselves from punishment and administrative rules.[1,3] Error detection is recognised as the basis for maintaining and improving patient safety. Although service providers have a moral and professional obligation to disclose errors, reporting errors among the clinical staff is much lower than the actual rate.[4]

Medical errors are alarmingly frequent,[5,6] with as many as 250,000 deaths/year being attributable to medical errors. Approximately 1%–3% of paediatric hospital admissions are complicated by medical errors. Although not every error causes death, medical errors can significantly affect the course

Address for correspondence: Dr. Abolfazl Mohammadbeigi, Faculty of Health, Qom University of Medical Sciences, Qom, Iran. E-mail: beigi60@gmail.com

Submitted: 05-08-2020 **Revised:** 17-09-2020 **Accepted:** 24-09-2020 **Published:** 06-02-2021

Access this article online

Quick Response Code:

Website: www.aihbonline.com

DOI: 10.4103/AIHB.AIHB_80_20

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Asgarian A, Mahjour P, Heidari H, Khademi N, Ghassami K, Mohammadbeigi A. Barriers and facilities in reporting medical errors: A systematic review study. Adv Hum Biol 2021;11:17-25.

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

of patients' illness and can cause significant morbidity and alter the relationship between the family and the physician.[7] Since harming a patient or someone who is striving to regain his health is incompatible with the philosophy of health care,[8] reporting medical errors prevents potential harm to the patient. This is while patient safety is a key priority in the health system and is focussed on the aim of preventing medical errors before such errors cause death, injury or damage to the patient.[9]

International studies point out the following issues as main barriers: the time required to report, the fear of the consequences of their reporting,[10-12] the lack of feedback, uncertainty about what to report[12,13] because reports often do not lead to positive changes.[13,14] Although underreporting of incidents is well described in the literature, knowing the factors or reasons that cause professionals not to do so is poorly explored and is important for the adoption of specific strategies that improve the reporting process. Although many studies have been done on medical errors, few studies have investigated a comprehensive reporting of barriers and facilities to medical errors in Iran. Therefore, the aim of this study was to conduct a systematic study of articles related to barriers and facilities for reporting medical errors.

Materials and Methods

A systematic review was conducted in a 10-year period from 2010 to 2020 (30 APR) in English and Persian language in four databases, including PubMed/Medline, Science Direct, the web of science and Google scholar. All the related articles were assessed to find the eligible articles whose titles or abstracts addressed barriers and facilitated the reporting process of medical error. We also searched the reference lists of related articles and used them in the review process. The screening process of articles was conducted by two independent authors. The selected articles were checked regarding inclusion and exclusion criteria.

Inclusion criteria

Studies that examined barriers and facilitated the reporting process of medical errors by all clinical staff. All studies were published in 2010–2020 (April 30) in English and Persian.

Exclusion criteria

Studies of randomised and qualitative nature as well as the review of clinical trials and all studies published at the conferences were excluded. Furthermore, studies with confusing results or with incomprehensible analysis and studies showing bias or inconsistency resulting in the choice or bias of information.

Search strategy

To find eligible articles, four databases were searched, including PubMed/Medline, Google Scientist, Web Science and Direct Science. The keywords and search strategies are shown in Table 1. Descriptive data including author, purpose, the place of study, sample size, barrier variables and error reporting facilitator, statistical analysis and the main results are extracted.

Table 1: The key words and search strategies in three different databases

Databases	Key words/ search strategy
PubMed/Medline	medical error* OR Medical Mistake* OR Wrong-Procedure Error* OR Wrong-Site Surgery OR Surgical Error* OR Critical Medical Incident* OR medical errors[Mesh] report* OR disclose* factor* OR predict* OR correlate* OR influence* OR impact* OR barrier* OR facility* OR fear NOT medical error* OR Medical Mistake* OR Wrong-Procedure Error* OR Wrong-Site Surgery OR Surgical Error* OR Critical Medical Incident* OR medical errors[Mesh] report* OR disclose* factor* OR predict* OR correlate* OR influence* OR impact*
Google scholar	medical error AND " disclose
Science direct	medical error AND " disclose, OR Barrie OR impact OR influence impact
Web of science	medical error AND medical mistake

Data extraction

After considering all databases based on our keywords, the proper records were entered into EndNote X8 (Thomson Reuters, New York, USA) and the duplicate records were removed. The titles and abstracts of the searched article were reviewed and screened for eligibility. We then conducted a full review of the related articles based on titles and abstracts for the final selection of articles. The methodological quality of selected articles was conducted based on the STROBE checklist of an observational study. For each article, some information including authors, objectives, place, sample size, statistical analysis, medical error variables and the main results were extracted. Each article was assessed independently by two authors, and then the data were extracted independently. Another author was considered as an arbiter to resolve any disagreements.

Results

The process of searching and selecting literature is illustrated in Figure 1. In total, 231 relevant files from four different databases and their resources were searched during the initial search. After deleting duplicate versions in the Endnote software (Endnote X8, Thomson reuteres Co., New York, USA), 35 articles remained for screening based on titles and abstracts. During the screening process, 176 cases were deleted by checking the titles and abstracts and four cases were evaluated full text. In the evaluation of the whole text of the article, three complete texts were removed and 28 articles with the full text had the criteria to be eligible for the systematic review. Finally, after deleting six articles, 22 full-text articles were included in a systematic review as shown in Table 2.

Finally, 22 articles were reviewed. All articles were cross-sectional and descriptive. The year of publication of the articles varied from 2010 up to 2020. The articles were published in English[8] and the rest of the articles in Persian targeting the clinical staff. The information presented in the

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

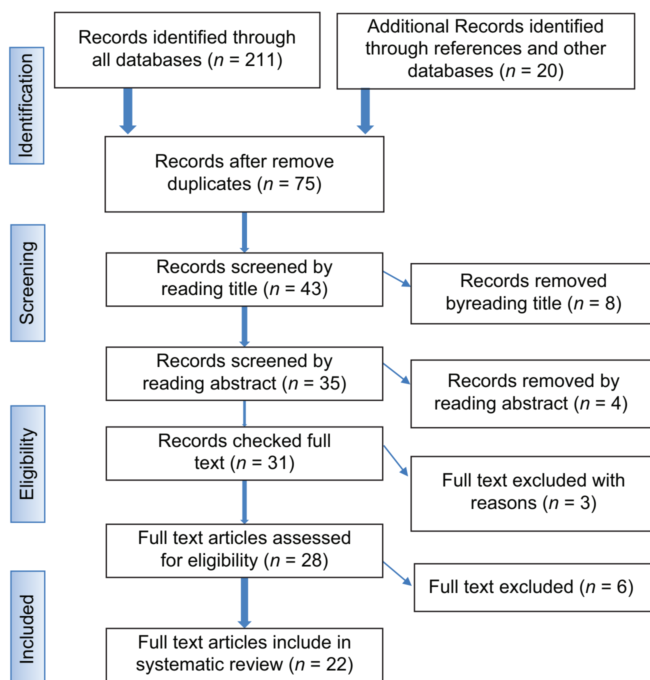

Figure 1: Flow diagram showing the selection of articles for the review process.

articles were all collected from hospitals. After reviewing the research results, barriers to the non-reporting of medical errors in two areas and facilities for removing barriers in three areas were classified. Such barriers included individual barriers and organisational barriers; facilities included educational, organisational and cultural facilities. Of all the factors, individual barriers were the most common.

Barrier factors

Individual barriers to error reporting

Fear

In 11 studies, employees believed that the most important barrier to exposing medical error was in the area of individual fear factors.[15,20-22,24,28,29,31] For example, Kohan *et al*.'s study showed that the fear of error reporting consequences with a mean score of 3.37 is the most important barrier to error reporting.[15,29] In another study, the fear of losing patients' trust (33%) and fear of lawsuits (31%) are the main obstacles to error disclosure.[28] Rutledge *et al*.'s study demonstrated that the highest included barriers to a medical error is related to the nurses' fear of repercussions.[20] Similarly, Ghalandarpoorattar *et al*. revealed that the participants believed that their most important concerns were the following: not revealing the error, the fear of litigation in abuse (71.7%, number = 38) and the loss of trust of patients (62.3%, number = 33 people).[22] In another study, MohammadNejad *et al*. pointed to the feeling of insecurity in the workplace and the risk of employment in the face of reports of medical errors by employees.[3] Finally, Jahromi *et al*. observed that employees are not usually aware of the errors as they said they did not know what to report and were unaware of the error.[23]

The lack of attention to the importance of medical errors

Poorolajal *et al*. reported other reasons behind participants' lack of reporting medical errors: mainly because they do not pay sufficient attention to the importance of medical errors.[19] In the study by Hesari *et al*.[31] and Jahromi *et al*.,[23] it is pointed out that the medical staff are not aware of the error and do not know the clear definition of the error.

Organisational barriers to error reporting

The lack of employee support

Among the reviewed studies, Poorolajal *et al*.,[19] MohammadNejad *et al*.[3] and Zaghloul *et al*.[29] reported that managers do not support employees.

Forgetting the error

In Poor Jalal's study, it was suggested that although some participants make a medical error, they seem to forget it. This may lead to information bias in the results and lead to a decrease in the amount of medical error committed by the study population.[19] Fathi *et al*. showed that the volume of heavy work and the type of shift work is the main reason for nursing staff not reporting errors. They observed that 45.0% of nurses do not report medical errors. The most important reason for not reporting heavy workload was due to a large number of patients.[25] In another study by MohammadNejad *et al*., it was shown that the most common reasons for refraining from reporting drug errors are the fear of its negative impact on financial benefits, the inappropriate or negative attitude of managers towards error reporting and the insignificance of the reports,[3,25] The most important barriers to drug reporting are blaming people instead of blaming the system as reported by Bayazidi *et al*.[21] Furthermore in one study, Mauti *et al*.'s participants reported that 53.8% of health workers believed that there should be no punishment for making medical errors.[30]

Organisational facilities

Error reporting system

Poor Jalal's study depicted that the incidence of medical errors is high, but the rate of reporting is low. This demonstrates the importance of creating an effective reporting system for recording, analysing and managing medical errors in all organisations providing medical services.[19] Furthermore, Zaghloul *et al*. suggested that an anonymous reporting system should be set up to provide unwanted information and errors, with an emphasis on information about care processes as well as the implications of those actions.[29]

Educational facilities

Staff training

Fathi *et al*. suggested that nursing and hospital administrators should conduct regular training courses on the proper and safe use of a variety of nursing medications to reduce errors.[25] Zaghloul *et al*. believed that hospital administrators need to provide training programmes and workshops on the disclosure of accidents and missteps and provide assistance and advice to surgeons and other health-care professionals to help them cope with their mistakes.[17,29]

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Table 2: The summary of included studies in this review based on the extracted data

Row	Authors	Year	Objective	Place	Sample size	Participants	Statistical analysis	Variables	Main results
1	Kohan *et al*.[15]	2016	Error prevention and learning, barriers identify	Beheshti Tehran, Iran	419	Clinical Staff	Descriptive and analysis tests of variance, *t*-test and regression	The fear of error reporting	The fear of error reporting due to reporting consequences
2	Golafrooz *et al*.[16]	2014	To evaluate the nurses' point of view about managerial and moral obstacles in expressing nursing errors	Sabezevar, Iran	201	Nurses	Descriptive and analysis tests of variance, *t*-test	The lack of doctor support from the nurse, endangering a job, feeling insecure at work	Designing appropriate plans from both managerial and moral points of view
3	Zaboli *et al*.[17]	2013	Identifying obstacles reporting errors	Kerman, Iran	267	Nurses	Descriptive	Inadequate response of nursing managers, reprimanding staff, fear of legal problems, excessive workload, lack of opportunity to report errors, lack of adequate support	There was no significant relationship between the level of education, type of award, type of employment and type of hospital with nurses' failure to report errors ($P<0.05$)
4	Yung *et al*.[18]	2016	The attitudes and perceived barriers to reporting MAEs and to understand the characteristics of, and nurses' feelings about error reports	Taiwan	306	Nurses	The *t*-test and Pearson's correlation was used to examine	The major perceived barrier was fear of the consequences after reporting	Fear is the most prominent barrier contributing to underreporting
5	Poorolajal *et al*.[19]	2015	Identify the barriers that keep physicians and nurses from reporting errors	Iran	348	Physicians, nurses, midwives, residents, interns, and staffs of radiology and laboratory	The Chi-square test was used for assessing the correlation between dichotomous variables	The lack of effective medical error reporting system, lack of reporting properly, lack of supporting the person who has committed an error and lack of personal attention to the importance of medical errors	Barriers to reporting medical errors as an essential component for patient safety enhancement
6	D'Errico *et al*.[20]	2015	It is possible to institute a full error disclosure policy	Italian	48	Members of the medical staff in the medical department	The Fisher test	The fear of losing the patients' trust and fear of lawsuits	Several more studies need to be carried out in order to comprehend the economic impact of a full error disclosure policy
7	Bayazidi *et al*.[21]	2012	The purpose of this study was to explore medication error reporting rate and its barriers and facilitators among nurses	Urmia, Iran	107	Nurses	Descriptive statistics	The most important barriers of reporting medical errors were blaming individuals instead of the system, consequences of reporting errors and fear of reprimand and punishment	To train nurses and hospital administrators on facilitators and barriers of error reporting in order to enhance patient safety

Contd...

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Table 2: Contd...

Row	Authors	Year	Objective	Place	Sample size	Participants	Statistical analysis	Variables	Main results
8	Ghalandarpoorattar *et al*.[22]	2012	To evaluate the attending surgeons' and residents' attitudes towards error disclosure and factors that can potentially affect these tendencies in major academic hospitals	Tehran, Iran	63	Residents	Descriptive statistics	Fear of a malpractice lawsuit (71.7%, n=38), losing patients' trust (62.3%, n=33), and emotional reactions of the patients and their relatives (56.6%, n=30)	Education in medical error management to professionally support error disclosure might help reduce the gap
9	Bayazidi *et al*. and Jahromi *et al*.[21,23]	2014	To determine several factors associated with not reporting medical errors from medical team's points of view	Jahrom, Iran	300	Nursing, midwifery, paramedical and medical groups	Descriptive statistics, correlation analysis	Professional errors were related to severity and emergency of errors/managers' focus on wrongdoers instead of noticing systematic factors of errors/fear of legal prosecution by patients or their relatives/in patients, unawareness of errors	Factors related to errors and managers were more important than other reason
10	Cramer *et al*.[24]	2012	The aim of this study was to gain insight into the reporting of errors as perceived by nurses employed in inpatient health-care facilities	German	1100	Nurses	Descriptive statistics	Did not know what events should be reported Feared repercussions and mentioned a lack of feedback on error reports	Reporting behavior was also related to the perception of factors concerning the organization
11	Fathi *et al*.[25]	2017	To examine the prevalence and types of MEs, as well as barriers to reporting MEs	Iran	500	Nurses	Binomial regression	A heavy workload due to a high number of patients being male, having a second unrelated job and fixed shift work	Appropriate strategies should be developed to address MEs and improve patient safety in hospital settings
12	Heard *et al*.[26]	2012	Factors affecting their reporting of adverse events and errors	Australian	433	Nurses	Nonparametric descriptive and inferential tests	Individual and organisational factors were the barriers to reporting ME	The most favored assistive strategies for reporting were generalized identified feedback about adverse event and error reports, role models such as senior colleagues who openly encourage reporting and legislated protection of reports from legal discoverability
13	Khammarnia *et al*.[27]	2015	To describe MEs and barriers to reporting them	Shiraz, Iran	4379	Nurses	Chi-square test, Pearson test	Individual and organisation factors were the barriers to reporting ME in the studied hospitals	Paying more attention to individual and organizational factors in error reporting

Contd...

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Table 2: Contd...

Row	Authors	Year	Objective	Place	Sample size	Participants	Statistical analysis	Variables	Main results
14	Rutledge *et al*[28]	2018	To report medication error reporting barriers	California (United States)	357	Nurses	Factor analysis, f	The highest barriers concerning the time-consuming nature of medication error reporting and four related to nurses' fear of repercussions	Barriers to medication error reporting make it less likely that nurses will report medication errors, especially errors where patient harm is not apparent or where an error might be hidden
15	Zaghloul *et al*.[29]	2018	To develop a valid and reliable scale to determine the factors facilitating the disclosure of health professionals in health organizations	The United Arab Emirates	722	Nurses	The Bartlett test of sphericity/the varimax rotation/correlation matrix	The fear of disclosure and provider image consequences (factor 1), apology (factor 2), organisational culture towards patient safety (factor 3), professional ethics and transparency (factor 4), as well as patient and provider education (factor 5)	The disclosure of medical mistakes requires preliminary considerations to effectively and compassionately disclose these events to patients
16	Bayazidi *et al*.[21]	2012	To explore medication error reporting rate and its barriers and facilitators among nurses	Iran, Urmia	733	Nurses	Descriptive statistics	Errors were blaming individuals instead of the system, consequences of reporting errors and fear of reprimand and punishment	To train nurses and hospital administrators on facilitators and barriers of error reporting in order to enhance patient safety
17	Mauti and Githae[30]	2019	Establish factors influencing error reporting	Africa	167 nurses and 18 physicians	Physicians and nurses	Descriptive statistics	Law does not protect medical error reporting punishing health workers who report medical errors	Health workers who report medical errors should not be punished
18	Hesar *et al*.[31]	2015	The aim of this study was to determine the causes of medication errors and the barriers of error reporting from the viewpoints of nurses	Neyshabur, Iran	248	Nurses	Descriptive and inferential statistics	The main reasons for not reporting medication errors were as follows: authorities' focusing on the person who has made the error regardless of other factors involved (3.86±1.06), fear of legal issues (3.79±1.07), and lack of clarity of the definition of medication error (3.34±1.13). There was a significant difference between the factors affecting medication errors from the view of nurses, and fixed and rotating work shifts ($P<0.05$)	Due to the importance of patient safety, establishing a system for reporting and recording errors along with the positive reaction of managers to errors by personnel is essential
19	Mirzaei *et al*.[32]	2015	Investigate the prevalence and types of medication errors and barriers to reporting errors by nurses	Kermanshah, Iran	96	Nurses	Descriptive	Barriers related to administrative issues were more highlighted than the staff relating barriers	Using management strategies to encourage nurses to report errors are recommended

Contd...

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Table 2: Contd...

Row	Authors	Year	Objective	Place	Sample size	Participants	Statistical analysis	Variables	Main results
20	Almutary and Lewis[33]	2012	To determine how frequently RNs report MAEs when practicing in Saudi Arabia. A secondary aim was to identify potential factors that may contribute to the no reporting of MAE	Saudi Arabia		Nurses	Chi-square test of independence	Using administration was the largest impediment affecting nurses' willingness to report MAEs	Changing attitude to a non-blame system and implementation of anonymous reporting systems may encourage a greater reporting of MAEs
21	Sarvadika *et al*.[34]	2012	Investigate attitudes of health-care professionals (doctors, nurses and pharmacists) in reporting medication errors	Scotland	56	Doctors, nurses and pharmacists	Descriptive	Their fears of receiving disciplinary action	Required to encourage medication error reporting among different healthcare professionals
22	Mohammadnejad, *et al*.[3]	2013	Refusal in reporting medication errors from the perspective of nurses in emergency ward	Tehra, Iran	94	Nurses	Descriptive	Fear and effect in the salary, incorrect behaviour managers, lack of attention to the importance of medical errors	Correct behavior managers Removing the barrier

MEs: Medication errors, MAEs: Medication administration errors, RNs: Registered nurses

The correct behaviour of managers

Fathi showed that due to the high rate of report refusal, it is necessary to create some suitable conditions to increase the level of reporting and remove obstacles. Nursing managers need to respond positively to nurses' reports.[25] In her study, Hesari argued that the main reason for not reporting drug errors is that the authorities mostly focus on the person who made the mistake, regardless of other factors involved,[31] likewise, the inappropriate response of managers to the announcement of medical errors by employees is one of the issues raised in Mohammad Nejad's study.[3]

Cultural facilities

Avoid blame staff

Numerous studies have suggested a change in the behaviour of managers in the face of employees' error reports.[21,35] Effective feedback for corrective action can be used to remove barriers to fear and punishment and blaming the staff.

Facilitative and preventive factors extracted from included studies based on content analysis and showed in Table 3. According to these results, seven factors could facilitate the disclosure of errors and 14 factors were believed to prevent it. Many factors were believed to facilitate error, including promoting organisational culture, developing professional ethics in employees, reporting errors, creating error reporting systems, not blaming and punishing employees, as well as continuous training and the correct behaviour of managers against error reporting factors in reporting barriers to include the fear of the consequences of error, distrust, lack of support from managers, an inappropriate response from managers, forgetting mistakes, lack of importance of error and blame and punishment of individuals.

Discussion

The present review was conducted to investigate the barriers and facilities for reporting medical errors among clinical staff in Iran. Since the goal of the health system is to promote the health of human societies and safety is one of the main concerns of the health-care system, reporting medical errors by clinical staff is essential.[16]

The results showed that the fear of litigation and legal problems, the fear of losing patients' trust and the fear of the consequences of reporting an error are considered as the most important barriers to reporting medical errors due to individual reasons. Studies in other countries, such as Italy and Germany, are the most important barriers to the fear of losing patients' trust and legal issues[20] as well as the fear of the consequences of reporting an error and lack of proper feedback.[24] This causes clinical staff to be afraid of reporting errors and to hide those errors.

Error reporting includes the lack of importance of errors and the lack of awareness of the staff's misinterpretation. In several studies, participants reported that they are unaware of the definition of error and do not know what to report.[21,19,33]

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Table 3: Impeding and facilitating error disclosure

Categories	Theme	Subtheme	Studies
Barriers	Individual barriers	Fear	11 studies[15,18,20,22,23,28,29,31,34,36]
		Lack of attention to the importance of medical errors	1 study[19,23,31]
		A sense of distrust	2 studies[16,20]
		Blame staff	1 study[19]
	Organizational barriers	Lack of staff support	4 studies[3,19,16,29]
		Forget the error	5 studies[3,19,21,25,30]
		Inadequate response from managers	6 studies[3,17,23,31-33]
		Lack of feedback from error report	1 study[36]
Facilities	Organizational facilities	Error reporting system	2 studies[19,28]
	Educational facilities	Staff training	2 studies[25,29]
		Correct behaviour of managers	4 studies[17,25,31,33]
	Cultural facilities	Avoid blame staff	2 study[21,35]

To solve this problem, training facilities can be used for employees so that they can be identified and reported with accurate information about the definition of the error so that errors are not repeated over and over by other people.

Two managerial obstacles include not reporting medical errors and the lack of attention and support from managers to remove obstacles. That requires the full support of managers, especially the nursing manager, against the mistake made and the use of patient safety culture instead of punishment. Therefore, in-service training and changing the way of dealing with the culprit is one of the important issues in the field of patient health and safety.[2,34] Another obstacle to reporting errors is the blaming of the staff by doctors and a study[34] in this regard found that physicians report fewer errors than nurses. Similarly, it was emphasised in another study that managers' attitudes towards the person making an error should change to make reporting easier and reduce errors.[3]

Forgetting errors is another barrier to reporting medical errors because of the number of patients and the degree the staff is busy, which makes them forget errors or even try to hide them. In a study carried out by Sidi, the forgotten error rate of 8.59% has been announced by the participants.[37] Another study also noted the time-consuming nature of error reporting and the lack of time by 72.5%.[2] The importance of the lack of time and overwork in reporting errors has been pointed out in other studies.[10,13] In the current study, in addition to the barriers to reporting errors, attention was paid to the barrier facilitator. This variable is mentioned in the articles. One of the most important facilitators is the existence of an error reporting system in medical centres. Research conducted in Neishabour demonstrated that the development of an error reporting system can increase patient safety.[1] This issue has also been mentioned in the study by Hesari *et al*.[31] In the same vein, reporting errors by health-care staff should be far from bureaucratic and hierarchical issues; otherwise, people would be reluctant to report unforeseen events.[38]

Other facilitators include patient safety culture, dealing with work errors, error analysis and causation that are effective in reducing error management by managers. Several studies have suggested a change in the behavioural approach of nursing managers.[1,4,32] The training outcome can also be used to reduce medical errors and eliminate barriers to error reporting. Providing appropriate feedback after reporting errors to employees and training them can be effective in removing barriers.[24]

Since the most important barriers to reporting errors are the fear of the consequences of reporting, limited time, blame and punishment in prospective studies. The issue of fear among employees must be resolved and strategies need to be encouraged by managers. In the case of reporting errors, positive feedback will be given to employees and disciplinary measures, especially effective feedback will be reduced, which can lead to fundamental corrective actions.[21,35]

Medical errors are one of the most important and influential factors in the quality of care and clinical consequences, having a significant economic effect. The results of the present study showed that balloon workers face obstacles in reporting medical errors. Given the importance of patient safety, it is essential that officials take steps to address barriers to reporting by adopting measures such as error training, the existence of an easy error registration system, improving patient safety culture and changing managers' behavioural approaches. Nevertheless, one of the limitations of this study was that articles with acceptable entry criteria and quality were identified and reviewed, but some papers or unpublished studies might have gone missing. In addition, the present study only reviewed articles published in Persian or English. Therefore, articles published in other languages were not included in the study due to linguistic limitations.

Conclusion

Based on up-to-date information on barriers to medical error reporting by staff, suggestions are made to address the barriers. Efforts to create an effective reporting system will be appropriate for patient care. Similarly, the correct behaviour of managers will be very effective in dealing with employee error and training.

[Downloaded free from http://www.aihbonline.com on Saturday, February 6, 2021, IP: 80.191.92.194]

Acknowledgements

The authors are willing to express their gratitude to the Deputy Minister of Research and Development Technology, Qom University of Medical Sciences Qom, Iran for supporting this study.

Financial support and sponsorship

This study supported financially by Qom University of Medical Sciences.

Conflicts of interest

There are no conflicts of interest.

References

1. Hosseinzadeh M, Ezate Aghajari P, Mahdavi N. Reasons of nurses' medication errors and persepectives of nurses on barriers of error reporting. J Hayat 2012;18:66-75.
2. Musarezaie A, Momeni GG, Zargham BA, Haj SE. Survey of the Medication Errors and Refusal to Report Medication Errors from the Viewpoints of Nurses in Hospitals Affiliated to Isfahan University of medical sciences, Iran; 2013.
3. MohammadNejad E, Ehsani SR, Salari A, Sajjadi A, HajiesmaeelPour A. Refusal in reporting medication errors from the perspective of nurses in emergency ward. J Res Develop Nurs Midwifery 2013;10:61-8.
4. Salavati S, Hatamvand F, Tabesh H. Nurses' Perspectives on causes of medication errors and non-reporting at ED. Iran J Nurs 2012;25:72-83.
5. Toghian Chaharsoughi N, Nasr-Esfahani M, Sodoury MS. Prevalence and types of medical errors at a trauma center in Isfahan, Iran (2018-2019). J Patient Safety Quality Improvement 2020;8:85-91.
6. Askarian M, Mahdi Sherafat S, Ghodsi M, Shayan Z, Palenik C, Hatam N. Prevalence of non-reporting of hospital medical errors in the Islamic Republic of Iran.East Mediterr Health J 2019;25: doi.org/10.26719/emhj.19.050.
7. Soydemir D, Seren Intepeler S, Mert H. Barriers to medical error reporting for physicians and nurses. West J Nurs Res 2017;39:1348-63.
8. Marin HF. Improving patient safety with technology. Int J Med Inform 2004;73:543-6.
9. Hov R, Hedelin B, Athlin E. Good nursing care to ICU patients on the edge of life. Intensive Crit Care Nurs 2007;23:331-41.
10. Yu A, Flott K, Chainani N, Fontana G, Darzi A. Patient safety 2030. London: NIHR Imperial Patient Safety Translational Research Centre; 2016. p. 45.
11. Michel P. Strengths and Weaknesses of Available Methods for Assessing the Nature and Scale of Harm Caused by the Health System: Literature Review. World Health Organization; 2003.
12. Mira JJ, Cho M, Montserrat D, Rodríguez J, Santacruz J. Elementos clave en la implantación de sistemas de notificación de eventos adversos hospitalarios en América Latina. Revista de la Sociedad Boliviana de Pediatría 2013;52:67-77.
13. Pfeiffer Y, Manser T, Wehner T. Conceptualising barriers to incident reporting: A psychological framework. Qual Saf Health Care 2010;19:e60.
14. Shojania KG. The frustrating case of incident-reporting systems. Qual Saf Health Care 2008;17:400-2.
15. Kohan AD, Mahfoozpour S, Palesh M, Ouchhesar FF. Assessing barriers to medical errors reporting among clinical staff members of teaching hospitals affiliated with Shahid Beheshti University of Medical Sciences in Tehran-2016. J Health Field 2018;5 (3):19740-45.
16. Golafrooz M, Sadeghi H, Ghaedi F, Tabarraei Y, Keighobadi F, Keighobadi F. Managerial and moral obstacles in reporting nursing errors: Nurses' view point. J Med Ethics History Med 2014;7(1):1-12.
17. Zaboli R, Abbaszade A, Shahabinejad M. Assessing the barriers of error reporting from perspective of nurses in Kerman hospitals. Med Ethics J 2016;10:31-53.
18. Yung HP, Yu S, Chu C, Hou IC, Tang FI. Nurses' attitudes and perceived barriers to the reporting of medication administration errors. J Nurs Manag 2016;24:580-8.
19. Poorolajal J, Rezaie S, Aghighi N. Barriers to medical error reporting. Int J Prev Med 2015;6:97.
20. D'Errico S, Pennelli S, Colasurdo AP, Frati P, Sicuro L, Fineschi V. The right to be informed and fear of disclosure: Sustainability of a full error disclosure policy at an Italian cancer centre/clinic. BMC Health Serv Res 2015;15:130.
21. Bayazidi S, Zarezadeh Y, Zamanzadeh V, Parvan K. Medication error reporting rate and its barriers and facilitators among nurses. J Caring Sci 2012;1:231-6.
22. Ghalandarpoorattar SM, Kaviani A, Asghari F. Medical error disclosure: The gap between attitude and practice. Postgrad Med J 2012;88:130-3.
23. Jahromi ZB, Parandavar N, Rahmanian S. Investigating factors associated with not reporting medical errors from the medical team's point of view in Jahrom, Iran. Global J Health Sci 2014;6:96.
24. Cramer H, Foraita R, Habermann M. Error reporting from a nurse's point of view: Results of a survey in nursing homes and hospitals. Gesundheitswesen (Bundesverband der Arzte des Offentlichen Gesundheitsdienstes (Germany) 2014;76:486-93.
25. Fathi A, Hajizadeh M, Moradi K, Zandian H, Dezhkameh M, Kazemzadeh S, *et al*. Medication errors among nurses in teaching hospitals in the west of Iran: What we need to know about prevalence, types, and barriers to reporting. Epidemiol Health 2017;39:e2017022.
26. Heard GC, Sanderson PM, Thomas RD. Barriers to adverse event and error reporting in anesthesia. Anesth Analg 2012;114:604-14.
27. Khammarnia M, Ravangard R, Barfar E, Setoodehzadeh F. Medical Errors and Barriers to Reporting in Ten Hospitals in Southern Iran. Malays J Med Sci 2015;22:57-63.
28. Rutledge DN, Retrosi T, Ostrowski G. Barriers to medication error reporting among hospital nurses. J Clin Nurs 2018;27:1941-9.
29. Zaghloul AA, Elsergany M, Mosallam R. A measure of barriers toward medical disclosure among health professionals in the United Arab Emirates. J Patient Saf 2018;14:34-40.
30. Mauti G, Githae M. Medical error reporting among physicians and nurses in Uganda. Afr Health Sci 2019;19:3107-17.
31. Hesari B, Ghodsi H, Hoseinabadi M, Chenarani H, Ghodsi A. A survey of nurses' perceptions of the causes of medication errors and barriers to reporting in hospitals affiliated to Neyshabur university of medical sciences, Iran. J Kerman Univ Med Sci 2015;21:105-11.
32. Mirzaei M, Khatony A, Faramani RS, Sepahvand E. Prevalence, Types of medication errors and barriers to reporting errors by nurses in an educational hospital in Kermanshah.Hayat 2013;19(3):1-10.
33. Almutary HH, Lewis PA. Nurses' willingness to report medication administration errors in Saudi Arabia. Qual Manag Health Care 2012;21:119-26.
34. Sarvadikar A, Prescott G, Williams D. Attitudes to reporting medication error among differing healthcare professionals. Eur J Clin Pharmacol 2010;66:843-53.
35. Martowirono K, Jansma JD, van Luijk SJ, Wagner C, Bijnen AB. Possible solutions for barriers in incident reporting by residents. J Eval Clin Pract 2012;18:76-81.
36. Cramer H, Pohlabeln H, Habermann M. Factors causing or influencing nursing errors as perceived by nurses: Findings of a cross-sectional study in German nursing homes and hospitals. J Public Health 2013;21:145-53.
37. Seidi M, Zardosht R. Survey of Nurses'Viewpoints on Causes of Medicinal Errors and Barriers to Reporting in Pediatric Units in Hospitals of Mashhad University of Medical Sciences. J Fasa Univ Med Sci 2012;2:142-7.
38. Alves MF, Carvalho DS, Albuquerque GSC. Barriers to patient safety incident reporting by Brazilian health professionals: An integrative review. Cien Saude Colet 2019;24:2895-908.