

# Evaluating the Effective Factors for Reporting Medical Errors among Midwives Working at Teaching Hospitals Affiliated to Isfahan University of Medical Sciences

## Abstract

**Background:** Recently, evaluation and accreditation system of hospitals has had a special emphasis on reporting malpractices and sharing errors or lessons learnt from errors, but still due to lack of promotion of systematic approach for solving problems from the same system, this issue has remained unattended. This study was conducted to determine the effective factors for reporting medical errors among midwives. **Materials and Methods:** This project was a descriptive cross-sectional observational study. Data gathering tools were a standard checklist and two researcher-made questionnaires. Sampling for this study was conducted from all the midwives who worked at teaching hospitals affiliated to Isfahan University of Medical Sciences through census method (convenient) and lasted for 3 months. Data were analyzed using descriptive and inferential statistics through SPSS 16. **Results:** Results showed that 79.1% of the staff reported errors and the highest rate of errors was in the process of patients' tests. In this study, the mean score of midwives' knowledge about the errors was 79.1 and the mean score of their attitude toward reporting errors was 70.4. There was a direct relation between the score of errors' knowledge and attitude in the midwifery staff and reporting errors. **Conclusions:** Based on the results of this study about the appropriate knowledge and attitude of midwifery staff regarding errors and action toward reporting them, it is recommended to strengthen the system when it comes to errors and hospitals risks.

**Keywords:** Medical errors, midwife, reporting errors

## Introduction

Medical error, which has been defined as failure in a preplanned action or using a wrong pattern for reaching the desired goal,<sup>[1]</sup> is one of the most concerning issues in the field of medicine because as statistics show even in the most advanced medical facilities, many patients would suffer great losses annually due to medical malpractice.<sup>[2]</sup> According to the reports of American Medical Association, each year many patients have lost their lives because of this preventable process.<sup>[3]</sup>

Studies have shown that many factors like human, organizational, and factors related to patients are effective on medical malpractice,<sup>[4]</sup> and among them, human factors are the most common causes of medical malpractice.<sup>[5]</sup>

All the members of the medical team and especially midwives, regardless of how skilled and dedicated they are, could make mistakes while taking care of

patients.<sup>[6]</sup> The most important mistakes that would make patients or their families to file complaints against the medical team include death or complications for pregnant mothers or children,<sup>[7]</sup> which are unacceptable errors in the opinion of health system managers and therefore error reduction strategies have always been one of their job's priorities.<sup>[8]</sup>

Medical malpractice management has always considered disclosure of medical malpractice, especially when it comes to the health of mothers, as an important strategy for decreasing errors; that is, appropriately notifying people about the safety of their patients and mutual communication between authorities, patients, and their families about the occurred mistakes and making effort to compensate for them are some of the most important indicators of medical malpractice management, which have a significant role in decreasing errors and preventing such reoccurrence.<sup>[9]</sup>

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**Fahimeh Khorasani<sup>1</sup>, Marjan Beigi<sup>1</sup>**

<sup>1</sup>Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

## Address for correspondence:

Dr. Marjan Beigi,  
Department of Midwifery,  
School of Nursing and  
Midwifery, Isfahan University of  
Medical Sciences, Isfahan, Iran.  
E-mail: beige@nm.mui.ac.ir

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However, studies have shown that most of the medical malpractices are not reported and this is one of the most concerning matters in the health system.<sup>[10]</sup>

Effective factors for not reporting errors in Iran are fear from managerial section and fear of the consequences of reporting, which is caused by lack of knowledge about this process.<sup>[11]</sup> In a study that was conducted in the US, the effective factors for not reporting errors were mentioned to be damage to the nature of career, lack of information, organizational factors, and fear.<sup>[12]</sup> However, a study that was conducted in Europe revealed that reporting errors could be increased by support of managers for the reporter and teaching the personnel about the aims of reporting.<sup>[13]</sup> Currently, by reviewing related incidences to death or complications caused for pregnant mothers we could see the similarity between errors that were occurred at similar situations; the main reasons for this matter could be not reporting the errors by the medical team and not analyzing or inappropriate analysis of the errors by authorities despite the reporting by the staff. Analysis of errors, especially when it comes to the health of vulnerable groups like mothers and infants, which are the valuable indicators of the health system, besides preventing more severe damages to the patient who has suffered the error, could also prevent the occurrence of the same mistake again. This subject is totally comprehensible for the researcher, who, as a midwife and maternal health specialist, is reviewing the files of maternal deaths at the executive department of treatment deputy, and believes that they require evaluation and investigation. Therefore, this study was conducted to evaluate the effective factors on reporting medical errors among midwives.

## Materials and Methods

The present study was a descriptive correlational study in 2015 and its data gathering method was cross sectional. Study population for this research was all the midwives who worked at four teaching hospitals affiliated to Isfahan University of Medical Sciences, which were selected according to their similar management and resources. Sampling method for this study was census method, which selected available and categorical samples. The estimated sample size was 110, according to the hospitals human resources, which after considering the exclusion criteria (having a work experience of more than 1 year), was reduced to 86 samples. After taking informed consent from the participants and assuring them about the confidentiality of their information and answers, data gathering tools (checklist for occurrence of medical malpractice and knowledge and attitude toward occurrence of medical malpractice questionnaires) were completed.

The checklist included 70 questions and 7 categories for errors that included: 1) Diagnostic error, 2) Medicinal errors, 3) Errors related to infection control precautions, 4) Errors in the process of documentation, 5) Errors in admission, discharge and transfer of women in labor, 6)

Laboratory errors, and 7) Errors in the process of delivery. The minimum score for occurrence of errors in midwives was 0 and the maximum score was 140.

In this study, two researcher-made questionnaires about the knowledge and attitude of midwives toward reporting medical malpractices were used. Knowledge questionnaire included 17 questions about definition of malpractice, types of malpractice, and process of reporting the malpractice. The attitude of midwives toward reporting malpractices in three dimensions of cognitive, emotional, and behavioral was evaluated using a 13-question questionnaire.

In both questionnaires, correct answers had a score of 1 and wrong answers had a score of 0 and for evaluating these tools, the scores were categorized as less than 20 (very weak), 20–40 (weak), 40–60 (moderate), 60–80 (well), and 80–100 (very well). To evaluate the validity of the questionnaire, first the method of judgment of experts (academic members of midwifery and forensics medicine departments) was used meaning that the prepared questionnaires were given to 10 selected professors and academic members of the university and they were asked to express their opinions about their content, structure, appearance, and writing style. The reliability of the questionnaires was approved using internal consistency index (Cronbach's  $\alpha$ ) and Cronbach's  $\alpha$  for both knowledge and attitude questionnaires that were more than 0.8 (knowledge: 0.83, attitude: 0.88). Data were gathered by the researcher for 3 months from July 2015 to September 2015 and then analyzed using SPSS 16 (SPSS inc. Chicago. il. USA).

## Ethical considerations

A full description of the research objectives and methods to officials of all units of the research centers was conducted orally and in written form. Written consent of the subjects under study before the study was obtained. This study was approved by ethics committee of the university and adopted from research project No. 394271.

## Results

Demographic characteristics of the subjects were investigated [Table 1]. Results showed that the mean score of error occurrence in midwives was 20.13 and the highest score of error occurrence was 23.54, which belonged to laboratory errors. Also, in the present study 79.12% of the midwives have reported malpractices during their working years and the mean scores of knowledge and attitude in the personnel were 79.12 and 70.41, respectively, and there was a direct relation between the score of knowledge and attitude with reporting medical malpractices ( $p < 0.001$ ). Also, there was a direct relation between the mean score of knowledge of midwifery personnel and the state of reporting medical malpractice ( $p = 0.02$ ), and also the mean score of attitude and the state of reporting medical malpractice ( $p < 0.001$ ). Spearman correlation

coefficient showed that in all the participants, a direct correlation existed between the score of error occurrence and its different dimensions and the state of reporting errors ( $p < 0.02$ ) [Table 2].

## Discussion

Results of the present study showed that most of the medical malpractices among midwives were in the field of laboratory and its reason could be due to the type of activities performed by the midwives of this study. Two out of four hospitals in this study were teaching hospitals where most of the deliveries are performed by students and interns and the midwifery personnel are mostly involved in admission, hospitalization, and care processes and sending and repeating test results for pregnant women, especially for those who have diseases or are at high risks; therefore, the probability of occurrence of errors is higher in this field. It must be noted that most of the errors in midwives occurred during the morning shift, which has the highest rate of patient admission and request for tests. Results of a study titled "Medical malpractice in neonatal intensive care unit" stated that medicinal errors were higher than the others,<sup>[14]</sup> which is not similar to the results of our study because the diversity of drugs in labor and midwifery wards is less than other departments (mostly used drugs in midwifery and maternity wards are supplements and two antibiotics, Keflin and Ampicillin); therefore, midwives would face less medicinal errors than nurses.

Results of the present study showed that the knowledge and attitude of midwives toward reporting medical malpractices were high and positive, in a way that 79.12% of midwives

have reported errors during their period of working. Also, there was a direct correlation between the score of knowledge and the state of reporting errors and the score of attitude and the state of reporting errors ( $p < 0.001$ ); there was also a direct correlation between the score of error occurrence and its different fields and the state of reporting errors ( $p < 0.05$ ).

The rate of reporting mistakes by midwives which was 70% and high knowledge and positive attitude of midwives toward reporting errors could be due to passing educational courses about clinical governance system, reporting system process, and their acquaintance with reporting forms and emphasize on these subjects after healthcare reform plan.

The relation between knowledge and attitude with reporting errors could be caused by appropriate and optimized performance of evaluation and accreditation system of deputy of treatment about implementation of effective laws on treatment process. In this system, appropriate knowledge would lead to better attitude and consequently would change the behavior of healthcare system personnel. Regarding the results of the present study, there have been similar and not similar studies that are as follows:

Results of a study in Europe (2010) titled "Attitudes to reporting medication error among differing healthcare professionals" showed that physicians had no desire to report small medication errors in scenarios but nurses and pharmacists agreed to report errors in scenarios.<sup>[15]</sup> Results of a study in Iran, titled "Determining the attitude of medical assistants toward self-reporting medical malpractice and its common effective factors", revealed that 66.4% of assistants were agreed to report serious medical errors to patients, 36% were agreed to report mild errors and more than half of them (60%) were agreed to report imminent errors to patients.<sup>[16]</sup> It seems that in that study personal characteristics and attitudes of assistants, regardless of their knowledge due to systematic notification, have been effective on reporting or not reporting medical errors. Results of a study that was conducted in 2010 to determine the relation between error occurrence and reporting errors with the work condition among nurses stated that the mean of medication errors during 3 months for each nurse was 19.5 times and the mean of reporting medication errors during 3 months was 1.3 times for each nurse.<sup>[17]</sup> In another study titled "Studying the frequency of medication error occurrence and the condition of reporting them according to nurses based on self-reporting in hospitals of Khoy" it was revealed that the mean of medication errors was 28.93%, the mean of reporting them was 14.43%<sup>[18]</sup> and the relation between the frequency of medication errors and reporting them was significantly meaningful but these results were not similar to the results of our study.

Comparing the results of the present study with these mentioned studies, it could be stated that the reason for higher rate of reporting errors among midwives in comparison to nurses and physicians, is higher sensibility

**Table 1: Demographic characteristics of the participants**

Characteristic	Percent
Age (years)	46.51 (age area: 26-35)
Level of education	0.90.70( Bachelor's degree)
Married	74.12
Shift work	86 (in circulation)
Ward	81.44(labor)
Work experience	34.92(<5 years)

**Table 2: Spearman correlation between the score of error occurrence and their field in midwifery staff with the status of reporting medical errors**

Status of reporting errors	Midwifery staff	
	r	p
Total score of error occurrence	0.75	<0.001
Errors associated with infection control precautions	0.53	<0.001
Laboratory errors	0.29	0.004
The occurrence of errors during admission and discharge and transfer of in-labor women	0.64	<0.001
Errors occurring during delivery processes	0.67	<0.001
Medication errors	0.70	<0.001



of authorities toward midwives about the important index of mothers' health, which is the community development index. Therefore, reporting errors among midwives has been strengthened to improve the quality of provided care. Results of the present study showed that there was a direct correlation between the score of knowledge and attitude with reporting medical errors ( $p < 0.001$ ). In other words, midwives with more knowledge had more positive attitude toward the system of reporting medical errors. Results of a study titled "Knowledge and attitude of physicians and paramedics about patients' rights declaration in hospitals affiliated to medical universities in Iran" also demonstrated that 53.3% of interviewed participants who were physicians and other medical staff (midwives, operating room technicians ...) were aware of patients' rights declaration, which reporting errors was a part of. The mean score of knowledge was 16.38 out of 20, which indicated high knowledge of the participants about patients' rights declaration. The mean score of attitude was 17.09 out of 20, which indicated the positive attitude of the study population and there was a significant relation between the score of knowledge and the score of attitude.<sup>[19]</sup> In all the mentioned studies, the significant relation between the score of knowledge and attitude of participants indicated that by increasing the knowledge about reporting errors, the right attitude toward this valuable process would be gained. Results of a study that was titled "Evaluating knowledge, attitude and performance of physicians of Sari about side effects of reporting system for drugs" (2003) showed that 25% of physicians were aware of reporting system, which among them 78% were general physicians and 22% were specialists. In this study, unwillingness to and inappropriate attitude toward reporting errors was due to lack of confidence to the reporting system caused by lack of appropriate information about the performance of this system.<sup>[20]</sup> The researcher assured the midwives who were working at selected hospitals that their information would remain confidential but since the midwives were not completely sure (since they have reported the medical errors), some of them may have not reported all of the occurred errors because they were afraid of risking their career and this matter could not be controlled by the researcher.

## Conclusion

Results of the present study showed that midwifery personnel do continuously and consecutively report medical errors and this is caused by their knowledge about and consequently appropriate attitude toward the process of reporting errors. Therefore, based on the results of this study, improving errors and hospital risks committees for developing effective strategies after error analysis is necessary.

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## Conflicts of interest

There are no conflicts of interest.

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