Original Article

Recognition of medical errors' reporting system dimensions in educational hospitals

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ABSTRACT

Introduction and Objective: Nowadays medical errors are one of the serious issues in the health-care system and carry to account of the patient's safety threat. The most important step for achieving safety promotion is identifying errors and their causes in order to recognize, correct and omit them. Concerning about repeating medical errors and harms, which were received via theses errors concluded to designing and establishing medical error reporting systems for hospitals and centers that are presenting therapeutic services. The aim of this study is the recognition of medical errors' reporting system dimensions in educational hospitals. **Materials and Methods:** This research is a descriptive-analytical and qualities' study, which has been carried out in Shahid Beheshti educational therapeutic center in Isfahan during 2012. In this study, relevant information was collected through 15 face to face interviews. That each of interviews take place in about 1hr and creation of five focused discussion groups through 45 min for each section, they were composed of Metron, educational supervisor, health officer, health education, and all of the head nurses. Concluded data interviews and discussion sessions were coded, then achieved results were extracted in the presence of clear-sighted persons and after their feedback perception, they were categorized. In order to make sure of information correctness, tables were presented to the research's interviewers and final the corrections were confirmed based on their view. **Finding:** The extracted information from interviews and discussion groups have been divided into nine main categories after content analyzing and subject coding and their subsets have been completely expressed. Achieved dimensions are composed of nine domains of medical error concept, error cases according to nurses' prospection, medical error reporting barriers, employees' motivational factors for error reporting, purposes of medical error reporting system, error reporting's challenges and opportunities, a desired system characteristics, and the quality of error experiences' transmission in the health-care system. **Conclusion:** Although, appropriate achievements have been assured in Shahid Beheshti Hospital, but it seems necessary that in order to immune promotion not only in this hospital, but in the other organizations, necessary infrastructures have been provided for an error reporting system performance. An appropriate medical error reporting system could be educated and prevent the occurrence of repeated errors.

Key words: Error reporting, error reporting system, error's evaluation, medical errors hospital

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INTRODUCTION

Nowadays Iran Hospitals are seeking to improve services' quality and they are competing with each other in order to present optimal care. The subjects such as patient safety and medical error is not only of the health sector concerns, but also of the patients and their companions concerns. On the other hand, all aspects of health-care services are in danger. In the past, risk management was evaluated by looking at reaction approach in the clinical area to prevent its repetition but now the emphasis is on preventive practices.[1] So concerns about repeated medical errors and its damages resulted in the fact that some country's legislators support the establishment of a medical error reporting system. Medical errors are one of the most serious problems in the health system and are a threat to patient safety because patient safety issue plays an outstanding role in healthcare.[2]

Researchers showed that between 3% and 17% of patients admitted to hospital damaged by an unwanted occur or medical error and between 30% and 70% of these events are preventable by conventional methods.[3-7] In fact the error consists of two main categories; systematic error (hidden error) and human trial (an active error). In dealing with human error, there are two views, personal perspective, and system perspective. Individual approach has a significant disadvantage and that is losing the culture of trust as we know the error management will be effective only in the existence of a reporting error system. Without accurate reporting of accidents, incidents and near-fault cases, there will be no way to detect errors and create barriers against errors' recurrent and this report condition occurs only if there is trust between individuals and creating such an environment will not take place through personal approach. This research addresses the issue from that perspective is systematic perspective. This perspective supposes humans fallible and said that errors' root should be sought not only in humans, but also in the system and in the work environment. As a result, introduces the way to deal with errors in changing, improving conditions and defense systems' preparation and placement, not in punishment and human replacement. So it could be preventing errors or minimized their effects.[8] As a whole, medical error called the failure to achieve the planned activities, failure to achieve the desired result or the wrong plan for achieving a purpose, and sub sequently medical malpractice is the failure about what should a physician (medical staff) do according to the rules and regulations that including detailed examination, early diagnosis, proper treatment, follow-up, and counseling.[9] Of course, creating infrastructures for error reporting is necessary if it reviews systematically and one of the best policies is to create the appropriate environment for voluntary reporting; in this way, error causes can be rooted and we can suppose operational plans to solve it.[10]

Although medical errors; reporting are very few, however, studies showed that nurses reported medical error are more than doctors. Nurse provide more reports than physicians because of their familiar culture to guidelines, protocols, and concepts of safety and security, while medical culture is less reliant to these kinds of commands.[11]

Although appropriate actions have been carried out in Shahid Beheshty Hospital, but it seems necessary to provide a medical error reporting system to promote infrastructures' safety. Because a good medical error reporting system can be a trainer and prevent of repeated failure occurrence. So, this research discussed about recognition of medical errors' reporting system dimensions in Educational Hospitals that should be considered.

MATERIALS AND METHODS

This research is a descriptive-analytical qualities' study that identifies the medical error reporting system in the hospital. The population of this research was Shahid Beheshti's Hospital in Isfahan city which has been carried out in 2012 that because of having ISO and being educated - therapeutic has been studied, worthy of mention that this hospital is a specialized hospital in gynecology. In order to make sure of the research results validity and reliability, instead of interviews, focused discussion group method in five sessions and with the presence of a majority of interviewers have been used. First three accused discussion groups with discussion subject's surroundings the axis of necessary characteristics and obligations composed for having a medical error reporting system in health-care systems and two sessions disposed at the end of the research process in order to extract results count up. In fact, data have been collected through 15 face to face interviews. Each of them takes place in about 1 hr and creation of five focused discussion groups through 45 min for each section. Sessions' members composed of hospital's Metron, educational supervisor, health officer, health education connector, and all of the head nurses. For each session formation, assistance of 2/3 participants were necessary. In order for data analysis, content analyzing method has been used in a way that subjective codes devoted to interviews and then divided into two categories-main subject and subsets of study' findings. After each steps categorizing, extracted results were given to members to expressing their reviews, at the end stage in order to results complementation and information accuracy, tables were given to the members and they were expressing their views. Final summary on necessary factors and substrates to establish a medical error reporting system from the nursing department perspective mentioned in Table 1 and Figure 1. Finally, information from interviews and discussion groups after content analyzing and subjective coding decided into nine main classes and subsets of each of them mentioned completely in Table 1. It should be consider that medical error in this research means any clinical and non-clinical error, which was committed by medical staff inadvertently or intentionally and considered threatening danger existing or potentially.

FINDING

Although, 2 years after the implementation of clinical governance in order to pass health-care quality in Iran have passed and one of its topics is risk management audit of medical error, study on system of medical error is too rare. So,

this educational hospital had chosen as a pilot of requirement for medical error system. Shahid Beheshti Hospital is a specialized hospital in gynecology and the whole populations who have been interviewed were with a bachelor's degree and 42 years old age men. Most of the interviewed responsible in all wards had between 10 years and 26 years record of service. Conclusions resulted from interviews and group sessions were divided into nine main categories [Figure 1]. These main

Table 1: Essential factors and infrastructures to establish a medical error reporting system according to the department of nursing perspective in Isfahan Shahid Beheshti Hospital

Theme	Subtheme
Medical errors' enclosures	Include all groups who are involved with patient, such as physicians, nurses, clinical (laboratory, radiology, etc.), service provider, the midwife
	Hidden errors has been occurring more commonly in the organization
	Most errors are blundering
	Errors are in the categories of: Leading to death, traumatic event, minor damage and cases which are near to error that certainly
	People have more courage to express things close to the error
Errors from the nurse's perspective	Error can includes: Diagnosis error
	Error in the treatment process
	Drug errors (including drug name, dosage)
	Bad handwriting
	Wrong and unnecessary recommendations (for example unnecessary lab examination)
	Surgical errors (wrong patient, wrong surgery part)
Error's reporting system objectives	Medical error reduction and patients and personnel immune (that is of the greatest achievement of error reporting system)
	Learning from the others mistakes and using their experiences
	Identification of obvious errors, hidden errors and cases close to error
	Considering various kinds of errors from which were led to the harm, incident or close to the incident to those which were being investigated in the mortality committee
	Finding the error occurrence' cause and effect chains, suggesting solutions and corrective actions
Medical errors reporting barriers	Fear, fear is the most important factor for not reporting errors which was included of
	Fear of being reprimanded
	Fear of blame
	Loss of money and popularity
	Without honor and Shame colleague
	Labeled as the wrongdoer
	To be ridiculed
	Lack of adequate training
	Organizational culture weakness
	The lack of justifying personnel and lack of determination of error reporting for personnel and having just compulsory requests
	People's experience of organization and previous misappropriate encounter history
Employees' motivational factors for error reporting	Individual's education and awareness of reporting advantages and dangers that not reporting will be going on
	Justifying employees about their whole services and duties (in fact, scientific justification and a sense of responsibility addition in across forced task system)
	To ensure the protection of privacy in the name of person reporting, safety and legal
	Direct authorities' appropriate and good interactions are of the most important factor to encourage more reporting by the individual and those around him
	Supporting senior executives
	The importance of reporting and the degree of its sensitivity from the perspective of senior and junior managers
	Increased work ethic and sense of responsibility among people
	Giving feedback and informed of results of the previous reporting
	Encouraging personnel; who are detect tracking errors and offer constructive solutions for preventing and stemming errors and encourage publicly with written or gifts
Errors reporting challenges	Reporting needs time and continuous follow-up to reach a conclusion
	Officials view to the reporting person can be changed and identify him as a troubled person
	A person who commits an error suffered from financial loss
	Reprimand the person who committed the error

Contd...

Table 1: Contd...

Theme	Subtheme
Errors reporting opportunities	Medical error reduction in the organization
	Increase the safety of patients and staff
	Patients and their relatives complaints reduction from the hospital and treatment team
	Patient and staff satisfaction addition
	Valuable experiences transfer gathering in the system, transferring them to new employees and finally a possible error reduction in the future
	Enable authorities to plan for the future
	Prevent future errors
	Increased staff training
	Employees accuracy addition
	Resolves deficiencies of hospital such as logistic, staff and
A desirable error reporting system characteristics	Confidentiality
	Following the training and experience
	Lack of sinning search and waist up
	A good error reporting system is a combination of mandatory and optional, of course if culture is formed in a good way, being the best is optional
	Provide regular feedback
	The person's identity is preserved through the feedback process
	Errors should be classified, steamed and predicted and for operational strategy is presented for each of them separately
	A person familiar with clinical terminology is responsible for tracking reports errors
	Transfer gained experience not only within the organization but also between hospitals
The quality of transition experiences of medical errors in the healthcare system	Internal
	Feedback towards
	Preparation of special medical error Issue to inform all units
	External
	Transmission of between hospitals and academic experiences nationally and via treatment department
	Educational classes holding and transfer of experience focused on health department
	News letter's preparation in the shape of summarizing the experiences of hospitals through maintaining the confidentiality of centers; information from the health department, just for information and education of other centers in hospitals' errors and prevent repetition of errors

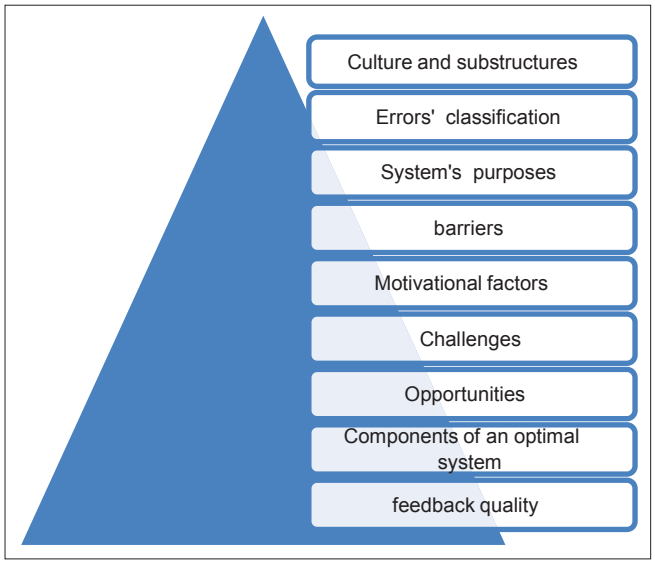

Figure 1: Medical error reporting system dimensions

theme are consisted of medical errors' enclosures, errors from the nurse's perspective, error's reporting system objectives, medical errors reporting barriers, employees' motivational factors for error reporting, errors reporting challenges, errors reporting opportunities, a desirable error reporting system characteristics, the quality of transition experiences of medical errors in the healthcare system. All subthemes and examples have been explained in Table 1. The findings were indicated the necessity of reporting infrastructure creation and among organizational culture, so that most of the people said that "if error reporting forms as a culture and officials do not chastise us, we will report without fear" and "if the way of reporting has been proved and people recognize the importance of reporting then I think very ne could welcome, the problem is in the position in which people who are not justified." Furthermore, authorities' support evaluated as important factors so that people knew their legal concerns in reporting not welcome.

DISCUSSION

The main purpose of health systems is health protection and promotion. Furthermore, patients and personnel immunity are the main confusions in this scope.[12,13] Immunity and health addition will be insured if health systems identify therapeutic errors' reasons and factors

put not only paying to settle barriers' elimination, but also put into tension an appropriate context for probable medical error prevention. This matter will not be achieved unless the system is powered continuously by specialists in a systematic and logic way. Hence, this research phase of identifying infrastructure and necessary contexts in this system's setting up and refers to barriers, requirements, culture, goals, challenges, and opportunities facing the system. There have not been any researches conducted about the benefits and consequences of error reporting system's existence and errors' analyzing yet. For example, in Baker and Norton research (2004) three strategies for medical errors diminution including culture, system's set up and evaluation had been expressed that is consistent with the findings of the research.[14]

In Baker *et al*.'s study (2004) in Canada results showed that from 255 patients who have experienced adverse events, 106 cases (41.6%) injured and 20.8% of deaths were preventable.[15] This result confirms the research findings, which have been expressed in the form of objectives and opportunities for an appropriate error reporting system.

Although, Woolever study (2002) has been leading to fault management team's usage in hospitals to error registration and reporting.[16] However, this study shows that having a team in terms of system performance can be fruitful if culture, authorities support and Setting up a good system occurred appropriately. University of Arbor and Mich University Research (2010) also has been confirmed this matter. They said that they support their personnel when errors has been exposed and valuing honest in the medical error expression because believe that error accepting stops more and future poor performance costs.[17] In Hirose *et al*.'s study (2007) based on a descriptive study of 6880 error reporting cases, it was determined that 39.3% of reports were owned by nurses and the main were owned by others. In this study, which was played to incident's flashback up to its report time, physicians flashback logs were significantly more than doctors.[18]

Evans's study (2005) showed that although physicians and nurses believe in an incident reporting system in their hospitals, but most of the nurses have been doing it more than physicians and introduced barrier as the Lack of feedback.[19] Good collaboration of nurses in this research is the authenticator. In order to improve incident reporting, especially among physicians, the process should simply be determined and feedback should be given to reporters that the results of these researches consistent with this research results.

In addition, Karsh *et al*. (2006) also has been conducted a research in the field of theoretical approaches to medical error reporting system research and design discussions. He was concluding above cases through 16 consultation meetings: Fears and concerns about medical error reporting, potential that a medical error reporting system should be owned, Barriers, and incentives for reporting medical errors and what items should be reported in.[20]

According to the results of interviews, organizational culture is as the main factor in considering to organizational error reporting. In fact despite the actions, which were taken, personnel are still afraid to report errors. Wolf and Hughes (2008) believes that some errors are not reported by clinicians because of fear of being punished.[21] Furthermore, Zivin and Pfaff (2004) said that people are concerned that information about the error reported in the medical malpractice system to be used against them.[10] Waring (2005) in his study referred to blame culture and is considered as the major obstacle in reporting medical errors. Nurses' statements in this study has been focused to this category.[22]

It is better that medical error reporting education and culture start from nurses and physicians student life. As Dolfan *et al*. cited, many educational activities have been occurring. Although studying for students, so that 90% of participating physicians said that no separate subject has been taught in medical error during the study. On the other hand, 64% of these people said that medication errors have been committed during their course of study.[23] The high percentage of errors in students indicate the neglecting to registration and tracking error that people are not only repeat them in educational hospitals during their education, perhaps encounter to commit the same errors as their friends during their student life, whereas an error reporting system be able to inform them, or at least be a warning before disasters. However, many studies have pointed to the fact that training courses can effectively prevent medical errors.[24-27]

CONCLUSION

Medical error is an important issue in recent decades. Research findings indicate the need to identify, plan, and control the systematic errors, therefore, the necessity of culture, creating an infrastructure error reporting system, which we're led to increased reporting error with the approach of others' learning and ultimately the safety of patients and staff of the health-care system are worth considering. Because the planning is based on information, a system in this important context is required to identify, classify reduce medical errors and follow its trustee by itself. Therefore, to improve the quality and services and safety, we should provide an error reporting system with learning and prevention and support the centers on the legal and etc., aspects.

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