

A study of patient safety management in the framework of clinical governance according to the nurses working in the ICU of the hospitals in the East of Tehran

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ABSTRACT

Background: The improvement of patient safety conditions in the framework of clinical service governance is one of the most important concerns worldwide. The importance of this issue and its effects on the health of patients encouraged the researcher to conduct this study to evaluate patient safety management in the framework of clinical governance according to the nurses working in the intensive care units (ICUs) of the hospitals of the east of Tehran, Iran in 2012.

Materials and Methods: This descriptive study, which was based on census method, was conducted on 250 nurses sampled from the hospitals located in the east of Tehran. For the collection of data, a researcher-made questionnaire in five categories, including culture, leadership, training, environment, and technology, as well as on safety items was used. To test the validity of the questionnaire, content validity test was conducted, and the reliability of the questionnaire was assessed by retest method, in which the value of alpha was equal to 91%.

Results: The results showed that safety culture was at a high level in 55% of cases, safety leadership was at a high level in 40% cases and at a low level in 2.04% cases, safety training was at a high level in 64.8% cases and at a low level in 4% cases, safety of environment and technology was at a high level in 56.8% cases and at a low level in 1.6% cases, and safety items of the patients in their reports were at a high level in approximately 44% cases and at a low level in 6.5% cases. The results of Student's *t*-test ($P < 0.001$) showed that the average score of all safety categories of the patients was significantly higher than the average points.

Conclusions: Diligence of the management and personnel of the hospital is necessary for the improvement of safety management. For this purpose, the management of hospitals can show interest in safety, develop an events reporting system, enhance teamwork, and implement clinical governance plans.

Key words: Clinical governance, Iran, nurses, safety management

INTRODUCTION

Patients' safety with respect to health is a significant global concern which has affected patients in all health service aspects in all the countries around the world, including developed and developing countries.^[1] In the past years, in patient safety management, the concern was based on recognizing and preventing mistakes. Since 1990, several studies have been performed for diagnosing factors that can have significant effects in creating errors and making problems in reporting the case. This report along with other related reports from similar institutes in

other countries including Britain, Canada, and Australia have attracted the attention of health and treatment systems in an international level to the fact that they are not safe enough.^[2] Unsafe services, in addition to having unwanted consequences for the patient and his/her family, will result in mental pressure on the employees of the health system and the people of the society, and will cause great economic pressure on the health and treatment system of the society.^[3] Patient safety management consists of a series of organizational procedures. These procedures are designed for protection against dangers and are used for diagnosis, classification, and management of risk for the organization's safety. Moreover, they are considered as a general part of the organization's risk management.^[4] It has been estimated that annually 44,000–98,000 patients die because of medical mistakes, of which 7000 cases are related to pharmaceutical mistakes. According to the present evidences, it is estimated that on average, 10% of the hospitalized cases in medical centers are suffering from these services and 1% of death cases can be related

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to these matters. Studies indicate that between 50% and 70% of these accidents would have never happened or their consequences would have been alleviated if there had been appropriate planning and the necessary actions had been taken.^[5] Improvement of patient safety conditions is one of the most important issues that are considered in the scope of clinical services in the country. Clinical governance is a framework in which organizations providing clinical services are responsible for the permanent improvement of the quality of clinical services, and by creating an environment in which clinical services can develop, they maintain higher service standards. Thus, clinical services governance is the emergence of all activities which combine patient care in one strategy.^[6] The important issue is the necessity of improvement of performance, effectiveness, and safety of the patient. For this purpose, the accountability of health service centers must be increased in order to decrease inconsistency in services provided to patients. Moreover, the consideration of medical mistakes in clinical governance is an important principle through which inappropriate, weak, and ineffective care is eliminated. On the other hand, health care organizations are very complicated and their structure, procedures, and management are of great significance for improvement of clinical care. Clinical service governance will identify these complexities and try to solve some of these problems by creating an integrated and comprehensive approach and by continuous improvement of quality.^[7] A considerable part of medical mistakes is made by nursing personnel when providing medical care services.^[8] Considering the above-mentioned points, and in order to study the present situation (weak and strong points) and increase awareness of the personnel and improve safety, the researchers were obliged to perform a research with the purpose of determining patient safety management in the framework of clinical governance from the viewpoint of nurses in hospitals in eastern Tehran.

MATERIALS AND METHODS

This research is a descriptive research. The environment of this research consisted of the special ward (ICU, CCU, and Dialyze) of hospitals in eastern Tehran, such as Besat, Alghadir, Tehranpars, Imam Hossein, Fajr, Buali, and Lavasani, of which Tehranpars and Fajr hospitals were eliminated from this study because of lack of cooperation. The statistical society of this research consisted of 250 people. The samples were selected by census from among all the nurses working in the mentioned hospitals. The inclusion criteria of this research were having a Bachelor's or higher degree in nursing, having at least 1 year experience in the special wards of the selected hospitals, and willingness to participate in this research. The information gathering tools consisted of two questionnaires. The first questionnaire consisted of questions on demographic

characteristics including age, sex, marital status, service record, educational degree, organizational rank, and type of employment. The second was a researcher-made questionnaire based on the concept of patient safety under risk management in the framework of clinical governance concepts and was taken from scientific resources related to patient safety, clinical governance, patient safety oriented hospitals, and the safety culture questionnaire. This questionnaire consisted of cultural, leadership, educational, environmental and technological, and patient safety elements (five aspects). It consisted of 40 questions including 9 cultural safety questions, 10 leadership questions, 7 educational questions, 9 environmental and technological questions, and 5 questions determining safety elements and reporting the truth. For each question, multiples answers were considered, including yes, no, needs improvement, and no information is accessible. Research samples selected yes in the case where the condition was satisfactory, no if it was unsatisfactory, needs improvement if the primary actions were taken but more actions were needed for improving safety, and no information accessible if they had no information about the issue or they could not give any suggestions. For scoring the questions of the questionnaire, yes equals 3 points, needs improvement is given 2 points, no gets 1 point, and no information accessible gets 0 points. In this research, for the purpose of determining the scientific validity of the questionnaire, content validity method was used. These questionnaires were prepared based on new books and scientific papers related to the subject of research. Then, the questionnaire was studied by 12 scientific board members of the Faculty of Nursing and Midwifery of Islamic Azad University, Tehran Medical Branch, and the Treatment Deputy of Shahid Beheshti University of Medical Sciences (clinical governance). After making the necessary alterations, the final questionnaire was used. Moreover, for the purpose of estimating the equilibrium, test-retest method was used. For this purpose, the questionnaire prepared was completed by subjects who met the inclusion criteria. One week later, this form was completed for the same subjects and the Pearson correlation coefficient was calculated. For estimating the reliability of this tool, Cronbach's alpha was used. The obtained value for 30 samples was 91%. Furthermore, the power of test was appropriate; thus, statistical test preciseness in discovering meaningful differences was appropriate [Table 3]. Finally, safety management and demographic characteristics questionnaires were given to nurses in the three shifts, i.e. morning, evening, and night shifts, in Besat, Alghadir, Imam Hossein, Imam Ali, and Lavasani hospitals. Explanations were given to the subjects about the questions. After the completion of the questionnaires, they were collected for analyzing using SPSS for Windows (version 16/5; SPSS Inc., Chicago, IL, USA). For describing and analyzing the information, descriptive

statistical methods (absolute and related distribution tables, and mean and standard deviation) and conceptual statistical method (single-sample *t*-test) were used.

RESULTS

Research results in the field of demographic characteristics indicated that 60.8% of the respondents were between 31 and 40 years of age, 2.5% were under 30 years, and 4% were above 50 years of age. 72.8% were women and 28.2% were men. 56.6% were officially employed, 28.3% were contractual, 15.9% had contract-based employment, and 2% had plan-based employment. 89.2% of the research sample had a Bachelor's degree, 4% had a Doctorate degree, and 6.8% had a Master's degree. The majority of the subjects (64%) had 1–10 years of work experience and the rest (7.2%) had more than 20 years of experience.

The results of the research indicated that the mean and standard deviation of the cultural safety score of the patient were 20.4 and 30.53, respectively, with maximum score of 27 and minimum score of 11. Thus, safety culture was at a high level in 55% and at an average level in 24% of cases.

The mean and standard deviation of the score of patients' leadership safety were 16.5 and 5.52, respectively, with maximum score of 30 and minimum score of 10. Thus, leadership safety was at a high level in 40%, at an average level in 32.4%, and at a low level in 2.04% of cases.

The mean and standard deviation of safety factors of the patients in daily report were 10 and 2.96, respectively, with maximum score of 15 and minimum score of 5. Safety factors of the patient were at a high level in approximately 44%, at an average level in 34%, and at a low level in 6.5% of cases.

Conceptual statistics related to the single-sample *t*-test in the aspects of cultural, leadership, educational, environmental and technological, and safety factors in the report indicate that the values of their *t* were 23, 18, 13.84, 7.21, and 9.5, respectively, and mean of these aspects was

2.96 2.95, 2.88, 2.96, and 2.75, respectively ($P < 0.001$, all aspects were less than the authorized error of 0.05).

DISCUSSION

The results of the present study indicate the safety status of the patients in different aspects. The patients' safety culture from the viewpoint of nurses working in the special ward of hospitals of eastern Tehran was good with a score of 20. [Table 1]. Thus, safety culture is placed at a high level (55%) according to the above-mentioned viewpoint. The results of this study are in conformation with the results of the study by Chen and [Table 2]. Li with respect to safety culture in Taiwan in which there was 64% positive answer for safety culture.^[9] Moreover, the study by Baghaei *et al.* showed 23% excellent and very good and 52% acceptable safety culture score.^[10] This is also in conformation with the present study. However, considering the results of this study, it is indicated that nurses consider safety culture to be at a high level in these hospitals. Problems such as dissatisfaction of the personnel in recording their mistakes in their personnel file (30%) still exist. Therefore, despite the appropriateness of safety culture of the patient for improving the safety level, there is a need for creating a correct safety culture and avoiding incorrect culture in the organization.^[11] Thus, this study determines the necessity of the participation of medical personnel, especially nurses, in educational courses for improvement of safety culture. In a study by Abdi *et al.*, the score of patient safety culture was at low and average levels; this is not in conformation with the results of the present study.^[12] According to the majority of the respondents (56%), shortage of health care personnel, especially nurses, on the one hand, and the high level of workload of the hospitals, on the other, are the most common problems in these hospitals. Thus, increasing the number of nurses is necessary for clinical care and preservation of patient safety. Despite this, for the purpose of improving patient safety, many global organizations are emphasizing the importance of creating a safety culture in organizations with respect to the quality of medical services and crediting clinical governance.

Safety leadership from the viewpoint of nurses of special wards in hospitals of eastern Tehran was good with a score

Table 1: Descriptive statistics related to aspects of culture, leadership, education, environment, safety technology, and safety factors in the report

Variable	Frequency	Average score	Standard deviation	Minimum	Maximum
Safety culture	199	20.42	13.53	11	27
Safety leadership	187	21.70	5.52	10	30
Safety education	227	16.55	30.47	7	21
Safety environment and technology	184	21.56	4.46	9	27
Safety elements of reporting aspect	209	10.65	2.96	5	15

Table 2: Frequency related to aspects of culture, leadership, education, environment, safety technology and safety factors in the report

Variable	Low level	Average level	High level	Conclusion
Safety culture				
Frequency	0	60	139	Higher level
Percent	0	24	55.6	
Safety leadership				
Frequency	6	81	100	High level
Percent	2.04	32.4	40	
Safety education				
Frequency	1	64	162	Approximately at a high level
Percent	0.4	25.6	64.8	
Safety environment and technology				
Frequency	3	39	142	High level
Percent	1.6	15.6	56.8	
Safety elements of the reporting aspect				
Frequency	14	85	110	Approximately a high level
Percent	5.6	34	44	

Table 3: Conceptual statistics related to single-sample t-test in the aspects of culture, leadership, education, environment, safety technology, and safety factors in the report

Variable	Safety culture	Safety leadership	Safety education	Safety environment and technology	Safety elements of the reporting aspect
T	23	18	13.84	7.21	9.5
Df	23	18	25	16	2.88
Mean	2.96	2.95	2.88	2.96	2.75
Sig	0.001	0.001	0.001	0.001	0.001
Test power	0.74	0.78	0.81	0.69	0.71

of 21.7 [Table 1]. As a result, patient safety leadership is placed at a higher level of 40% according to the above viewpoint [Table 2]. According to the view of the majority of the respondents (54%), instructions related to the correct identification of patients are executed in special wards of all hospitals. The mentioned study is in conformation with the study of Ji Chen *et al.* in respect to the positive response in hospital's leadership aspect (62%). In addition, in the study by Pourreza *et al.*, the leadership aspect was at a low level with an average of 3.68.^[13] This is not in conformation with the mentioned study. Therefore, the results of this study indicate that managers of these hospitals have considered leadership with adherence of improving patient safety, clear

strategy, and organized environment by considering patient safety as important issues.

The educational score of patient safety from the viewpoint of nurses in special wards of eastern Tehran's hospitals was approximately at a high level with a score of 16.5. [Table 1 and 2]. Therefore, patient safety education from the above-mentioned viewpoint was at a high level of 64.8%. Thus, the requirement for more improvement in educational level by holding educational classes, clinical workshops, etc., in these hospitals is clear. The results of this study are in conformation with the study results of Ji Chen *et al.* published in the year 2010 in which the safety education aspect was 84%, and by Baghaei *et al.* which indicated 69% positive responses for education and learning. A study by Maedal *et al.* in the year 2011 on patient safety education in Japanese nurses indicates that 90% of the nurses had high patient safety education;^[14] this is in agreement with the result of the present study. Furthermore, the results of another research by Moghery indicated that managers should become aware of the viewpoints of their colleagues, including nurses, by prioritizing their needs and requirements, and should improve the quality of offered services to the patients by improving standards.^[15] In addition, by using quality management in hospitals and holding appropriate educational classes for medical personnel, including nurses, they will be able to learn about the most recent operational standards and medical methods. Holding educational courses on the aspects of clinical governance and accreditation standards will be helpful to decrease medical mistakes and improve the knowledge of employees in the field of patient safety.^[16] In the study by Abdi *et al.*,^[12] education and learning had a low average of 19.5% which is not in conformation with the current study.

The mean of safety environment and technology was at an acceptable level of 21.56 from the viewpoint of nurses of special wards in hospitals in eastern Tehran [Table 1]. As a result, safety environment and technology is placed at a high level of 56.8% based on the above viewpoint [Table 2]. According to the view of most of the respondents (66%), the hospital is equipped with emergency lights and electrical generator. This result is in conformation with the study result of Suñol *et al.* on the execution of patient safety strategy in European countries, which had a positive answer level of 88.2% with respect to environment and technology.^[17]

Safety elements from the view of nurses of special wards in eastern Tehran's hospitals were at an approximately high level (44%) [Table 2]. This result is in conformation with the study result of Ji Chen *et al.* with respect to the reporting aspect (56%) and of Suñol *et al.* on the execution

of patient safety strategy in European countries with a 51% positive answer in the reporting aspect. However, it is not in agreement with the study by Abdi *et al.* with a lower reporting aspect of 19.9%.^[12] Stone and Kanitsaki in their study in the year 2006 said that the first step in decreasing work mistakes is creating an environment in which each of the nursing personnel would confess if they made a mistake and explain its reason to other colleagues and members of the medical group honestly, so that not only the caused damage will be compensated but also the authorities could be able to gather different types of mistakes, their conditions, and related matters for the purpose of removing all the causal factors.^[18] However, in the present study, the studied people (41.6%) claimed that there is no program for giving bonuses or introducing the top ranking teams for reporting mistakes. Reporting accidents is important not only for the improvement of patient safety but also for learning from mistakes which is a fundamental issue. This method of learning must be propagated and executed to prevent these accidents from happening again in the future, and it is better if this is executed in the entire health care system.^[19] The results of this research indicate that there is a high level of reporting; thus, it is recommended that the level of reporting be increased and that the methods of studying the cases, using patients' experiences, studying patients' safety indexes, and inspecting the complaints and satisfaction results be used for identification of mistakes.

All patient safety aspects had $P < 0.001$ and were lower than the authorized mistake level of 0.05. Therefore, the calculated averages were significantly higher than the average of scores.

The main purpose of clinical service governance is the continuous improvement of medical services and providing a framework in which organizations that offer health services would be able to move toward development, growth, and quality assurance of clinical services for the patients.^[20] Clinical services governance is a concept in which all the activities related to improvement, inspection, evaluation, and studying the quality of the offered services to the patients are included. It is an organized approach for guaranteeing the accountability of clinical services in a way that the quality and safety of services offered to the patients would be improved to an optimized level. What is of great significance is that the necessity of operational improvement and effectiveness, and patient safety is clear. Generally, it can be said that the evaluation of patient safety management in hospitals has a multifaceted role. On the one hand, it can clarify the status of safety culture in medical centers and its strong and weak points for the managers and supervisors; and on the other hand, it has the ability to increase employees'

knowledge with respect to patient safety and assist in the improvement of the patient's status. Moreover, managers are able to use it as an evaluation tool after executing the necessary interventions for the improvement of safety. By knowing its strong and weak points in safety, each center can definitely improve the patient safety status more efficiently. Issues such as the type of reaction of organizations to mistakes, issues that happen during replacements, transfers, and shift changes in hospitals, coordination and cooperation between different units of the hospital, not benefiting from a mistake reporting system or having an incompetent system, and shortage of nursing personnel are all weak points of the above hospitals with respect to patient safety.

In performing this study, there were several limitations including environmental noises, physical and mental status, fatigue level of the subjects, and lack of knowledge of patient safety and clinical governance. In order to remove these limitations, the subjects were asked to complete the questionnaire at home, and descriptions were presented with respect to patient safety. The other limitation in this research was that in addition to nurses, other groups like patients, managers, and colleagues were not taken into consideration. The results of this research can be used as an introduction for more comprehensive researches in the field of patient safety and clinical governance. For this purpose, it is recommended that future studies be executed in other parts of medical centers and other regions of the country, and also its relation to nursing and medical mistakes, and other medical groups and even the patients themselves be studied.

CONCLUSION

This evaluation is a study of patient safety management in the framework of clinical governance from the viewpoint of nurses working in the special ward of eastern Tehran's hospitals. The results of this research indicate that nurses have an approximately appropriate view toward safety management. This can be a key opportunity for managers and health service providers to present approaches such as orientation of senior managers of the organization to safety, creating a reporting system, development of team work, and execution of clinical governance programs. In addition, an opportunity can be provided for health system managers to be able to improve patient safety and build confidence in the society by concentrating on clinical governance patterns and by appropriate planning.

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