

**STUDYING REALIZATION OF STANDARDS OF SAFE ENVIRONMENT IN  
HOSPITALS AFFILIATED TO SHAHID BEHESHTI UNIVERSITY OF TEHRAN IN 2015**<sup>1</sup>Sedigheh Khalifeh, <sup>\*2</sup>Shaghayegh Vahdat and <sup>3</sup>Somayeh Hessam<sup>1</sup>Department of Healthcare Management, Fars Science and Research Branch, Islamic Azad University, Marvdasht Iran.<sup>\*2</sup>Assistant Professor, Department of Healthcare Management, Marvdasht Branch, Islamic Azad University, Marvdasht Iran.<sup>3</sup>Assistant Professor, Department of Health Services Administration, Shiraz Branch, Islamic Azad University, Shiraz, Iran.**\*Correspondence for Author: Shaghayegh Vahdat**

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**ABSTRACT**

**Introduction:** safety is a very important part of healthcare quality. Patient safety friendly standards are very essential and vital in each hospital. This study aims to investigate amount of realization of patient safety friendly standards in hospitals affiliated to Shahid Beheshti university of Tehran in 2015. **Method:** this is an applied method regarding the objective and is descriptive-surveying regarding methodology and it was conducted in four hospitals selected by Shahid Beheshti university of Tehran in 2015. Statistical population is all personnel and professors of hospitals selected by Shahid Beheshti university of Tehran (400 persons). The sample was chosen by clustering method (234 individuals). The research instrument was checklist of patient safety friendly hospitals. Descriptive statistic, one way T test and SPSS 21 were used to analyze data. **Results:** mean amount of realization of standards is 71.77. Concerning mean amount of realization of standards, safety standards of blood and its products were the highest (92%) and patient safety friendly standards in managerial departments were the lowest (54%). **Conclusion:** status of safe environment of the hospitals under study was moderate. Therefore, it is suggested that some steps are taken for reaching essential standards by targeting on managerial departments about planning and operationalization.

**KEYWORDS:** safety friendly standards, patient, hospital.**INTRODUCTION**

Today, treatment and health sector is one of the most important areas of sustainable development in societies due to direct relationship with human lives. Production of health and presentation of optimal health services in hospitals depend on a healthy and safe environment and healthy staff.<sup>[1]</sup> It is very necessary to consider safety standards before starting everything and identifications of risks, definition and distribution of personal responsibilities, continuous education of safety protection system and identification of weaknesses and strengths of the system are among necessities of safety management.<sup>[2]</sup> From view of safety and protection of public health, standards are scientific, technical and experiential indices and criteria that are used as accepted rules for determination of productive products with aim of public health protection.<sup>[3]</sup> In a transient look, the setting of hospital seems clean and safe but different activities of hospital and different types of events and risks that threat the hospital (such as electric shock, explosion, firing, dangerous chemicals and hospital infections) endanger entity of hospital and make

managers sensitive to protection of human beings and material capitals of the hospital.<sup>[4]</sup> Although working for health and comfort of individual is useful, it can have bad effects on the health in some conditions. Since individuals working in treatment wards are subject to diseases more than others, they will affect to diseases if they do not consider health and safety in hospital. On the other hand, individual's health influences on work quality and quantity.<sup>[5]</sup> Authorities are responsible for heavy burdens such as protection of personnel and patients' health and safety and also necessity of preparation of hospitals when occurring accidents in the society. In the study conducted by Fathi who studied safety of patient in hospitals affiliated to Kordestan medical science university, it is clear that safety is not optimal in the units under study and there are some important problems in some cases but they can be solved.<sup>[6]</sup> Patient's safety standards are a set of requirements that are critical for implementation of patient's safety program in hospital. Such standards are in operational form and empower hospitals to evaluate patient's care such as patient's safety, capacity of staff

for this category and participation of staff in promotion of safety in treatment services. The process of patient's safety evaluation is an advanced mechanism in hospitals and it has been prepared to determine patient's safety level and it can be used either as a patient's safety program or evaluation of the program advancement.<sup>[1,7-12]</sup> Asefizadeh studied the amount of patient's safety friendly in educational-therapeutic centers of Rasht city and showed that mean score of governance and leadership was 64%, interaction with patient and society was 36%, evidence-based safe and clinical services was 63% and safe setting was 93%. Total status of safety was 64% and the performance was moderate. As a result, status of safety in the centers under study was moderate.<sup>[13]</sup> Colla evaluated status of patient's safety and concluded that status of patient's safety is considerably different and more efforts should be done to study status of patient's safety and its outcomes on the patients.<sup>[14]</sup> Researches indicated that from view of caregivers, the presence of error and unwanted side effects in healthcare are to some extent tolerable but this view may be different from views of patients.<sup>[15]</sup> Herzer, Vozikis, Wachter showed in their studies that many factors are effective on medical errors such as human (knowledge and performance), technical factors, equipments, healthcare setting, factors related to patients, organizational factors (policies and bylaws) and lack of coordination of healthcare team.<sup>[16-18]</sup> El. Jardali found in his studies that unsafe treatment service and care will incur a heavy economical cost in addition to human suffering. It has been estimated that 5-10% of costs related to health result from non-clinical services leading to hurting patients.<sup>[19]</sup> Research results of Walston (determining the factors affecting safety in hospital) showed that management support, presence of reporting system and sufficient sources are effective on safety in hospitals. Therefore, hospitals should try to study and promote their safety level before doing their tasks.<sup>[20]</sup> In

his study, Siddiqi investigated standards required for patient's safety in 7 developing countries and stated that the essential standards have been realized between 8 and 78%.<sup>[21]</sup>

Environmental health of the hospital includes all actions that prevent transfer of pathogenic factors from outside into inside of the hospital and vice versa. In this direction, environmental factors such as water, waste water, garbage, air, food should be controlled in a way that help recovery of patients in addition to providing a healthy environment. Concerning the definition of environmental health and person responsibilities against public health, consideration of safety and health in hospital settings is very important. Concerning the importance of this issue, the present study aims to determine realization of standards of safe environment in hospitals affiliated to Shahid Beheshti university of Tehran.

## METHOD

This is a descriptive, applied and analytic study and aims to determine realization of patient's safety friendly standards in hospitals affiliated to Shahid Beheshti university of Tehran in 2015. Statistical population is all staff and professors of hospitals affiliated to Shahid Beheshti university of Tehran (hospitals of Imam Hossein, Loghman, Shohada Tajrish, Kodakan) (400 persons). The sample was chosen via clustering sampling using Morgan table (234 persons). In order to study patient's safety friendly in the centers under study, checklists of patient safety friendly hospital initiative have been used. Patient's safety friendly standards includes five main groups such as governance & leadership, attraction of participation and interaction with patient, evidence based- safe clinical services, safe environment and continuous training (table 1). Data was analyzed using T test and SPSS.

**Table 1: groups, subgroups and standards required for patient's safety**

Group	Subgroup	Required standards	total
Governance & leadership	4	9 standards	36
attraction of participation and interaction with patient	2	2 standards	28
evidence based- safe clinical services	4	7 standards	44
safe setting	3	2 standards	21
continuous training	1	-	11

## RESULTS

In this study, 4 hospitals selected by Shahid Beheshti university of Tehran were studied regarding realization of standards required for patient's safety friendly hospitals. Data were analyzed in 5 groups. The scores were stated based on each hospital and standard groups.

**Table 2: realization of standards required for patient's safety friendly hospitals selected by Shahid Beheshti university of Tehran**

Hospital code	Realization of standards (%)
1	71.5
2	75.8
3	68.8
4	70.7
Mean	71.7

Realization of standard in hospitals mentioned in above table showed that (table 2), mean amount of standards realization was 71.77%. Hospital code 2 had the highest

standard realization (75.8) and hospital code 3 had the lowest standard (68.8%).

**Table 3: results of single sample T test of patient's safety friendly standards**

Variable	Mean	Standard deviation	T	df	P
Patient's safety friendly standards in managerial sectors	0.75	0.7	4.243	233	0.024
Patient's safety friendly standards in top managers' planning	0.68	1.04	5.284	233	0.013
Standards of promotion of patient's awareness	0.54	1.08	4.301	233	0.025
Standards for correct identification of patients in all treatment stages	0.63	0.24	12.78	233	0.000
Standards of effective clinical system	0.79	0.52	56.36	233	0.000
Standards of reduction of risk of affection to infections in health services	0.83	0.25	56.36	233	0.000
Standards of safety of blood and its products	0.92	0.92	0.2	233	0.000
Standards of medicinal system	0.65	0.68	13.44	233	0.000
Standards of residual waste disposal management	0.67	0.54	20.41	233	0.000

In order to study research hypotheses, one sample t test has been used and results obtained from data analysis showed that more than half of patient's safety friendly standards have been realized in hospitals selected by Shahid Beheshti university of Tehran.

## DISCUSSION AND CONCLUSION

This study aims to evaluate patient's safety in hospitals selected by Shahid Beheshti university of Tehran using patient's safety friendly standards. Results indicated that mean amount of realization of standards of governance and leadership (including patient's safety friendly standards in managerial sectors and top manager planning) is 71.5 showing realization of these standards in hospitals. These results are in agreement with those of descriptive study done by Janghorbani who evaluated patient's safety friendly standards in operational room of a hospital.<sup>[12]</sup> Also, they are in agreement with those of Hushmand who studied patient's safety culture in therapeutic-educational centers selected by Shahid Beheshti university of Tehran. They also stated that management support from patient's safety is in moderate level.<sup>[22]</sup> Nevertheless, the results are in agreement with those of Suzani who studied factors influencing appearance of medical errors in Imam Hossein hospital of Tehran. In this study, high leadership and management of the organization are effective on appearance of medical errors.<sup>[7]</sup> In the study conducted by El. Jardali et al on status quo of patient's safety culture in Lebanon hospitals in 2010, team work, managerial supports from patient's safety gained the highest scores. The study done by Fathi was not in agreement with the present study. Fathi indicated that safety is not optimal in hospitals of medical science university of Kordestan. He stated that Formation of a safety committee in the hospital and continuous studies on unsafe cases are essential for improvement of safety.<sup>[6]</sup> Results of the study showed that amount of realization of standards of participation and interaction with patient and society (including standards of promotion of patients' awareness and standards for correct identification of patients in all treatment stages) is averagely 58.5. Christine believed that problems available in communications and lack of correct identification of patients are among effective factors on

patient's safety.<sup>[6]</sup> Abbaszadeh Ghanavati studied preparation of hospitals selected in Isfahan based on performance model of validation standard of international joint commission and stated hospital conditions and standard of patient and family's training as 39% in which attraction of participation of patient and society has been considered as well.<sup>[24]</sup> Chung studied deletion of medical errors by correct identification of patient and showed that following protocols of correct identification of patient is effective on reduction of medical errors.<sup>[25]</sup> Jenna believed that error related to patient's identification is one of causes of unwanted medicinal, surgical, diet side effects and other medical errors and the most common error resulted in death is blood injection to a wrong person.<sup>[26]</sup> In the study conducted by Sabahi, safety status of patient was investigated in treatment centers of Kashan city and he concluded that patient's safety is not optimal in the centers under study. In this study, the relation between nurses had the highest score.<sup>[27]</sup> Also, the study of Janghorbani showed good performance of the population under study that is not in agreement with this study.<sup>[12]</sup> Results of the study showed that amount of realization of standards of evidence-based safe clinical services (including standards of effective clinical system, standards of reduction of the risk of affection to infections in health services, standards of safety of blood and its products and standards of medicinal system) is 7.79 which is in a good level. Safety assurance of blood and its products and safety of medicinal system of the hospital increase amount of realization of standards in this group. Mosavi studied amount of realization of standards of patient's safety in operational room of hospitals in Tehran medical science university and evaluated realization of standards of infection control in a relatively safe level. This result is in agreement with that of the present study.<sup>[28]</sup> Another result of this study is realization of safe environment standards (standards of waste management) with mean amount of 67. Concerning hospitals wastes are one of environmental problems and lack of attention to correct waste disposal management causes different diseases and epidemics and threats individual health and provides many costs, it is necessary to use correct waste disposal management. For this purpose, it is suggested to use state agenda for waste

disposal management and its correct application, staff training, determination of accurate and safe waste disposal management and control. Majlesi et al studied status of waste disposal management of hospitals affiliated to Shahid Beheshti medical science university in 2005 and evaluated status of waste management non-optimally in hospitals under study.<sup>[2]</sup> This result is not agreed with results obtained by Rezaei et al. they evaluated waste disposal management in private hospitals of Tehran in a good level but their evaluation and methodology were different from the present study.<sup>[29]</sup> Yaghoubi studied medical waste disposal management and related wastes in hospitals selected in Isfahan, Gilan and Kohkiluyeh & Boyer-Ahmad in 2009 and evaluated the status of hospitals under study regarding separation, package, collection and protection of wastes in a good level.<sup>[30]</sup> In the study done by Mohamad in Bahrain, waste separation was evaluated by 86% in healthcare facilities and it is not agreed with results of present study. One of causes of this disagreement is that data gathering tool is different.<sup>[31]</sup> In the study conducted by Raeisi, patient's safety culture was studied in Isfahan hospitals. No significant difference was found between governmental and non-governmental hospitals about safety culture of patient.<sup>[32]</sup> Concerning results of the present study, the amount of realization of safe environment standards was moderate in hospitals selected by Shahid Beheshti university of Tehran. 58.5% of standards of attracting participation and interaction with patient and society have been realized. Providing a competitive space for managers of hospitals causes more motivation and efforts in direction of implementation to patient's safety programs. In the group of attraction of participation and interaction with patient and society, results indicated that correct identification of patients has been less paid attention in hospitals under study. This requires more attention of staff and identification of patients in therapeutic wards. 79.75% of standards of evidence-based and safe clinical services have been realized. In the group of safe environment standards that associate with safe waste disposal management, many actions have been taken but they require promotion and improvement. Concerning it is necessary to obtain 100% vital standards in all dimensions for reaching the least level of hospitals, at the moment, the programs and policies of the organization are not enough in this field. Therefore, essential targets should be considered in operational and strategic planning in direction of reaching completely to standards in four groups under study. Also, paying attention to safety culture and improving it, regular visits of patient's safety management, paying attention to management of medical equipment in direction of governance and leadership, using patient's correct identification system and taking actions for informed participation of patients and their companions, increasing relational level of treatment team and patients/companions in direction of attraction of participation and interaction with patient and society, paying attention to clinical errors especially medicinal errors and issues related to blood and its

products in direction of evidence-based and safe clinical services and implementing safe waste disposal management system in direction of safe environment cause promotion of patient's safety level and more rapid and effective access to standards required in the questionnaire and improve patient's safety condition. Therefore, it is suggested that in order to promote patient's safety friendly, patient's safety friendly programs should be included in operational and strategic programs and technical, qualified and skilful staff should be employed. Also, in order to promote information of patients and their companions about health, to direct power and participation in taking correct decision on treatment and to identify correctly patients and its verification in all treatment stages, the hospital should settle problems related to lack of correct identification of patient by a proper patient's identification system. Effective management, promotion of motivation in nurses and also increase of scientific ability and clinical skills of nurses for implementation of medicinal prescriptions due to medicinal mistakes and threat of patients' safety are suggested.

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