Application of WHO model for evaluating Patient Safety Friendly Hospital Initiatives (PSFHI) in an Eye hospital in Tehran, Iran

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Abstract:
Background: Patient safety is one of the major issues concerning the medical community and the World Health Organization (WHO) in most countries. This study aimed to evaluate the patient safety status in an Eye Hospital in Tehran, using the WHO model for Patient Safety Friendly Hospital Initiatives (PSFHI) in 2012.
Methods: This Cross-Sectional study was done in an Eye Hospital in Tehran. Measurement tool was a checklist related to the PSFHI, including 140 standards in three groups of critical, core and developmental. It was covering five domains of: a) Leadership and management, b) Patient and public involvement, c) Safe evidence-based clinical practices, d) Safe environment, and e) Lifelong learning.
Results: Compliance with critical, core and developmental standards were 77.78%, 75.29%, and 21.42% respectively. The Rates of Meeting Standards in the leadership and management, patient and public involvement, safe evidence-based clinical practices, secure environment and for lifelong learning were 66.89%, 42.85%, 75.68%, 73.68%, and 63.63% respectively.
Conclusions: The PSFHI standards play important role in improving patient safety using leadership, safety practices and creating good working conditions and environment for the staff. So focus on these standards is essential in improving the patient safety in hospitals in Iran.

Keywords: Patient safety, Patient Safety Friendly Hospital Initiatives (PSFHI), Hospital, Iran

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1. Introduction

Development of patient safety has a major role in preventable disabilities and mortalities in hospitals. Patient safety improvements are being achieved as a result of medical care provided for patients in countries, which have direct impacts on lives saved and preventing patients' disabilities. Evidence is gradually emerging in many developing

countries (1-3) and there is a slow but continuous increasing trend among policymakers and practitioners in awareness of the risks associated with unsafe health care (4).
Healthcare related infections in some developing countries are 20 times higher than in developed countries (5). It seems necessary that in developing countries some efforts should be made to collect evidence related to the unsafe care simultaneously with efforts to deal with this problem (6). So far, extensive studies have been conducted in many countries, such as Iran, in some areas related to patient safety and side effects of healthcare, including the incidence of bed sores, infections and falling out of bed (7-18), which their results indicate a high percentage of complications after treatment, hospital infections, increased length of hospital stay and other complications related to hospitalization and treatment. One of these studies that conducted in six countries, including Egypt, Jordan, Morocco, Sudan, Tunisia and Yemen, showed that about 18% of inpatient admissions were related to adverse events. Although some progress has been made in very complex areas of health care, there is still a sense of hopelessness about the results improving patient safety (19-20).

Countries of the Eastern Mediterranean Region, with support of the World Health Organization, have adopted a similar approach by way of the Patient Safety Friendly Hospital Initiative (PSFHI). This initiative was launched by the Eastern Mediterranean Regional Office of the World Health Organization (WHO EMRO) in 2007 to tackle the enormous problem of unsafe healthcare in the region. This pattern is considered as a valuable tool for evaluating patient safety, due to its consideration to the various aspects of patient safety and standard plan in each field. However, so far little research has been done by researchers on patient safety using the PSFHI tool.
Due to the importance of the issue and the lack of research in the country, this study conducted to evaluate the patient safety status in an Eye Hospital in Tehran, using the WHO model for patient safety friendly hospital Initiatives in 2012.

2. Material and Methods

This study was a cross-sectional and descriptive study conducted in an Eye Hospital in Tehran in 2012. Sample of study included only Farabi Eye Hospital because it's unique in Middle East and has selected by Tehran University of Medical Sciences for implementing PSFHI. Data collection tool was checklist related to the PSFHI. The assessment checklist included 140 safety standards in five domains including: leadership and management, patient and public involvement, safe evidence-based clinical practices, safe environment and lifelong learning. Standards were classified in three categories of critical (20), core (90) and developmental (30) standards. Totally, 143 cases of documents were assessed in various activities in hospital, including patient safety activities and its promotion in hospitals, medical equipment and maintenance management, tasks and competencies of clinical staff and their performance, programs and policies of the hospital, patient rights, activities related to the quality section and improvement of hospital, infection control, blood banks, medical systems, medical records, environment security and waste management, as well as a number of questions for an interview with the hospital administrator, heads of some departments, staff and patients, some observations of the different parts and records (table 1). Reliability and validity of checklist was approved by the Eastern Mediterranean Regional Office of WHO. Each of the standards was scored using the assessment manual and, then, was analyzed comparatively using descriptive statistics, including mean, frequency, frequency percentage.

Table 1. Patient safety domains, sub-domains and Standards

Areas	**sub-domains**	**Standards**			
		critical	**core**	**developmental**	**Total**
Leadership and Management	6	9	20	7	36
Patient and public involvement	7	2	16	10	28
Safe evidence-based clinical practices	6	7	29	8	44
Safe environment	2	2	19	0	21
Lifelong learning	2	0	6	5	11
Maximum Score	24	20	90	30	140

3. Results

Critical standards included 20 standards in different domains that minimum standards were in this category. Based on the obtained results, 55.56% of the critical standards had gotten a full score, 22.22% relative score, and 22.22% zero score, which totally 77.78% of the considered standards had been met. Core standards consisted of 90 standards in different domains of which 55.29% had gotten full score, 20% relative score, and 24.71% zero score, which

totally 75.29% of the standards had been met. And in developmental standards 10.71% had gotten full score, 10.71% relative score, and 78.57% zero score, which totally 21.42% of the related standards had been achieved in the studied hospital. Overall, the critical standards and developmental standards had met the highest (77.78%) and lowest (21.42%) standards, respectively (Table 2).

Table 2. Percentage of scores of standards (in terms of importance and priority)

Standards	Full Score	Relative Score	Zero Score	The Rate of Meeting Standards
Critical Standards	% 55.56	% 22.22	% 22.22	% 77.78
Core Standards	% 55.29	% 20	% 24.71	% 75.29
Developmental Standards	% 10.71	% 10.71	% 78.57	% 21.42

The first area, leadership and management, included 36 standards which 30.56% had gotten full score, 33.33% relative score, and 36.11% zero score and, totally, 66.89% of standards had been met. In patient and public involvement, 35.71% had achieved full score, 7.14% had gotten relative score, and 57.15% had gotten zero score, which totally 42.85% of these standards had been met. In safe evidence-based clinical practices, 67.57% of standards had gotten full score, 8.11% had received relative score, and 24.32% had gotten zero score, and totally 75.68% of standards had been met. In safe environment, 68.42% had gotten full score, 26.5% had achieved relative score, and 26.31% had gotten zero score, which totally included 73.68% of standards had been met. Also, in the lifelong learning, 9.90% had gotten full score, 54.54% had achieved relative score, and 36.36% had gotten zero score, and totally 63.63% of standards had been met (Table 3).

Overall, safe evidence-based clinical practices (with 75.68%) and patient and public involvement (with 42.85%) had obtained the highest and lowest scores, respectively. Finally, critical standards related to the patient and public involvement, as well as, safe environment had obtained the highest rate of meeting standards (with 100%). However, the developmental standards related to the patient and public involvement had obtained the lowest scores (with zero score) (Table 4).

Table 3. Percentage of scores of Domains in hospital

Domains	Full Score	Relative Score	Zero Score	The Rate of Meeting Standards
Leadership and Management	% 30.56	% 33.33	% 36.11	% 66.89
Patient and public involvement	% 35.71	% 7.14	% 57.15	% 42.85
Safe evidence-based clinical practices	% 67.57	% 8.11	% 24.32	% 75.68
Safe environment	% 68.42	% 5.26	% 26.31	% 73.68
Lifelong learning	% 9.09	% 54.54	% 36.36	% 63.63

Table 4. Percentage of scores of sub-domains in hospital

Domains	Standards		
	Critical	Core	Developmental
Leadership and Management	% 66/66	% 80	% 14.28
Patient and public involvement	% 100	% 62.5	% 0.00
safe evidence-based clinical practices	% 80	% 84.61	% 33.33
Safe environment	% 100	% 70.58	Does not exist
Lifelong learning	Does not exist	% 66.67	% 60

4. Discussion

Patient safety has recognized as a problem in most countries. One of the most important actions in patient safety is identifying the root of causes and conducting research for solving them. This increases the awareness of policy makers, patients, mangers and other stakeholders (21). Given that the current health care system is very complex, care is quickly provided in a high-pressure environment in which there is a wide range of technologies, and its use is on personal decision and individual and daily judgment of health employee (22). The results of several studies of healthcare organizations show the prevalence of medical errors, and the long distance between the qualities of health

care provided and the standards, such as medical errors, complications and infections after surgery, inadequate screening and cancer and etc (23). In this study, the studied hospital in the critical standards had gotten the highest score (77.78%) and in the developmental standards the lowest one (21.42%). Also, scores in the safe evidence-based clinical practices standards (75.68%) and in the area of patients and the public involvement (42.85%) were the highest and lowest ones, respectively. Generally, the hospital had a high level in terms of meeting the existing standards, and high critical and core standards had been met.

In Siddiqi and colleagues' study (24); safe environment (64%) and patient and public involvement (25%) had met the highest and lowest standards, respectively. In Baghaee`s study (25), the management support from patient safety was an important factor and its improvement and promotion was necessary, which this emphasizes on the necessity of items related to the leadership and management of the hospital. Also, in Fajardo's study (26), organizational learning items got the highest scores. One of the shortcomings of the hospital studied by the PSEHI model was that it did not have any expert with patient safety responsibility, although the existence of this person who was familiar with all aspects and areas of patient safety was necessary in the hospital. Also, the lack of regular training courses for the employees to improve of their skills and familiarize themselves with the new problems in field of safety can play an important role in the implementation of patient safety in hospitals.

5. Conclusion

In summary, the findings of this research showed the PSFHI model is a useful model for survey of patient safety in hospitals. The PSFHI standards play an important role in improving patient safety using leadership, safety practices and creating good working conditions and environment for the staff. So focus on these standards is essential to improve patient safety in hospitals in Iran. Furthermore, the use of PSFI model in national level is recommended for reducing medical errors and improving patient safety.

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Conflict of Interest:

There is no conflict of interest to be declared.

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