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Patient Safety Status in Selected Training Hospitals Affiliated to Mashhad University of Medical Sciences, Mashhad, Iran

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ABSTRACT

Introduction:
The quality and safety of care and services provided to the patient are among the most important issues in the health care sector. Therefore, the present study was conducted to investigate the current status of patient safety in hospitals affiliated to Mashhad University of Medical Sciences, Mashhad, Iran.

Materials and Methods:
The present study with a pretest and posttest design was carried out on 11 educational hospitals affiliated to Mashhad University of Medical Sciences. The hospitals were evaluated using the checklist of patient safety friendly hospital that is approved by the Ministry of Health. After analyzing the results with regard to the weaknesses, feedback was provided for each hospital, and then the hospitals were reevaluated by the same checklist. The data were analyzed by SPSS software (version 22).

Results:
The results of this study showed that in the first 6 months of the study within March to September 2017 before providing the feedback to the hospitals, the average accordance of hospitals with patient safety standards was 67.1% that reached 72.72% after delivering the feedback, applying patient safety standards in hospitals, and eliminating deficiencies.

Conclusion:
Hospitals should obtain the total score of the checklist to reach the patient safety friendly hospital rank; however, an average of about 75% is also significant, and planning is essential to achieve the maximum scores.

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Introduction

Patient is the main pillar in the health care system. Therefore, the quality and safety of care and services provided to patients are among the most important issues in the health care sector (1). Patient safety, as one of the main components of the quality of health care services, is defined as avoiding any type of injury and hurt to patients during the provision of health care (2). Patient safety includes medicinal errors, misdiagnosis, device and equipment failure resulting in an inaccurate diagnosis, wrong treatment, and hospital infection.

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The philosophy of patient care is contrary to the injury to the patient; however, therapies are not always safe, and there is a possibility of medical errors and events that could threaten patient safety. Based on the statistics, it is shown that patients encountering with the health system suffer from complications and injuries caused by the provision of services, and new challenges are added to their problems (3), as 10% of patients are injured at varying degrees during hospitalization; nevertheless, up to 75% of these injuries can be prevented (4). Within 5-10% of treatment costs are due to unsafe clinical services, which can lead to harm to patients (5). Nearly, 1 in every 10 patients receiving health care in high-tech hospitals is injured (6). A comprehensive approach to patient safety consists of six main domains, including structure, environment, equipment/ technology, processes, people, and leadership system/culture. By the adoption of this approach and identification of the features that are involved in increasing the risk of errors, risks can be reduced and safety can be improved (7). The deployment of this model will help organizations providing health care in the realization of clinical governance measures, risk management, and quality improvement (8). It is summarized in the seven steps of establishing a culture of patient safety, leading and supporting employees, uniting and integrating the operations related to risk management, encouraging reporting, engaging individuals and society in safety issues and communicating with them, learning and sharing safety lessons, and adopting solutions to prevent injuries (9).

Frankel et al. (2005) in their study have shown that rounds of safety status assessment are considered effective tools for the identification of safety issues, interaction with leadership, and support from a culture of safety. In addition, the implementation of these rounds requires organizational commitment and support (10).

Considering the importance of paying attention to the quality of services provided in hospitals and need for maintaining patient safety, this study was carried out to examine the current status of patient safety in the hospitals affiliated to Mashhad University of Medical Sciences, Mashhad, Iran.

Materials and Methods

This interventional study with a pretest-posttest design was conducted on all educational and treatment centers affiliated to Mashhad University of Medical Sciences within two 6 months during March to September 2017 and September 2017 to March 2018. A checklist of mandatory standards for patient safety friendly hospitals was used for the assessment of patient safety in hospitals. The checklist includes the standards of patient safety friendly hospitals, documentation to be reviewed for each standard, relevant interviews, observance guides, and rating guidelines, and the second part includes patient safety friendly hospital assessment tools. The patient safety standards consist of 5 main groups subdivided into 24 subgroups. There are a set of mandatory, fundamental, and advanced standards in these 24 subgroups.

To recognize a hospital as a patient safety friendly center, 100% of the mandatory standards should be met. Therefore, the hospitals were evaluated in terms of patient safety friendly status by referring to the hospitals and using a checklist of the hospital mandatory standards. The checklist of mandatory patient safety standards consists of four dimensions. These four dimensions were A) governance and leadership with four subgroups and nine standards, B) interaction with patient and community with two subgroups and two standards, C) safe and evidence-based clinical services with four subgroups and seven standards, and D) safe environment with one subgroup and two standards. To score an eligible hospital, each index was rated 1, and the score was 0.5 in the relative condition. Moreover, if the item was not realized, there was no score.

Data collection was conducted through interviewing, reviewing documentation, observing, and group visiting; accordingly, an interview was carried out with each of the authorities in patient safety, laboratory and blood bank, pharmacy, infection control, and environmental health, in addition to an unorganized interview with some head nurses, nursing staff, doctors, service personnel, and patients. To evaluate hospital compliance rate with the mandatory

standards of patient safety friendly hospital, the documentation related to mandatory patient safety standards, such as hospital strategy documentation, detailed operational plan of patient safety mandatory standards, notification and description of the tasks of the expert in charge of patient safety and expert coordinator for patient safety and risk management, reports of conducting patient safety management visits, Hospital Organizational Chart, Infection Control Operational Program, list of essential equipment and proceedings of the Mortar Committee meetings, disinfection and immediate sterilization, personnel recruitment way, informed consent, patient identification, emergency declaration of vital results, announcement of outstanding results of paraclinical tests, hemovigilance, vital medicines, and wastes were investigated. In addition, various wards were visited in the form of group visiting. The scoring of each item was based on the subject's response to the desired item and existence of the relevant documents, in such a way that the measures taken in each domain were recounted by the interviewees, and the item was scored by providing related documentation and visit. After visiting the hospitals in the first 6 months of the study period and rating each hospital based on the weaknesses and need for correction, each hospital was given feedback and solutions to overcome the weaknesses.

For example, in hospitals without free one-way communication channels from the laboratory, installing free and one-way communication channels was proposed to announce critical results. Then, in the second 6 months of the study period, the hospital was reassessed using the checklist, and the results were evaluated. After collecting the data, SPSS software (version 20) was used to analyze the data. Descriptive statistical tests were also utilized to analyze the data.

Results

In this study, 11 governmental hospitals in Mashhad affiliated to Mashhad University of Medical Sciences were included and evaluated for patient safety status. Seven studied hospitals were specialized, and one of them was a pediatric super-specialty hospital.

Table 1: Characteristics of the studied hospitals based on the number of beds, expertise, and occupancy rate

Hospital code	Number of beds	Occupancy rate (%)	Hospital type
1	136	89	Specialized
2	1228	78	General
3	100	75.85	Specialized
4	64	108	Specialized
5	159	92	Specialized
6	160	60.73	Specialized
7	320	89.36	General
8	229	85	General
9	96	90	Specialized
10	320	90	General
11	66	56	Specialized

Before providing feedback to hospitals, the rate of compliance with patient safety standards in the hospitals was 67.1%. Furthermore, after providing feedback and reassessment in the second 6 months of the study period, the rate of compliance with patient safety standards was reported as 72.72%. The results of the Wilcoxon signed-rank test showed that there was no statistically significant difference between the hospital scores before and after the presentation of the feedback (P=0.68). Moreover, there was no correlation between the number of beds in hospitals and compliance with the standards based on Pearson's correlation coefficient (P=0.69).

Table 2: Compliance with patient safety standards in hospitals

Hospital	First 6 months before providing feedback (%)	Second 6 months after providing feedback (%)
Ommolbanin	69.44	83.33
Imam Reza	77.77	94.44
Omid	58.3	66.66
Khatamolanbia	58.3	77.78
Dr. Sheykh	66.66	77.78
Dr. Ali Shariati	66.66	83.33
Shahid Hasheminejad	69.44	91.67
Taleghani	72.22	75
Alavi	52.77	77.78
Shahid Kamyab	66.66	72.22
Montaserie	80.55	86.11

The highest score in the hospitals was reported for dimension D, a safe environment in which the disposal of waste was properly conducted. In addition, the lowest scores were reported for governance and leadership (i.e., dimension A) requiring to be further considered in hospitals according to their different dimensions.

Discussion

This study was performed to evaluate feedback provided to hospitals regarding the patient safety status in hospitals affiliated to Mashhad University of Medical Sciences. The results of this study showed that in the first 6 months of the study, before providing feedback, the average patient safety standards in the hospitals was reported as 67.1%. After providing feedback, implementation of the solutions in the hospitals, and removing the weaknesses, the mean of compliance with patient safety standards reached 72.72%; although this difference was not statistically significant, it was effective and considerable in the improvement of hospital standards in achieving the goals of patient safety friendly hospitals. Furthermore, the associated results were evident in the hospitals. Training patient safety was one of the most important tasks to ensure safe patient care (11); however, this would take considerable time to actually be trained and act according to them. Therefore, it could not be said that providing feedback to meet the standards has not certainly been effective.

Considering the average level of patient safety standards in Mashhad hospitals, it can be said that although the hospitals should gain the whole score (100) to achieve the standards of patient safety friendly hospitals, the average of approximately 75% is significant. In addition, this rate can increase by investing and spending time. The results of this study are not consistent with the findings of a study by Fathi et al. in Kurdistan, Iran, (12) indicating that patient safety was not favorable in Kurdistan hospitals. Sabahi Bidgol et al. (13) also showed that the patient safety status in Kashan, Iran, was not favorable. Another study conducted by Mousavi et al. demonstrated that compliance with the patient safety standards was desired in the operating rooms of the hospitals affiliated to Tehran University of Medical Sciences, Tehran, Iran (14), which is in line with the results of the present study.

In addition, the results of a study performed by Asefzadeh et al. in Rasht, Iran, are consistent with the findings of the present study (15). In justifying the results of the current study, it can be said that Mashhad located in the east of the country is the main pillar of treatment with remarkable facilities; therefore, it can approach standards easier than other cities and small health centers. Furthermore, considering that the studied hospitals are among the main centers of treatment in the country, there has been more focus on these centers to reach the standards. The results of this study are in line with the findings of a study by Asefzadeh et al. (15) in which the number of beds and observance of standards were not correlated. Noroozi et al. rated the percentage of compliance with patient safety standards in Shiraz, Iran, with an average of 58% (16) which is lower than that reported for the hospitals of Mashhad. Considering that none of the hospitals in Mashhad have achieved a perfect score in compliance with the standards, it is necessary to generally overview the status of the hospitals for the enhancement of compliance with patient safety.

Conclusion

According to the results of this study, conducted on the educational hospitals of Mashhad, it was shown that none of the hospitals achieved 100% of the vital standards in all the aspects, examined to attain the minimum level of patient safety friendly hospitals, that could be harmful to the treatment team and patients. However, given the fact that organizational plans and policies have already been notified to hospitals in order to reach the patient safety standards, it can be expected that hospitals will better perform in future surveys. Cultural development is one of the most important parts leading to the best achievement with low investment. Moreover, the standards can be greatly approached by preparing conditions, training the treatment team, and providing necessary bedding in hospitals.

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