

Evaluation of Patient Safety Status in Teaching Hospitals of Arak City

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ARTICLE INFO	ABSTRACT
<p>Article type: Original Article</p>	<p>Introduction: Patient safety and quality of care are among the most important points that hospitals should emphasize. Therefore, this study was conducted to evaluate the status of mandatory patient safety standards in teaching hospitals in Arak City.</p>
<p>Article History: Received: 25 Nov 2023 Accepted: 18 Dec 2023</p>	<p>Materials and Methods: This cross-sectional descriptive study was conducted from February to July 2023. The data collection tool was a checklist of mandatory standards from the Patient Safety Friendly Hospital Initiative (PSFHI). The required data were gathered by reviewing the documents, interviews, and observations in five teaching hospitals in Arak City. Data were analyzed using SPSS software and descriptive statistical methods. Based on the average compliance score, these hospitals were classified as weak (lower than 50%), moderate (50-70%), and good (higher than 70%).</p>
<p>Key words: Hospital, Patient safety, Safety, Patient safety friendly hospital initiatives.</p>	<p>Results: These hospitals' average compliance with mandatory patient safety standards was 89.48 ± 4.82, indicating good compliance. The average compliance in the areas of leadership and management, patient and public involvement, safe and evidence-based clinical practices, and safe environment in teaching hospitals of Arak City, with a score of 93.28 ± 2.5, 80 ± 20.9, 84.65 ± 6.14 and 100, respectively, are in good status.</p> <p>Conclusion: Five teaching hospitals in Arak City comply well with mandatory patient safety standards. However, since achieving 100% compliance with the mandatory standards is necessary to obtain the title of Patient Safety Friendly Hospital, and none of the studied hospitals have acquired the necessary score to achieve this title, more effective managerial efforts are crucial to full compliance with mandatory standards.</p>
<p>► Please cite this paper as: Rajabi M. Evaluation of Patient Safety Status in Teaching Hospitals of Arak City. <i>Journal of Patient Safety and Quality Improvement</i>. 2023; 11(4):199-205. Doi: 10.22038/PSJ.2023.76442.1417</p>	

Introduction

Hospitals, recognized as the most acknowledged and largest healthcare organizations in communities, operate to improve the health of individuals and society (1). Since no issue contradicts healthcare philosophy more than harming patients, the safety and quality of care provided are among the most important points that hospitals should emphasize (2-4). According to published reports and statistics from the World Health Organization (WHO), the occurrence of adverse events during medical care is around 10%, with half of these incidents being preventable by compliance with the standards of patient care (5).

In recent decades, medical errors and patient safety have received unprecedented attention in developed countries. Patient safety has become one of the main priorities in United States hospitals, and the WHO has initiated the Global Patient Safety Research Network (5).

WHO regional office for the Eastern Mediterranean (EMRO) has identified the organization and implementation of patient safety programs as a key strategy. In 2006, they introduced a comprehensive program titled the "Patient Safety Friendly Hospital Initiative (PSFHI)" to develop interventions related to patient safety (6).

This program comprised 140 standards in five areas: leadership and management (36 standards), patient and public involvement (28 standards), safe, evidence-based clinical practices (44 standards), safe environment, and life learning (11 standards). Each area included mandatory, essential, and advanced standards (7).

Assessment and compliance of hospitals' achievement to these standards identifies their strengths and weaknesses and enhances their accountability and responsiveness in delivering safe and quality care. It encourages patient safety improvements and provides the basis for implementing patient safety enhancement solutions (5,8,9).

In the Islamic Republic of Iran, according to official statistics from the Ministry of Health (MOH), occurrences such as medication errors (mistakes in type and dosage), surgical mishaps (performing surgery on the wrong body part, unnecessary surgery, and incorrect surgical procedures), misdiagnoses

(failure to diagnose, incorrect diagnoses, and delayed diagnoses), hospital-acquired infections, falls from beds, pressure ulcers, and incorrect treatment choices are among the most threatening factors to patient safety in hospitals (10). Additionally, research on patient safety culture in Iranian hospitals emphasizes staff capacity building and the participation of service recipients in patient safety (11). Hence, in collaboration with the WHO's representation office in Iran, the Iranian hospital management and clinical excellence office started organizing and planning the PSFHI in 2010. The first phase of this program in Iran aims to meet mandatory standards for admission to the Patient Safety Friendly Hospital. These mandatory standards encompass 20 standards in four areas: leadership and management (nine standards), patient and public involvement (two standards), safe and evidence-based clinical practices (seven standards), and a safe environment (two standards) (12).

These standards are essential for implementing patient safety programs in hospitals, enabling hospitals to evaluate care provision from a patient safety perspective, staff capacity building in safety, and service recipient involvement in improving safety (12,13).

According to a study by Mazhari in ten selected hospitals in Tehran, the average compliance score with mandatory standards was 76%, indicating the good performance of these hospitals in patient safety (14).

In Jabari's study, the status of mandatory standards in selected hospitals of Isfahan University of Medical Sciences, with an average compliance score of 55.3%, was reported at a moderate level (7). Additionally, Asefzadeh's study on compliance with mandatory standards in hospitals in Rasht City demonstrates hospitals' moderate performance in patient safety (15).

Consequently, institutionalizing a patient safety culture, emphasizing patients in service delivery, educating and training staff and patients, and eliminating legal barriers to patient safety are among the key priorities and fundamental issues in Iran's healthcare system. Given the paramount importance of patient safety as a priority concern for global public health by the WHO (16), considering the absence of research on the compliance

with the mandatory standards of PSFHI in hospitals in Arak City, and the importance of solving issues related to patient safety and promoting patient safety in medical sciences universities (17), this study was conducted to assess the status of mandatory standards of patient safety-friendly hospitals initiatives in teaching hospitals of Arak City.

Material and Methods

This cross-sectional descriptive study was conducted from February to July 2023. The research sample was five teaching hospitals in Arak City, selected through census sampling. The data collection tool was a checklist of mandatory standards from the PSFHI, as outlined in the patient safety assessment manual (Guide for Assessors) published by Iran's MOH (18,19). This checklist includes 20 standards in four areas: leadership and management (nine standards and 12 criteria), patient and public involvement (two standards and two criteria), safe and evidence-based clinical practices (seven standards and ten criteria), and safe environment (two standards and three criteria). Considering the introduction of PSFHI standards by EMRO and the determination and publication of these standards by Iran's MOH as a guiding protocol for evaluating patient safety-friendly hospitals, the validity and reliability of this checklist have been confirmed (18,19). The required data for this study were gathered through the review of the necessary documents for each standard (28 criteria), interviews with patient safety officers, patient safety coordinators, hospital managers, infection prevention and control nurses, laboratory staff, blood bank managers, chief pharmacists, head nurses, medical waste management officers, and selected patients, and observation of certain processes. At first, the score for each standard was determined based on the scoring guide available in the patient safety assessment manual (18, 19).

The total score for each area was subsequently derived from the sum of standard scores within each area. Finally, the cumulative scores of the four areas determined the total scores for mandatory standards in each hospital. The scoring

method for each standard was as follows: if the standard met the conditions regarding structure, process, and outcome, it received a score of 1; if the standard met the conditions concerning structure and process, it received a score of 0.5, and if the standard was not met, it received a score of 0. The maximum score for the leadership and management area was 9, the patient and public involvement area was 2, the safe and evidence-based clinical practices area was 7, and the safe environment area was 2. The minimum score in all these areas was 0. Consequently, the maximum cumulative score for mandatory standards was 20, while the minimum score was 0. After determining the scores, the data were analyzed using SPSS software and descriptive statistical methods. Mean, frequency, and percentage were used at the descriptive statistical level. If the average compliance score for each of the four areas and the overall average compliance score for mandatory standards were below 50%, the hospital's status in the respective area and overall compliance level was considered weak. The hospital's status was considered moderate in cases where the average score for each area and the overall compliance score ranged between 50% and 70%. If the average compliance score for each area and the overall compliance score for mandatory standards exceeded 70%, the hospital's status was considered good.

Results

In this study, five teaching hospitals located in Arak City were evaluated concerning their compliance with the mandatory standards of patient safety (Table 1).

The average compliance with mandatory patient safety standards was 89.48 ± 4.82 , indicating good compliance. The average compliance in the areas of leadership and management, patient and public involvement, safe and evidence-based clinical practices, and safe environment in teaching hospitals of Arak city, with a score of 93.28 ± 2.5 , 80 ± 20.9 , 84.65 ± 6.14 and 100, respectively, are in good status.

Among the four mandatory patient safety standards areas, the safe environment achieved the highest score of 100 in all hospitals, while patient and public

involvement received the lowest average score of 80 ± 20.9 . As shown in Figure 1, among the five teaching hospitals, Amir al-

Momenin Hospital scored 95.02, indicating the highest compliance with mandatory patient safety standards.

Table 1: Percentage of compliance level with the mandatory standards of PSFHI in studied hospitals

Hospital	Khansari	Amirkabir	Amir al-Momenin	Valiasr	Taleghani	Mean
Areas						
Leadership and management	94.4	94.4	94.4	94.4	88.8	93.28±2.5
Patient and public involvement	75	100	100	50	75	80±20.9
Safe, evidence-based clinical practices	78.57	78.57	85.71	87.57	92.85	84.65±6.14
Safe environment	100	100	100	100	100	100
Compliance level	86.99	93.24	95.02	82.99	89.16	89.48±4.82

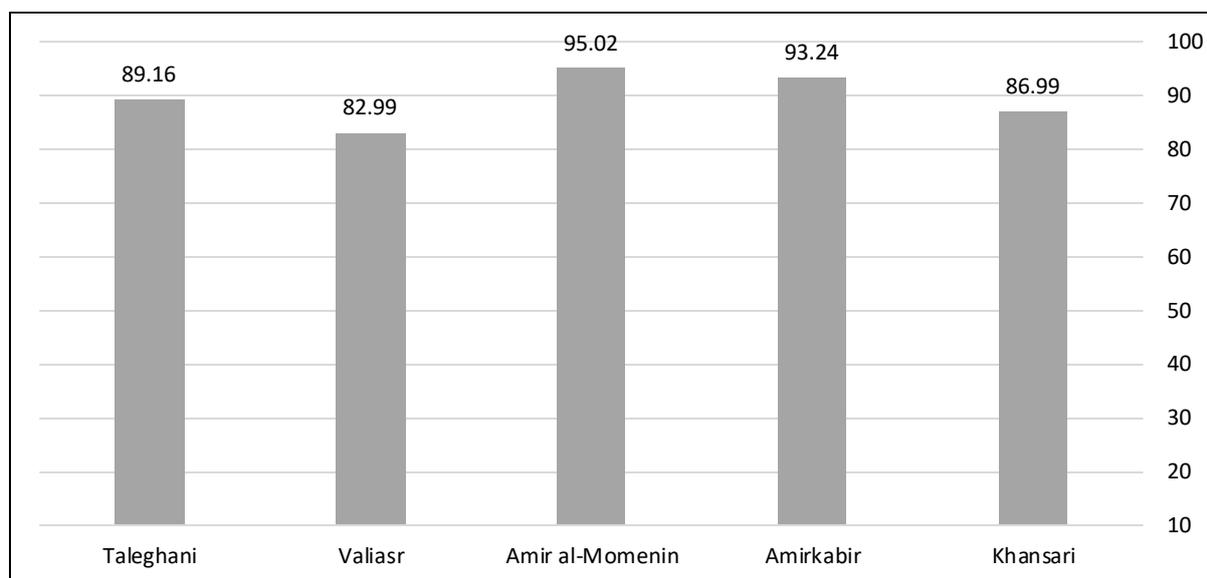


Figure 1: Comparing the compliance level of mandatory patient safety standards in studied hospitals

Discussion

According to the results of this study, compliance with mandatory patient safety standards in teaching hospitals of Arak City was at a good level, with an average score of $89.4\pm 4.82\%$. Similar to the finding of this study, Mehrtak et al. assessed the safety of the operating room of university hospitals in Ardabil City based on the mandatory standards of the PSFHI with an average score of 81% at a good level of compliance (20). Taheri et al. also assessed compliance with mandatory patient safety standards in three teaching hospitals in Mashhad, reporting a good level of compliance with an

average score of 75% (5). In the study of Nekoei-Moghadam et al., by a systematic review of internal studies conducted in the field of patient safety infrastructures in hospitals in Iran, the average compliance of mandatory patient safety standards between 2001 and 2021 was reported as 70% and at a good level (13).

In contrast to the results of this study, Habibzadeh et al. evaluated compliance with mandatory patient safety standards in four hospitals affiliated with Urmia University of Medical Sciences, reporting a moderate level of compliance with an average score of 61% (21). Raeisi et al. assessed compliance with

mandatory patient safety standards in four government hospitals, two private hospitals, and two social security-affiliated hospitals in Isfahan City, reporting a moderate level of compliance with an average score of 57.6% (12). Generally, and by reviewing internal studies, it can be concluded that the compliance score with mandatory patient safety standards in Iranian hospitals is moderate to good, and no study has reported weak or complete compliance.

The comparison of the four areas of mandatory patient safety standards in five teaching hospitals indicates that the area of safe environment with an average score of 100% has the highest score and complete compliance. Leadership and management, with an average score of 93%, rank second. The safe and evidence-based clinical practices area, averaging 84%, is placed third, while patient and public involvement, averaging 80%, occupies the fourth rank. These hospitals exhibit good compliance with the four areas of mandatory standards of PSFHI. Only one of the hospitals showcased an average compliance score of 50% in the patient and public involvement area, considered at a moderate level.

Our results are consistent with Nekooi-Moghadam et al. in terms of ranking the level of compliance with the four areas of mandatory patient safety standards. In the study of Nekooi-Moghadam et al., by assessing compliance with patient safety standards in five governmental hospitals, one educational hospital, and one private hospital, the area of safe environment demonstrated the highest compliance, and the area of patient and public involvement demonstrated the lowest compliance. However, in the Nekooi-Moghadam et al. study, patient and public involvement was rated at a weak level, but in the present study, this area is at a good level (13).

In the study of Jabbari et al., by evaluating the patient safety status in selected teaching hospitals affiliated with Isfahan University of Medical Sciences, the area of leadership and management, with an average score of 69%, was the highest, and the area of patient and public involvement, with an average score of 37% showed the lowest compliance with mandatory patient safety standards (7). The results of this study are consistent with the

current study in terms of the lowest rank of compliance in the area of patient and public involvement, but the area of leadership and management, which received the highest score in Jabbari's study, is ranked second in the current study. Furthermore, regarding the level of compliance, these areas were considered moderate and weak in the Jabbari study, while they are at a good level in the present study. Similarly, in the studies by Taheri et al. and Habibzadeh et al., the area of leadership and management has the highest level of compliance, and the area of patient and public involvement has the lowest (5,21). The results of these studies are consistent with the present study in terms of the lowest level of compliance in the area of patient and public involvement. The consistently lower-level compliance with mandatory standards in patient and public involvement areas across various studies emphasizes the necessity of establishing patient communication, patient education, empowerment, counseling services, and obtaining informed consent from patients.

In this study and among the four areas of mandatory patient safety standards, the safe environment has the highest level of compliance. Similar to the results of this study, in the study by Mirzaei et al., the status of 14 university hospitals and one private hospital in Isfahan City has been evaluated at a good level regarding waste management and environmental health (22). Gazrani et al. also evaluated the operating rooms in four hospitals in Bojnourd according to PSFHI standards. According to the present study, the status of operating room safety in these hospitals was at a good level, with an average score of 70%. The safe environment area has shown the highest compliance among the four areas of patient safety standards. These findings align with the current study (17).

Alizadeh et al. evaluated the patient safety status of Abuzar Hospital in Ahvaz based on two areas of leadership and management and patient and public involvement in three categories of mandatory, essential, and advanced standards. According to the results of this study, Abuzar Hospital has achieved a total score and 100% compliance in both assessed areas of mandatory standards, indicating a good level of patient safety (23). The current study's findings are consistent

with the reports by Alizadeh et al. In recent years, the focus on patient safety and regular implementation of accreditation programs in hospitals has improved the quality of clinical practices and ultimately improved patient safety. Moreover, improving the safety culture in hospitals, waste management, and empowering hospital managers in recent years are among the reasons for enhancing patient safety and greater compliance with the Patient Safety Friendly Hospitals Initiatives standards.

Despite implementing the accreditation program in hospitals, this study, specifically and for the first time, has evaluated the patient safety status of the teaching hospitals of Arak City based on patient safety-friendly hospital initiative standards.

Considering that in this study, compliance with mandatory patient safety standards in teaching hospitals of Arak City was at a good level, evaluating patient safety status at other times or based on essential and advanced standards may lead to different results. On the other hand, changing patient safety standards or examining patient safety status with other checklists or questionnaires may lead to different results.

Conclusion

According to the results of this study, teaching hospitals in Arak City have a good level of compliance with mandatory patient safety standards.

However, achieving 100% compliance with the mandatory standards of PSFHI is necessary to obtain the title of Patient Safety Friendly Hospital, and none of the studied hospitals have acquired the necessary score to achieve this title, so more effective managerial efforts are crucial to fully compliance with mandatory standards. Attention to the role and position of staff, staff training, regular hospital committees, effective communication with patients and their families, patient education and empowerment, obtaining informed consent from patients, and regular patient safety management walk-rounds are the most effective factors in successfully implementing patient safety programs. It is evident that focusing on and implementing each of these factors will help align Iranian hospitals with the standards of PSFHI and

achieve the title of Patient Safety Friendly Hospital.

Acknowledgment

The present study was approved by the Ethics Committee of Arak University of Medical Sciences, Arak, Iran (IR.ARAKMU.REC.1401.284).

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