Assessment of patient safety culture among personnel in the hospitals associated with Islamic Azad University in Tehran in 2013

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Abstract:
Background: Patient safety is an essential element in the quality of healthcare, and a clear knowledge of its culture in healthcare organizations will lead to both improved healthcare and patient safety. The aim of this study was to assess the patient safety culture at Islamic Azad University hospitals in Tehran, Iran, in 2013.
Methods: This cross-sectional study was conducted on clinical and diagnostic staff in all Islamic Azad University hospitals in Tehran in June 2013. The international "Hospital Survey on Patient Safety Culture" questionnaire was used as the measurement tool.
Results: In these hospitals, the overall positive score of patient safety culture was 35%. "Teamwork within units" (48% positive) was evaluated as reflecting the most knowledge of the aspects of patient safety culture, and "non-punitive response to error" (12% positive) was evaluated as reflecting the least knowledge of the aspects of patient safety culture.
Conclusion: The patient safety culture in the hospitals that were studied should be improved. This goal could be achieved by reinforcing the basics of patient safety culture by teaching the staff members about the aspects of a positive patient safety culture and encouraging them to incorporate these aspects in their day-to-day activities.

Keywords: Patient safety; Personnel; Hospital; Iran

1. Introduction

Patients' safety represents one of the most important challenges in the health sector, especially in developing countries (1). In 2004, the World Health Organization (WHO) stressed the importance of this issue by establishing an "International Alliance for Patient Safety." The aim of the Alliance was to integrate the extensive international efforts in the area of patient safety and move towards safer healthcare in member countries (2). The experts believe that healthcare organizations should develop a patient safety culture among their employees along with different

structural interventions to improve the quality of patient safety (3). The safety culture refers to a culture in which safety is a primary concern (4). In this respect, the culture of patient safety can be defined as acceptance and implementation of patients' safety as a first priority and common value within the organization (5). The presence of a safety culture helps to align the divergent attitudes of healthcare practitioners with the goals of patients' safety (6). Today, it has become a common practice to measure the quality of the patient safety cultures in healthcare organizations in order to identify relevant problems in this area. In recent years, many of the developed and developing countries have conducted a variety of studies in the field of patient safety in their healthcare organizations (7). Assessment of the current situation of patient safety culture is the first step in creating such a culture within an organization (8). Such an assessment provides valuable information regarding the conditions of different aspects of patient safety culture and relevant problems in this area for healthcare organizations, and it also allows inter-organizational comparisons to be made in this context (9). Given the importance of this issue and considering that, to date, systematic scientific studies have not been conducted on the culture of patient safety In hospitals affiliated with Azad Islamic University, we decided to study the current atmosphere by assessing the patient safety culture in the University's hospitals and take one step towards the implementation of a clinical ruling that the governance of patient safety is one of its dimensions. The aim of this study was to investigate the staff's perceptions in the diagnostic and treatment sections of Tehran Islamic Azad University-affiliated hospitals regarding the current state of patient safety culture in the work environment.

2. Material and Methods

This cross-sectional study was performed in June 2013. The research environment included all of the hospitals affiliated with Islamic Azad University in Tehran, i.e., the Javaheri, Amiralmomeinin, and Boali hospitals. The study population also encompassed all employees in the diagnosis and treatment sections of these hospitals, and, using the Morgan table, the sample size was determined to be 200 subjects. Then, the proportional allocation method was used to acquire a balanced distribution of the samples among different occupations. The samples were divided proportionately due to the size of the population in the jobs and the hospitals that were studied, and individuals were selected randomly to be part of the samples.

To date, many tools have been designed to assess patient safety, and almost all of them include the same five dimensions of safety culture, i.e., leadership, policies and procedures, personnel issues, communication, and reporting (10). One such tool is the questionnaire entitled "Survey of Hospitals on Patient Safety Culture" that was developed by the Agency for Healthcare Research & Quality (AHRQ) (11). The questionnaire has been used extensively to assess the comments of hospital staff about patient safety culture in different parts of the world (9, 12, and 13). The questionnaire contains 42 questions that assess 12 different areas of patient safety culture. It has already been translated into Persian, and its validity for use in Iran's hospitals has been confirmed through validated methods (14, 15). To assess the questionnaire's reliability, it was distributed randomly among 25 members of the community that was being studied on two different occasions at a 10-day interval (test – retest method).

In order to make the approach comparable with that of other studies, the proposed method of HSOPSC (Hospital Survey on Patient Safety Culture). A questionnaire designer was used (11). Hence, after reversing the questions with negative connotations, the responses of "very much agree" and "agree" / always and often to the questionnaire questions were calculated as a positive score for each question, and their means were calculated as the collective positive score in the studied area.

3. Results

Of the 200 questionnaires that were distributed among the sample subjects, 175 questionnaires were fully completed and returned (response rate: 87.5%). The mean age of the participants in this study was 38.55 ± 8. Female participants comprised 62.3% of the sample, and the rest were males. Nurses were represented to the largest extent in the sample (42%), and individuals employed in the radiology section represented the smallest group (4%). A significant percentage of the respondents (28%) worked in the Emergency Department. Many of the participants in the study (40%) had one to five years of work experience in a hospital (40%); a larger percentage had one to five years of experience at their current work site (50%). More than 67% of respondents worked more than 40 hours per week in the hospital. Finally, most of the respondents (more than 86%) had direct contacts and interactions with patients while doing their jobs. The general characteristics of the respondents are shown in Table 1.

Table 2 shows the positive scores related to 12 areas of patient safety culture in the hospitals that were studied. This table also contains survey information on U.S. hospitals in 2012 for the purpose of making comparisons. Every year,

the Agency for HealthCare Research & Quality (AHRQ) makes assessments of the patient safety culture situation in a number of hospitals in the United States using the HSOPSC questionnaire. AHRQ's 2012 report included a study of 1128 hospitals with more than 570,000 employees participating. The results of this study are reported in Table 2 in the 'basis column.' As the results in this table show, the positive rating of patient safety culture of the hospitals we studied in Iran rated significantly lower in all dimensions than their U.S. counterparts. The fifth dimension (teamwork within units) with 48% and the fourth dimension (organizational learning - continuous improvement) with 46% were the dimensions that had the most positive scores in the hospitals we studied in Iran. The eighth dimension (non-punitive response to error) and the ninth dimension (staffing) received positive ratings by only 12% and 22% of the respondents respectively, and they were identified as the weakest dimensions of patient safety culture in these hospitals. The sixth dimension (communication openness), with a 26% positive score in the hospitals we studied, had the largest percentage difference between the Iranian and U.S. hospitals, i.e., a 35% of difference. The 12th dimension (hospital handoffs and transitions) had only a 6% difference between the hospitals we studied and the basis hospitals in the U.S.

Table 3 presents the dimensions with the highest and lowest ratings of patient safety culture based on separate questions. As can be seen, question 4 that related to the fifth dimension (in this unit, the employees behave respectfully with each other) had the highest positive score of 56%, whereas question 16 that related to the eighth dimension (the employees are concerned that their faults will be recorded in the job file) had the lowest positive score of only 6%.

Table1. Work characteristics of participants

Parameter		Frequency	Percentage
Job	Physician	57	32.6
	Nurse	73	41.7
	Midwife	6	3.4
	Assistant	18	10.3
	Working in the lab	14	8
	Working in radiology	7	4
Experience in hospital	Less than a year	19	10.9
	One to five years	69	39.4
	Six to 10 years	45	25.7
	More than 11 years	25	24
Working hours every week	Less than 20 hours	5	2.9
	20 to 39 hours	52	29.7
	40 to 59 hours	91	52
	More than 60 hours	27	15.4
Ward	Internal	25	14.3
	Surgery	26	14.9
	Obstetrics and Gynecology	26	14.9
	Pediatrics	11	6.3
	Intensive Care	17	9.7
	Emergency	49	28
	Laboratory	14	8
	Radiology	7	4
Work experience in the relevant unit	Less than a year	33	18.9
	One to five years	88	50.3
	Six to 10 years	30	17.1
	More than 11 years	24	13.7
Direct contact with patients	Yes	151	86.3
	No	24	13.7

Table 2. Positive scores of the dimensions of patient safety culture in studied hospitals and Benchmark study

Dimension	Number of questions	Present Study	Benchmark Study
1- Frequency of event reporting	3	33	63
2- Overall perceptions of patient safety	4	37	66
3-Supervisor/manager expectations and actions promoting patient safety	4	42	75
4- Organizational learning – continuous improvement	3	46	72
5-Teamwork within units	4	48	80
6- Communication openness	3	27	62
7- Feedback and communication about error	3	38	64
8- No punitive response to error	3	12	44
9- Staffing	4	22	56
10- Hospital management support for patient safety	3	42	72
11- Teamwork across hospital units	4	39	58
12- Hospital handoffs and transitions	4	39	45
Total score	42	35	63

Table 3. Dimensions with the highest and lowest ratings of patient safety culture based on separate questions

Questionnaire items No.	Questionnaire Items	Percentage of positive responses
	Dimension 5 (Teamwork within units)	48
1	People support one another in this unit	45
3	When a lot of work needs to be done quickly, we work together as a team to get the work done	55
4	In this unit, people treat each other with respect	56
11	When one area in this unit gets really busy, others help out	37
	Dimension 4 (Organizational learning – continuous improvement)	46
6	We are actively doing things to improve patient safety	54
9	Mistakes have led to positive changes here	35
13	After we make changes to improve patient safety, we evaluate their effectiveness	49
	Dimension 8 (No punitive response to error)	12
8	Staff feel like their mistakes are held against them	15
12	When an event is reported, it feels like the person is being written up, not the problem	13
16	Staff worry that mistakes they make are kept in their personnel file	6
	Dimension 9 (Staffing)	22
2	We have enough staff to handle the workload	21
5	Staff in this unit work longer hours than is best for patient care	17
7	We use more agency/temporary staff than is best for patient care	29
14	We work in "crisis mode" trying to do too much, too quickly	19

4. Discussion

Patients' safety is one of the fundamental components of healthcare's quality. Concurrent with the development of efforts by health organizations to improve the quality of care, the importance of developing a safety culture has become more evident. Assessment of patient safety culture leads to the formation of a general understanding of the perceptions and attitudes of managers and staff on issues related to safety. In the present study, we used a reliable instrument (questionnaire) to try to determine the status of patient safety culture in hospitals affiliated with Azad Islamic University in Tehran. The positive scores on culture of patient safety among the hospitals that we studied were only 35%, whereas their U.S counterparts scored 63%. This reflects the large differences between the conditions related to patient safety culture in the hospitals in the two countries. Among the safety culture dimensions were the fifth dimension (teamwork within hospital units), which had a 48% positive rating, and the fourth dimension (organizational learning - continuous improvement), which had a 46% positive rating. The ratings of

these two dimensions were better than those of all of the other dimensions. Among other studies that have been conducted in Iran, a study by Baghaee et al. in hospitals affiliated with Urmia University of Medical Sciences, the same two dimensions had the highest positive ratings, but they were considerably higher than those in our study, i.e., 80% and 69%, respectively (16).

In a study by Abdi et al. conducted in selected hospitals associated with the Tehran University of Medical Sciences, the highest positive ratings were 47% for teamwork within units and staffing with 35% (17). Among other similar studies in other countries, i.e., the U.S. (18), Belgium (19), Turkey (20) Taiwan (9), and Lebanon (21), teamwork within hospital units had the highest positive ratings of 80, 70, 94, 70, and 82%, respectively. The lowest positive scores were obtained for the dimensions of non-punitive response to errors (the eighth dimension, with 12%) 12% and staffing (the ninth dimension, with 22%). In the Urmia study, the lowest positive scores were for the same two dimensions, which were 31 and 36%, respectively (12). Also, in Abdi et al.'s study, the first (frequency in reporting of events), eighth, and eleventh dimensions received positive scores of 12%, 18%, and 18%, respectively, and they were identified as the weakest dimensions of patient safety culture (13). Among other similar research efforts in other countries, in a study in the U.S, the eighth and12th. The usage should be consistent. Dimensions (hospital handoffs and transitions) obtained the lowest positive scores of with 44% and 45%, respectively (14). In a study in Turkey (16), the first and eighth dimensions had the lowest ratings of 15% and 24%, respectively. In studies in Italy (22), Taiwan, and Lebanon, the eighth and ninth dimensions had the lowest positive scores.

The results of this study suggest that, first, the hospitals we studied should develop non-punitive culture in their organizations that is conductive to safety improvements and, consequently, will lead to the promotion of service quality. Rather than blaming and punishing individuals when safety-related incidents occur, the culture should support efforts to conduct comprehensive assessments of the major factors that cause trouble and determine ways to eliminate or fix these factors. The second step toward achieving the goal of improving the patient safety culture in these hospitals is better distribution of staff and their working hours. As Table 1 shows, approximately 70% of staff members in this study worked more than 40 hours per week in the hospital, while, in many countries, hospital employees work less hours than this. For example, in a study conducted in Belgium, only 29% of employees worked more than 40 hours per week in the hospital (19). Given that the standard of work of medical practitioners, especially nurses (given that about 55% of the subjects studied were nurses) is 36 hours per week, it seems that the work hours for employees in the hospitals we studied far exceeded the ideal level. This could, of course, be due to the lack of healthcare personnel, especially nurses, in Iran's hospitals. The more hours that people are required to work, the more tired they become, and this can result in decreased concentration and accuracy decreases, making the possibility of their making errors increase. The next step is to create an open and free communication atmosphere in which errors and events can be reported.

The findings of different studies have shown that ineffective communication and existing failures and difficulties in communications are the main reasons for the occurrence of adverse events and preventable problems in healthcare (23). Given that good healthcare relies on inter-professional communication between existing groups and subcultures, the presence of an integrated culture seems to be the essential requirement for making open communications possible regardless of the different groups involved (24). Previous research has shown that, in addition to hierarchy, individual characteristics also are important to consider when developing effective communications between those who provide healthcare services (25). In addition, it must be understood that inter-professional relationships also can be influenced by various circumstances, including the genders of the people involved, the different responsibilities of staff members for providing patient care, and different backgrounds and roles of physicians and nurses (26).

5. Conclusion

The present study showed that hospitals affiliated with Islamic Azad University in Tehran do not meet a suitable condition of patient safety culture. Instead, it appeared that a punitive culture dominated the workplace. Also, issues relating to the number of employees, the distribution of the employees, work hours, and appropriate communication must be solved for a patient safety culture to be established. The relevant authorities must understand these issues and be committed to solving them in order to achieve the desired patient safety culture in Iran's hospitals. Solving them will require redesigning strategies that are focused on individual and organizational behavior changes. Finally, it is suggested that some studies be conducted in the area of staff training and in the area of investigating the relationship between patient safety and its associated clinical outcomes.

Conflict of Interest:
There is no conflict of interest to be declared.

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