Original Research Article

Hospital Patient Safety Culture in Developing Countries: A Comparative Study in Ilam City, Iran

Abstract

Aims: In this study, patient safety culture was assessed in four educational hospitals of Ilam city, Iran.

Study Design and Setting: This study was carried out in four educational hospitals (Imam Khomeini, Mustafa Khomeini, Taleghani and Kowsar hospitals) in Ilam city (Iran).

Study Duration: The study was conducted over 2014.

Methods: The data collection was conducted via the Iranian version of Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire. The questionnaire contains 42 items that evaluates 12 various dimensions of patient safety culture.

Results: The results showed that 47 % of the respondents had work experience between 1-5 years and 72 % of the studied individuals worked more than 40 hours per week in hospital. The mean positive answers score of the safety culture in this study was obtained 40 % that much lower than the benchmark (64 %). The highest and lowest percentages for the positive answers were attributed to teamwork within the departments (70 %) and non-punitive response to error (11 %), respectively.

Conclusion: In order to increase the patient safety culture in the hospitals, the number of professional staffs should be increased and a practical planning about this issue should be provided. Moreover, the hospitals management should support the staffs to report errors without fear of punishment.

Keywords: Hospital, Patient Safety Culture, Developing Countries.

1 Introduction

One of the most important issues in healthcare centers, especially in the treatment centers, is care quality or patient safety [1]. Various studies have reported that patient safety conditions particularly in developing countries are unsuitable and they have emphasized on the different procedures to improve it [2]. Many studies have also shown that the safety problems are resulted from deficiencies in the processes and work systems within the associated units [3]. Normally, it is believed that the safety problems are caused by inadvertent errors and violation from safety principles [4]. Therefore, the medical errors have been identified as one of the five common factors of death in the world [5]. World Health Organization (WHO) has estimated that tens millions of patients in the world every year are victims of injuries and deaths resulted from unsafely medical activities and cares [5]. In the United States, medical errors have led to 44,000 to 98,000 deaths in hospitals annually [6]. In England, undesirable events have occurred for 10 % of hospital admissions and in Australia, 16.6% of admissions have led to undesirable events [7]. Injuries and death resulted from medical errors have caused

significant costs for patients, treatment systems as well as society. It has been estimated that the costs of preventable medical errors in the United State are 17 to $ 29 million per year [8]. WHO, with emphasis on the importance of patient safety in healthcare and treatment units, established "international cooperation for patient safety" in 2004 [9]. As noted by the motto, WHO aimed to coordinate the international efforts, relating with patient safety, to reach the safer cares for patients [9]. Patient safety culture is one of the aspects of patient safety which has been widely considered [5]. Various studies concerning with health care fields have shown that safety patient culture plays a substantial role in establishing programs for patient safety within the associated organizations [10]. Institute of Medicine (IOM) expresses that the establishment of patient safety culture plans for staffs of health care settings is necessary to prevent the inadvertent and intentional errors, which may lead to damage patients [11]. The scientists believe that hospitals should developed healthcares quality and patient safety culture among their staffs along with the structural interventions [10]. Assessment of patient safety culture provides valuable information about various aspects of the safety culture to healthcare organizations [12]. Iran, with the population of 75 million in 2014, is one of the developing countries located in the Middle East. During this study, patient safety culture in Ilam city hospitals, a city in western Iran, was investigated and compared with other studies in developed countries.

2 Materials and methods

2.1 Study place

This study was carried out in four educational hospitals (Imam Khomeini, Mustafa Khomeini, Taleghani and Kowsar hospitals) in Ilam city in 2014. The overall capacity of these hospitals was 250 beds. Within the four hospitals, 23 wards contributed: six internal medicine wards, five intensive care wards, three surgical wards, three emergency departments, two pediatrics wards, two neurology wards and two psychiatry units. A total of 104 persons in different wards of the hospitals including physicians, nurses, midwives and paramedics (radiology and laboratory staffs) were selected through available sampling, depending on the unit size. Table 1 shows the characteristics of the respondents in the hospitals.

Table 1. Job characteristics of the participants.

Job	Frequency	Percent
Nurse	55	52.9
Physician	27	26.0
Lab	11	10.6
Radiology	7	6.7
Other	4	3.8

2.2 Data collection and analysis

In this study, data collection was conducted via the Iranian version of Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire which offered by AHRQ (Agency for Healthcare Research and Quality) in 2004 [13, 14]. This tool has been frequently used for assessment of employees' views about patient safety culture within various studies [12, 15-18]. It has been appropriately localized to the culture of Iran with confirmatory factor analysis (CFA) method [14]. The questionnaire contains 42 items that evaluates 12 various dimensions of patient safety culture [12, 19]. In this questionnaire, 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1) or usually to never was applied for obtaining the respondents' opinions. The answers of strongly agree, agree, often agree and always were considered as positive answers to positive questions and strongly disagree, disagree, rarely and never were regarded as positive answers to negative questions. After calculation of the positive answers for each item, the mean value was applied for the corresponding dimension. If the positive answers for each item are greater than 75 %, those items can be regarded as safety patient strength [11]. The items with the positive answers lower than 50 % should be considered as dimensions required improvement. Data analysis was performed by SPSS-16 (ANOVA and qualitative tests) and p-value less than 0.05 for each parameter was selected as significance level.

3 Results

Table 2 shows that the maximum participants were from emergency departments (22.1 %) and then operation rooms (21.2 %). The minimum replants were also from pediatrics (2.9 %) and women wards (3.8 %). As seen from Table 1, 52.9 % and 26 % of the participants were composed of nurses and physicians, respectively. Tables 3 and 4 show that 47 % of the respondents had work experience between 1-5 years and 72 % of the studied individuals worked more than 40 hours per week in hospital. Finally, more than 94% of the individuals expressed that they come into contact with patients. Table 5 shows that 71.2 % of individuals have not reported incidents during 12 recent months.

Table 2. Work wards properties of the replants.

Ward	Frequency	Percent
Internal	11	10.6
Surgery	22	21.2
Women	4	3.8
Pediatric	3	2.9
Nervous	7	6.7
ICU	16	15.4
Emergency	23	22.1

Lab	10	9.6
Radiology	8	7.7

Table 3. Work experience (year) of the replants.

experience (year)	Frequency	Percent
Less than 1	9	8.7
1-5	49	47.1
6-10	22	21.2
11-15	6	5.8
16-20	8	7.7
21 or more	10	9.6

Table 4. Work hours (hr per week) of the replants.

Work per week (hr)	Frequency	Percent
Less than 20	3	2.9
20-39	27	26.0
40-59	47	45.2
60-79	17	16.3
80-99	6	5.8
100 or more	4	3.8

Table 5. Incidents (per year) expressed by the replants.

Number of Incidents (per year)	Frequency	Percent
None	74	71.2
1-2	19	18.3
3-5	6	5.8
6-10	3	2.9
11-20	2	1.9
Total	104	100.0

On other hand, as presented in Table 6, 73 % of the respondents described that the status of patient safety in their hospitals was in good to excellent level. During the present study, the mean and percentage of positive answers for twelve dimensions of patient safety culture were compared to benchmark (Table 7). As seen, the percentage and mean of the positive answers were obtained 11-70 % and 40 %, respectively. The highest percentage for the positive answers was attributed to teamwork within the departments (70 %) and then

organizational learning-continuous improvement (56 %). The lowest percentage of the positive answers was also associated to staffs (19 %) and non-punitive response to error (11 %). Table 8 represents the strongest and weakest items relating with dimensions of patient safety culture. As can be seen, the third item (In this department, people treat each other with respect) of the first dimension (teamwork within departments) had the maximum positive response (81 %). The first and third items of non-punitive response to error dimension also had the minimum positive response (10 %). Table 9 shows that there were a significant relationship between work experience in the profession and total score of patient safety culture (p=0.003). So that, the highest score to patient safety culture was devoted to the employees with less than one year work experience.

Table 6. Patient safety grade expressed by the replants.

Patient safety grade	Frequency	Percent
Excellent	2	1.9
Very good	25	24.0
Good	49	47.1
Undesirable	16	15.4
Weak	12	11.5
Total	104	100.0

Table 7. Positive answer scores of dimensions of safety culture in the hospitals and Benchmark study.

Dimension	Number of questions	This study (%)	Benchmark (%)
Teamwork within units	4	70	81
Supervisor/manager expectations & actions promoting patient safety	4	40	76
Organizational learning – continuous improvement	3	56	73
Hospital management support for patient safety	3	44	72
Feedback and communication about error	3	43	67
Overall perception of patient safety	4	30	66
Frequency of events reported	3	39	66
Communication openness	3	37	62
Teamwork across hospital departments	4	44	61
Staffs	4	19	55
Hospital handoffs & transitions	4	49	47
Non-punitive response to error	3	11	44
Total & Mean	42	40	64

Table 8. Highest and lowest scores of patient safety culture based on the separate questions.

Dimension	Questionnaire Items	Percentage of positive responses	
		This study	Benchmark
Teamwork within departments	1- People support one another in this department.	74	86
	2- When a lot of work needs to be done quickly, we work together as a team to get the work done.	76	86
	3- In this department, people treat each other with respect.	81	80
	4- When one area in this department gets really busy, others help out.	51	71
Organizational learning – continuous improvement	1- We are actively doing things to improve patient safety.	78	84
	2- Mistakes have led to positive changes here.	31	64
	3- After we make changes to improve patient safety, we evaluate their effectiveness.	60	71
Staffs	1- We have enough staff to handle the workload.	24	54
	2- Staff in this department work longer hours than is best for patient care. (R)	12	52
	3- We use more agency/temporary staff than is best for patient care. (R)	25	66
	4- We work in "crisis mode," trying to do too much, too quickly. (R)	13	50
Non- punitive response to error	1- Staff feels like their mistakes are held against them. (R)	10	50
	2- When an event is reported, it feels like the person is being written up, not the problem. (R)	14	48
	3- Staff worry that mistakes they make are kept in their personnel file. (R)	10	35

(R): indicated on the negative aspect of the item.

Table 9. The statistical analysis between total score of patient safety culture with work experience.

Grade	Work experience of the replants (year)	Mean	Std. Deviation	F	p
Total score of patient safety culture	Less than 1	153.11	20.41		
	1-5	131.02	14.50		
	6-10	138.00	14.59		
	11-15	129.33	8.71		
	16-20	139.50	17.03		
	21 or more	138.60	12.07	3.95	0.003
Total	-	135.69	15.88		

4 Discussion and conclusion

The assessment of safety culture causes that the organizations realize their weaknesses and strengths of their safety conditions. Moreover, the organizations can compare their safety culture scores with other organizations [15]. During this study, HSOPSC tool was used to assess the patient safety culture in Ilam hospitals. As seen

from the results, 72 % of the individuals worked more than 40 hours per week. Hellinges et al. study (2007) in Belgium hospitals showed that only 29 % of the employees worked more than 40 hours a week [20]. It seems that the number of working hours of the employees in our study was more than ideal level. This may be resulted from the lack of the treatment workforces especially nurses in our study. The employees' burnout and exhaustion in this study, due to the lack of the workforces, can lead to reduce concentration of the individuals and subsequently it can threat the patients' safety [21]. The results showed that 9 % of the respondents had less than one-year of work experience, which only 2 % of them worked at their professional career. This may be due to the lack of workforces in some professions and employing individuals with non-related professions. The findings (Table 5) also indicated that 71.2 % of the participants had no reported errors during one past year. El-jardali et al. (2010) and Bodure and Filiz (2010) presented that about 60 % and 84 % of the participants had no reported errors during previous year, respectively [5, 15]. This value in USA hospitals was found to be 56 % [16]. One of the most important reasons of the lower reported errors by the individuals in various studies can be due to the fear of consequences from reporting errors [22]. If the employees don't report the errors, due to their fear of blaming, its consequence will go to patient, hospital as well as society. The culture of error statement should be developed until the individuals report the errors without the fear of blaming, shame and criticism [23]. The results (Table 6) also showed that only 25 % of the respondents described the safety degree of the hospitals as very good to excellent, while this value in Ballangrud et al. (2012) and El-jardali et al. (2010) studies was about 75 % and 70 %, respectively [15, 24]. Hospital management plays a substantial role in increasing the patient safety culture via employees as key factors of safety promotion [25]. The lower value of the safety degree in our study can be originated from the weakness of the hospitals management. As seen from Table 7, the overall mean of positive answers scores of the employees about patient safety culture was 40 % in our study. This value in an Iranian study conducted by Moussavi et al. (2013) in Tehran hospitals was 35 % [21]. The mean value of positive answers of patient safety culture in various studies from other countries such as U.S hospitals in the united states, Agnew et al. (2013) in Scotland, Ballangrud et al. (2012) in Norway, Wang et al (2014) in China and Chen & Lee (2010) in Taiwan was 64, 50, 55, 57, and 64 %, respectively [11, 12, 16, 24, 26]. The results (Table 7) of 12 dimensions of patient safety culture such as other studies showed that the highest percent of positive answer (70 %) was attributed to the first dimension, team working within the units [15, 16, 21, 24, 26, 27]. Table 8 shows that 81 % of the employees in different units treat each other respectfully and 76 % of the individuals work together as a team in dealing with over load working. On the other hand, the lowest percent of positive answer (11 %) was assigned to non-punitive response to errors (Table 7). Moussavi et al. (2013) and Sorra et al. (2014) also indicated that the weakest dimension was allocated to non-punitive

response to errors as 12 % and 47 %, respectively [16, 21]. About 90 % of the staffs (Table not presented) thought that their mistakes are held against them and they were concerned about registering the mistakes in their personnel files. The reason of this fact may be resulted from lack of confidence towards the management system, presence of punitive regulations and also the absence of supportive behaviors from hospital authorities in dealing with employees' errors. The dimension of staffs-related issues after non-punitive response to error had the lowest percent of positive answer (19 %). The similar results have been reported by various studies [11, 12, 16, 17, 21]. About 76 % of the employees believed that there were not enough workforces to serve the patients. The findings related to employees working hours, as shown in Table 4, also confirmed this fact. Sanders and Cook (2009) illustrated that major disasters occurred in hospitals with inadequate staffs because the staffs had to overwork in the organizations [28]. The staffs in these hospitals may also suffer from stress and insomnia which can lead to some failures and subsequently effective errors in their performance [29]. As listed in Table 7, the mean of patient safety culture scores for all the dimensions except for hospital handoff & transitions in the present study were less than Benchmark. This may be due to the cultural differences and also lack of interest of the staffs to express the negative opinions about their work place. It seems that the current hospitals require practical and educational programs concerned to patient safety culture at both the staffs and management levels. In addition, hospital management can support the patient safety programs through the staffs training, providing the professional workforce and delegation of authorities to employees to identify and modify the risks [30]. By recognizing weak points of patient safety culture issues and providing a practical planning, the hospitals can promote the safety culture [21]. The present study showed that the Ilam hospitals had unsuitable status in terms of patient safety culture. The presence of punitive culture in workplace, lack of professional workforce, longer working hours and lack of patient safety programs can be as the main factors of unsuitable safety conditions in the studied hospitals. It is suggested that the patient safety culture should be modified in the studied hospitals. In order to increase the patient safety culture in the hospitals, the number of professional staffs should be increased and a practical planning about this issue should be provided. Moreover, the hospitals management should support and encourage the staffs to report the errors without fear of punishment.

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