

A Comparative Study on Effective Factors in Patient Safety Culture from the Nursing Staff Points of View

Khalil Alimohammadzadeh^{1,*}, Sahar Esmaili Joladi², Maedeh Olya^{3,5}, Abbasali Ghaiyoomi⁴,
Hamid Zaferani Arani^{3,5}

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ABSTRACT

Introduction: Patient safety and its requirements fulfillment are today one of the useful valuation indicators in healthcare organizations. Thus, patient safety culture and its promotion are referred to as one of the most important issues raised in the country. The present study aims to examine the effective factors (personal and organizational) in patient safety culture from the point of view of nursing staff in Bahman and Parsian private hospitals.

Method: The study has an analytical cross-sectional design and is an applied research. HSOPSC (with Cronbach's alpha coefficient was 0.82) and researcher-devised questionnaires (with Cronbach's Alpha equal to 0.912) were the only data collection tools. Statistical population includes nursing staff of Bahman and Parsian private hospitals in north-west Tehran. A sample consisting of 150 nurse shift supervisors and head nurses was selected from the population. Necessary data for completing questionnaires were collected by interview. Data were analyzed using SPSS16 software. Given the levels of measurement for the variables, valid measures of central tendency (mean, standard deviation), correlation tests, Chi-square, t- test, and ANOVA were used.

Results: The findings showed us that such factors as organizational commitment, error reporting system, management support, reward system, and employee empowerment equipment distribution have important roles in patient safety. Their P-values are reported <0.001 for all of them. Patient safety was not significantly associated with age (P=0.964), educational level (P=0.154), and work experience (P=0.888) There is no low awareness about safety culture in any hospital and their mean awareness about patient safety culture was equal to 3.13 ± 0.478 and 3.68 ± 0.587 in Parsian and Bahman hospitals, respectively (P<0.001).

Conclusion: Error reporting system and organizational commitment respectively have the most and the least effect on promoting patient safety culture. Empowerment heightens the awareness of employees, enhances their performance and productivity, reduces errors caused by lack of awareness, and improves patient safety. Reward system and organizational commitment had the least effect.

Keywords: Patient, Safety culture, Hospital, Nurse

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Introduction

Patient safety and its requirements fulfillment are today one of the useful valuation indicators in healthcare organizations. Creating a safe, secure and peaceful environment in hospitals is of great importance and includes special requirements. One of the criteria for medical organizations and hospitals' rating is to give proper attention to safety culture and satisfy necessary conditions under which patient safety culture can

be promoted. Medical and health organizations are considered one of the major healthcare organizations in each country, whose function is to provide and improve people's health. Hospitals are primary organizations in healthcare support system and need to have a positive role in providing effective and efficient health care (1).

Britain's National Health System (NHS) has a pretty good idea that quality is to offer the true services to the right people by an effective method at a good time (2).

The quality of health care is one of the central issues in the health sector, especially in care centers. It contains

¹ Department of Health Services Management, Tehran North Branch, Islamic Azad University, Tehran, Iran

² Department of health care management, Islamic Azad University, Tehran North Branch, Tehran, Iran

³ Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran

⁴ Islamic Azad University, Tehran North Branch, Tehran, Iran

⁵ Cancer Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran

* **Corresponding Author:** KH Alimohammadzadeh, Tehran North Branch, Islamic Azad University, Health Economics Policy Research Center, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran, Email: dr_khalil_amz@yahoo.com.

various elements and patient safety is its vital element (3). Patient safety emphasizes the importance of preventing and reducing the occurrence of adverse events during patient care activities (4). Safety culture is a culture in which employees have a stable and active knowledge about mistakes which may be made (1). It is defined as group-level attitudes towards values and beliefs regarding safety and safe behavior common among the members of the group or organization (5).

Safety culture issue in hospitals can be addressed at two macro and micro levels. The former supports the measurement of safety culture at the hospital and organization level and examines the extent to which hospitals create, maintain and promote the patient safety culture. The latter measures the safety culture at the personal level and examines the extent to which health care employees including doctors and nurses are familiar with safety culture and do their tasks and activities based on it. The Institute of Medicine report entitled, 'To Err Is Human' in 2000 stresses the importance of patient safety as the key aspect of health care services quality and states that healthcare organizations need to bring patient safety culture into focus as one of their primary purposes and make it popular among their employees. According to estimates by World Health Organization, tens of millions of people are dying or becoming disabled from medical errors and unsafe medical care every year (6). To record and analyze critical incidents is of paramount importance for any organization dedicated to improving patient safety. Therefore, many hospitals have implemented a critical incident reporting system (7).

It is difficult for nurses to honor the Nightingale Pledge with the oath 'first do no harm'. Facts about American nations and states show that registered nurses are responsible for deaths and injuries rather than other health care professionals since they spend more time with patients. Therefore, they are the first group whose workplace errors need to be reduced (8). Study on nursing homes in the United States of America showed that 40 percent of nurses referred to error reporting system as self-blame factor. As a result, making the effort to improve patient safety is hard more than ever (9). These errors not only cause people so much pain and discomfort, but also incur extra costs in the health system. Experts believe that patient safety culture along with various structural interventions must be created among employees to improve quality and patient safety (10).

In health care organizations, promoting the patient safety culture means reporting that patient has suffered no damage rather than no error has occurred (10). For example, the results of studies indicate that -reporting systems- could be more effective if the criteria for what counts as an incident were explicit, they were owned and led by clinical teams rather than centralized hospital departments, and they were embedded within organizations as part of wider safety programs (11, 12).

In Iran, patient safety has been of high interest to researchers and its role in the health care system has been assessed in recent years (13, 14). Several studies have evaluated patient safety culture and even attitudes towards patient

safety in different hospitals, but no study has explored the factors affecting patient safety improvement from the point of view of nursing staff. This study addressed the following research questions based on Terry, Taden and Fleming theory.

1. Is the most effect on promoting patient safety culture associated with personal or organizational factors?
2. Which aspect of personal and organizational factors has the most effect on promoting patient safety culture?

It should be pointed out that most studies have been conducted in public and teaching hospitals. Accordingly, the present study aimed to examine the effective factors (personal and organizational) in patient safety culture from the point of view of nursing staff in Bahman and Parsian private hospitals.

Method

Design of the study

The study had an analytical cross-sectional design and was an applied research. It was conducted in Tehran Parsian and Bahman private hospitals respectively having 145 and 169 beds available in 2014.

Statistical population included nurse shift supervisors and head nurses of nursing staff in two hospitals. Nursing staff of Parsian and Bahman hospitals respectively had 400 and 314 members, out of whom 75 and 60 were head nurses and nurse shift supervisors. A total of 135 head nurses and nurse shift supervisors were working in the hospitals. Seventy five questionnaires were administered to each hospital. Finally, 70 and 50 questionnaires were received from Parsian and Bahman hospitals, respectively.

Questionnaires

Hospital Survey on Patient Safety Culture questionnaire was designed by the American Research and Healthcare Quality Agency in 2004 with attested reliability and validity (3, 4, 15-21). HSOPSC questionnaire has been used by some previous studies to assess the views of hospital workers (22). The study of Moghri and his colleagues has confirmed the validity of it and reliability in Iran with Cronbach's alpha coefficient of 0.82 (23), and a questionnaire devised by researchers with Cronbach's Alpha equal to 0.912 were used to collect the data.

The questionnaire consisted of three parts. Part 1 included demographic information (gender, age, education level, work experience, and marital status). Part 2 contained 42 questions, demonstrating the importance of patient safety aspects in 12 categories of the frequency of event reporting, general understanding of patient safety, manager expectations and actions promoting patient safety, organizational learning, teamwork within organizational boundaries, open communication channels, error feedback, non-punitive response to error, issues related to employees, management support for patient safety, teamwork across organizational boundaries, and information exchange.

Part 3 contained 20 questions, examining effective factors in 5 categories of organizational commitment, management support, reward system, error reporting system and employee empowerment. Ratings were

completed on a five-point Likert scale ranging from never to always.

Data collection

Totally, 150 questionnaires were administered to head nurses. At first, any details about patient safety culture and how to fill in the questionnaire were given. Before administration of the questionnaires, informed consent were taken from the participants.

Effective factors in patient safety culture were evaluated by the results obtained from nursing staff, i.e. nurses, nursing assistant, midwives and operating room personnel.

Data analysis

Statistical analyses were performed using SPSS 16 software. Research hypotheses were tested by correlation coefficient (r pearson) and t-test. P-value for two-tailed test was set at 0.05.

Results

Seventy five questionnaires were administered to each hospital and finally 70 and 50 questionnaires were received from Parsian and Bahman hospitals, respectively. The majority of respondents were female (67.5%-81). Many of the participants consisted of nurse shift supervisors (70.83%-85). Mean age of the sample was 34.69 ± 7.14 . Most of the respondents were in the middle age group, while the majority of them had low and less than 10 years of work experience in both hospitals. Mean work experiences were 10.22 ± 5.5 and 9.89 ± 6.25 years in Parsian and Bahman hospitals, respectively. Other demographic information can be observed in Table 1.

Table 1. Demographic information in Bahman and Parsian hospitals

Variables		Bahman		Parsian	
		n	%	n	%
Safety culture		31	62	51	72.9
Age	29-20	8	16	15	21.4
	39-30	29	58	32	45.7
	>40	10	20	21	30
Work experience	missing	3	6	2	2.9
	<10	33	59.9	38	54.3
	10-20	8	13	31	44.3
	20<	2	23.6	-	-
Marital Status	missing	9	3	1	1.4
	Single	23	46	19	25.1
	Married	24	48	49	70
	missing	3	6	2	2.9

There was no low awareness about safety culture in any of the hospitals and the level of nurses awareness was middle (63.6%-68) and very high (36.4%-39). Mean awareness about patient safety culture was 59.19 ± 3.37 . Parsian and Bahman hospitals had a mean awareness equal to 3.13 and 3.68, respectively. Table 2 compares effective factors in both hospitals. P-value calculated for all factors other than organizational commitment ($P=0.541$) was less

than 0.05. Thus, the only significant difference was seen in organizational commitment. Employee empowerment had the largest deviation from the mean. As shown in the Table, mean employee empowerment of Bahman hospital (3.51 ± 1.095) was higher than that of Parsian hospital (2.13 ± 0.945).

In Parsian and Bahman hospitals, 47-67.1% and 40-80% of nursing staff rejected the effect of the luck on preventing unexpected disasters and serious risks. Also, no one referred to chance as a constant factor in preventing serious risks. However, 5-7.1% of the nursing staff in Parsian hospital believed that luck as an inhibitor could always or often meet serious threats to patient safety.

In Bahman hospital, 11-22% of the nursing staff believed that their mistakes cause reasonable variations as much as their awareness. This result was very similar to that obtained from Parsian hospital so that 21-30% and 22-31.4% of the subjects respectively sometimes and often described it as a factor showing reasonable variations. This study examined the effect of factors such as age, organizational commitment, work experience, management support, reporting system, employee empowerment, and equipment distribution on patient safety culture. Considering P-value and Pearson correlation coefficient, all the above-mentioned factors other than age and work experience were effective in patient safety culture. Marriage ($P\text{-value}=0.575$) was also reported as an ineffective factor in safety culture. Table 3 represents the results of the tests.

Discussion

According to the result and considering P-value, it is concluded that personal factors such as age, work

experience have no effect on patient safety culture and organizational commitment, management support, employee empowerment, equipment distribution and error reporting system are effective factors. Error reporting system can cause a great deal of reasonable variations since the majority of subjects describe their mistakes as a factor showing reasonable variations. It causes the others to increase their awareness by learning from mistakes.

Patient safety can be promoted in this way, provided the medical staff has no fear of punishment for reporting error. On the other hand, management support and employee empowerment can be used to provide motivation and encouragement for performing the duties better. Standard equipment provides nursing staff with intensive support and saves time. Therefore, true services are offered by organizational system and medical staff at optimal time.

Conclusion

The following conclusions can be drawn from this study. Organizational factors have the greatest effect on promoting patient safety culture. Error reporting system, management support and employee empowerment have priority over other aspects of organizational factors. Reporting errors with no fear of punishment and quite sure of management support causes employees admit their mistakes. Also, empowerment heightens the awareness of

Table 2. Comparison the means between study variables of two hospitals

	Bahman	Parsian	
Variables	mean ± SD	mean ± SD	P value
Safety culture	3.68 ±0.587	3.14±0.4786	<0.001
Organizational commitment	2.8 ±0.538	2.9 ±0.9473	0.541
Management support	3.48 ±0.113	2.38 ±0.8982	<0.001
Employee empowerment	3.51 ±1.09	2.13 ±0.9457	<0.001
Equipment distribution	3.15 ±1.00	2.36 ±0.9054	0.045
Error reporting	3.68 ±0.587	3.13 ± 0.4786	<0.001

Table 3. Correlation and P-value between patient safety and study variables

variables	Pearson coefficient	P-value
Age	0.004	0.964
Education level	0.133	0.154
Organizational commitment	0.231	0.011
Work experience	-0.013	0.888
Management support	0.607	<0.001
Error reporting	0.645	<0.001
Employee empowerment	0.550	<0.001
Equipment distribution	0.376	<0.001

No association between personal factors and patient safety culture can be attributed to the number of returned questionnaires because no response makes personal factors ineffective. This study showed that awareness about patient safety culture was at the middle and very high level. Alahmadi et al. reported a low level of awareness about patient safety due to the large sample size. They studied patient safety culture in 13 hospitals (4). The results of the present study have a good agreement with those of Izadi et al. (22) and several other similar studies (23-25). Also, it was observed that a comprehensive incident learning system can detect many parts for improvement and is associated with significant and sustained improvements in patient safety culture. This is identified in another study, too (26).

This study was faced with main limitations due to the lack of suitable literature for Iranian community on safety culture. Given that the majority of resources and documents regarding the present study is specific to other communities and it is impossible to achieve a great consistency between those and current situation of safety culture in Iran, there is an urgent need to conduct more studies on patient safety culture in Iran so that necessary resources for the study of patient safety culture and its promotion are provided.

employees, enhances their performance and productivity, reduces errors caused by lack of awareness, and improves patient safety. In-service training can be so effective for promotion of the staff’s awareness and skills that can decrease the errors. Reward system and organizational commitment have the least effect. Ethical commitments result in performing humanitarian duties without any expectation.

Abbreviations

Hospital Survey on Patient Safety Culture (HSOPSC)
 National Health System (NHS)
 analysis of variance (ANOVA)

Ethical considerations

In this study, all the ethical issues including plagiarism cases, respondent confidentiality, obtaining permission from the hospital to administer the questionnaires, respect for scientific truth and integrity, full respondents satisfaction from completing questionnaires were considered by researchers.

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Conflict of Interest

None declared.

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