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Patient Safety Culture as Perceived by Nurses in a Joint Commission International Accredited Hospital in Turkey and its Comparison with Agency for Healthcare Research and Quality Data

Kenan Gözlü[1]* (PhD Candidate); Sıdıka Kaya[2] (PhD)

[1.] Ministry of Health, Public Health Agency of Turkey.
[2.] Hacettepe University Faculty of Economics and Administrative Sciences, Department of Health Care Management.

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ABSTRACT

Introduction: The first step to provide patient safety and reduce medical errors is to evaluate patient safety culture. This study aimed to evaluate patient safety culture as perceived by nurses in a Joint Commission International (JCI) accredited hospital in Turkey and compare it with Agency for Healthcare Research and Quality (AHRQ) data.

Materials and Methods: This cross-sectional study was conducted on 70 nurses working in the clinics of a private hospital with JCI accreditation certificate in Ankara, Turkey. For the purpose of data collection, ‘‘Hospital Survey on Patient Safety Culture’’ was used. Data were analyzed using SPSS Version $_{15}$. The rates of positive responses were calculated and compared with AHRQ data. The mean of 12 dimensions of the survey were calculated and compared with independent variables, using t-test and Kruskal Wallis test.

Results: According to the results, ‘‘teamwork within units’’ and ‘‘staffing’’ were found to be the dimensions with the highest and lowest positive response rates, respectively. Furthermore, 78% of the nurses graded patient safety as excellent or very good and 53% of them did not report any events within the last 12 months.

Conclusion: This study demonstrated that ‘‘staffing’’, ‘‘non-punitive response to errors’’, ‘‘supervisor/manager expectations & actions promoting patient safety’’, ‘‘communication openness’’, and ‘‘teamwork across units’’ are the areas that need to be improved in terms of patient safety culture. Health services can be provided in a safer way in the future by conducting further studies on patient safety culture and sharing knowledge between countries.

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Introduction

Today, health care services are becoming increasingly complicated. In health care institutions, health care professionals have to make many clinical decisions and judgements under pressure in an ever-changing environment. This situation can lead to errors or mistakes in clinical decisions and practices, which in turn causes patient harm during a clinical procedure. Errors during the health care process may cause serious injuries and sometimes deaths of the patients (1). Regarding this, it is essential to develop a patient safety culture through which medical errors are researched and solved. Furthermore, the patient safety culture should be placed among important components of the corporate culture in order to prevent patient injuries and unwanted events during the health care processes.

Corporate culture which results from the unique characteristics of a corporation is defined as deep-seated beliefs and values shared strongly by the personnel of that corporation (2). Safety culture is one of the subsections of corporate culture (3), which can be briefly defined as doing the right thing even when no one is watching (4).

Safety culture is a culture in which all personnel of an organization are constantly and actively aware of the potential possibility of making mistake (5). Safety culture is considered as an important strategy for correcting the common shortcomings in patient safety

***Corresponding Author:** Kenan Gözlü, Ministry of Health, Public Health Agency of Turkey. Email: kenann@hacettepe.edu.tr

(6). The importance of a strong safety culture in terms of improving patient safety in health care has been underlined for more than ten years (7). According to a review study conducted by the Health Foundation (8), many studies reported a positive relationship between the patient safety culture and the patient and personnel outcomes.

Patient safety was defined by the World Health Organization as a patient's being free of potential or unnecessary harm related to health care and it is an issue that increasingly interests global health care systems (9). Furthermore, patient safety culture is the product of values, attitudes, perceptions, abilities, and behavior patterns belonging to an individual or group, which determine a health institution's style and competency in patient safety management and its commitments in this area (10). Patient safety culture has seven sub-cultures including leadership, teamwork, evidence-based care, communication, learning, just, and patient-centered care (11).

Nurses are the hospital's largest workforce; therefore, the organizational profitability may be associated with human resource decisions, which may impact patient safety (12). Nurses are in a key position to improve the quality of health care through patient safety interventions and strategies. The most critical contribution of nursing to patient safety, in any setting, is the ability to coordinate and integrate the multiple aspects of quality within the care, directly provided by nursing, and across the care delivered by others in the setting (13).

The responsibilities regarding the development of a patient safety culture does not only fall upon the leaders of institutions. It is necessary to clarify the appropriate attitudes or behaviors for the patient safety at the corporate level and the personnel should contribute to this process. Accreditation is one of the processes making patient safety a part of corporate culture with full participation of the personnel under the leadership of the senior management.

In a review study on the benefits of accreditation conducted by Greenfield and Braithwaite (14), accreditation was reported to exert important changes in six areas of the accredited hospitals including management, medical staff organization, review systems, organization of nursing services, physical facilities, safety, hospital role definitions, and planning. Furthermore, nursing organization, physical facility, and safety were the areas mostly affected by accreditation.

The foundations of accreditation in Turkey were laid for the first time with the quality of health care evaluations in 2005 and service standards of evaluations were determined. These standards were developed in number and structure in time and they were put into practice as four different versions. The standards were restructured according to four basic principles and ten objectives regarding accreditation in 2013 and ''Accreditation Standards in Health'' was given its final shape within its fifth version (15). Till February 2016, only thirty four hospitals continued to comply with the accreditation standards in Turkey (16).

This study aimed to evaluate the perception of nurses working in the clinics of a hospital with the accreditation certificate regarding the patient safety culture.

Materials and Methods

This cross-sectional study was conducted in a private hospital with the JCI accreditation certificate in Ankara, Turkey. The study population was comprised of the nurses working in the hospital clinics. Data collection was not performed through selecting samples. Rather, the department of human resources in the hospital distributed the forms among the nurses and then collected them. Following the confidentiality principles of the hospital, the tool did not contain personal information.

Data Collection Tool

For the purpose of data collection, ''Hospital Survey on Patient Safety Culture'' instrument developed by the Agency for Healthcare Research and Quality (AHRQ) in USA in 2004 was utilized. This survey is generally used to evaluate the patient safety culture of a hospital or a unit in the hospital. This survey is graded on a 5-point Likert scale (1=strongly disagree, 5= strongly agree), which contains 42 items grouped into 12 dimensions. The last part of the survey includes two questions that ask respondents to provide an overall grade on patient safety for their work area/unit and to indicate the number of events reported within the last 12 months (17). The survey was translated into Turkish by Filiz who reported Cronbach's alpha to be 0.86 for 42 items (18).

Data collection

After informing the chief medical officer and the department of human resources about the concepts used in the survey, purpose of applying the survey, and confidentiality of the data, they cooperated in the process of data collection. It was not possible for some of the nurses to answer the survey due to reasons like being on leave or resigning, etc., during the period when the survey was applied. Survey forms were distributed to the nurses during March 1st-July 1st of 2011.

Data Analysis

After the surveys were collected, the data were analyzed using SPSS. Answers such as ''Agree'', ''Strongly Agree'', ''Always'', and ''Most of the time'' were considered as positive responses; besides, the negative items were reverse coded. The scores of the 12 dimensions were calculated after assessing mean of the items. The dimension scores were analyzed with Shapiro-Wilk test to check their normality of distribution. Subsequently, the 12 dimensions were investigated separately in terms of 4 independent

variables (working time in the hospital, working time in the unit, working time in the job, weekly working time). Shapiro-Wilk test showed that dimension scores distributed normally only in weekly working time (P>0.05).

Evaluation of differences between 12 dimensions in terms of the independent variables of working time in the hospital, working time in the unit, and working time in the job was performed by means of Kruskal-Wallis test, as the number of groups was larger than two and the dimension scores were not normally distributed. On the other hand, independent samples t-test was used to investigate the differences between groups regarding weekly working time, since the participants were divided into two groups and the dimension scores were normally distributed regarding this independent variable. Also, the items forming the survey were evaluated separately according to the independent variables, using Fisher's exact test and Chi-square test which are used in the analysis of multi-span tables.

Results

Occupational characteristics of the nurses

Seventy nurses working in the hospital clinics participated in this study (return rate:75%). All of these participants were female who reported having direct interaction and contact with the patients. Occupational characteristics of these nurses are illustrated in Table 1.

Table1: Occupational characteristics of the nurses

Characteristics		Number	Percent
Working time in the hospital	Less than 1 year	19	27
	1 to 5 years	25	36
	6 to 10 years	17	24
	11 to 15 years	6	9
	16 to 20 years	2	3
	21 years or more	1	1
Working time in the unit	Less than 1year	25	36
	1 to 5 years	26	37
	6 to 10 years	12	17
	11 years and more	7	10
Working time in the job	Less than 1year	5	7
	1 to 5 years	25	36
	6 to 10 years	20	29
	11 to 15 years	10	14
	16 to 20 years	5	7
	21 years and more	5	7
Weekly working time	40 to 59 hours	50	71
	60 to 79 hours	20	29

As the results demonstrated, the positive response rates varied between 1-84% for the 42 items comprising the dimensions of the survey. The item ''People support one another in this unit'' had the highest positive response rate (84%), whereas the item ''Staff in this unit work longer hours than is best for patient care'' had the lowest positive response rate (1%). However, the rate of positive answers regarding the 12 patient safety culture dimensions ranged between 22% and 78% (Table 2).

Table2: Positive response rates regarding patient safety culture dimensions

Dimensio	AHRQ*	SH**
1. Teamwork Within Units	80	78
A1. People support one another in this unit.	86	84
A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.	86	76
A4. In this unit, people treat each other with respect.	78	79
A11. When one area in this unit gets really busy, others help out.	69	72
2. Supervisor/Manager Expectations & Actions Promoting Patient Safety	75	54
B1. My supervisor/manager says a good word when he/she sees a job done according to the established patient safety procedures	73	49
B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.	77	63
B3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means	74	29
B4. My supervisor/manager overlooks patient safety problems that happen over and over.***	76	74
3. Organizational Learning – Continuous Improvement	72	63
A6. We are actively doing things to improve patient safety.	84	61
A9. Mistakes have led to positive changes here.	64	53
A13. After we make changes to improve patient safety, we evaluate their effectiveness.	69	74
4. Management Support for Patient Safety	72	69
F1. Hospital management provides a work climate that promotes patient safety.	81	79
F8. The actions of hospital management show that patient safety is a top priority.	75	64
F9. Hospital management seems interested in patient safety only after an adverse event happens.***	61	63
5. Overall Perceptions of Patient Safety	66	75
A10. It is just by chance that more serious mistakes don't happen around here.***	62	79
A15. Patient safety is never sacrificed to get more work done.	65	79
A17. We have patient safety problems in this unit.***	65	71
A18. Our procedures and systems are good at preventing errors from happening.	72	70
6. Feedback & Communication About Error	64	69
C1. We are given feedback about changes put into place based on event reports.	56	51
C3. We are informed about errors that happen in this unit.	65	80
C5. In this unit, we discuss ways to prevent errors from happening again.	71	77
7. Frequency of Events Reported	63	69
D1. When a mistake is made, but is *caught and corrected before affecting the patient*, how often is this reported?	56	66
D2. When a mistake is made, but has *no potential to harm the patient*, how often is this reported?	59	60
D3. When a mistake is made that *could harm the patient*, but does not, how often is this reported?	74	80
8. Communication Openness	62	55
C2. Staff will freely speak up if they see something that may negatively affect patient care.	76	80
C4. Staff feel free to question the decisions or actions of those with more authority.	47	31
C6. Staff are afraid to ask questions when something does not seem right.***	63	54
9. Teamwork Across Units	58	57
F2. Hospital units do not coordinate well with each other.***	46	47
F4. There is good cooperation among hospital units that need to work together.	59	71
F6. It is often unpleasant to work with staff from other hospital units.***	59	33
F10. Hospital units work well together to provide the best care for patients.	68	76
10.Staffing	57	22
A2. We have enough staff to handle the workload.	56	13
A5. Staff in this unit work longer hours than is best for patient care.***	53	1
A7. We use more agency/temporary staff than is best for patient care.***	67	54
A14. We work in ''crisis mode'' trying to do too much, too quickly.***	50	19

11. Handoffs &Transitions	45	70
F3. Things "fall between the cracks" when transferring patients from one unit to	41	67
F5. Important patient care information is often lost during shift changes.***	50	80
F7. Problems often occur in the exchange of information across hospital units.***	43	54
F11. Shift changes are problematic for patients in this hospital.***	45	77
12. Non-punitive Response to Errors	44	33
A8. Staff feel like their mistakes are held against them.***	50	31
A12. When an event is reported, it feels like the person is being written up, not the	46	36
A16. Staff worry that mistakes they make are kept in their personnel file.***	35	33

* Agency for Healthcare Research and Quality 2011 User Comparative Database Report data (20).
** Study Hospital: Data from a private hospital with Joint Commission International accreditation certificate in Turkey.
***Reverse item

The dimension with the lowest positive response rate was ''Staffing'' (22%), while the highest positive response rate belonged to ''Teamwork within units'' (78%). Average positive response rate of the dimensions was 60%; however, the response rates of five dimensions were below the average; these dimensions included ''Staffing'', ''Non-punitive response to errors'', ''Supervisor/manager expectations & actions promoting patient safety'', ''Communication openness'', and ''Teamwork across units.'' The results did not indicate any statistically significant difference in the 12 patient safety culture dimensions in terms of working time in the hospital, working time in the unit, working time in the job, and weekly working time (P>0.05).

AHRQ organization published the Hospital Survey on Patient Safety Culture in 2004 to help to evaluate the safety culture in hospitals. Subsequently, in 2006, this organization financed the development of a comparative database as a response to the requests from the hospitals engaged in comparing their own safety culture survey results with those of other hospitals. This database includes the data coming from the hospitals participating in the research voluntarily, which serves as an important resource for the hospitals in terms of supporting patient safety culture. These comparative database reports were prepared during 2007-2014 (19).

Considering the reports published by AHRQ, it is realized that the people filling the Hospital Survey on Patient Safety Culture are nurses (the highest number), doctors, people working in hospital administration, technicians, therapists, dietitians, pharmacists, and other staff contributing directly or indirectly to the health service provision.

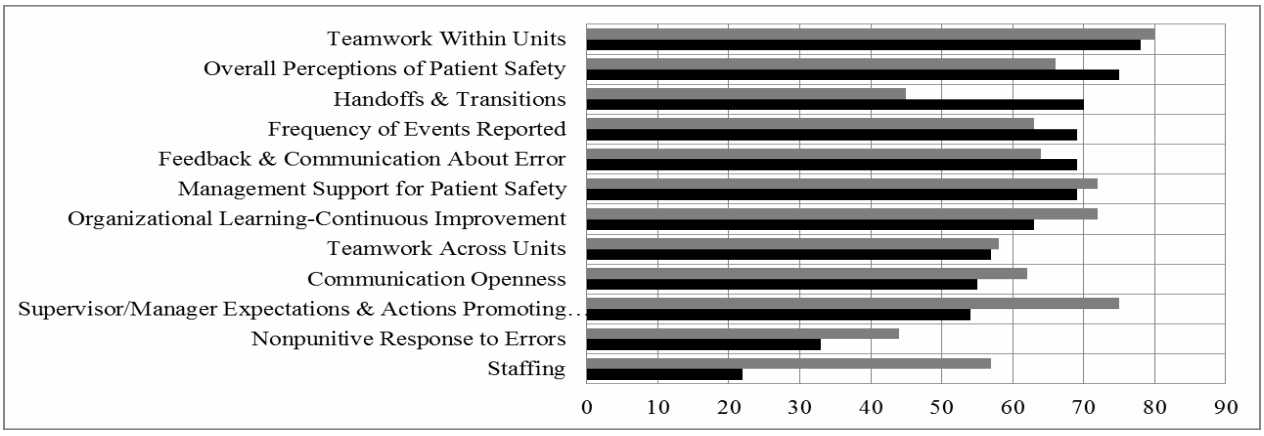

Figure 1: Positive response rates of the patient safety culture dimensions.

- Study Hospital: Data from a private hospital with Joint Commission International accreditation certificate in Turkey.
- Agency for Healthcare Research and Quality 2011 User Comparative Database Report data (20).

According to AHRQ's research in 2011, the rates of the positive responses for the items in patient safety culture varied between 35% and 86%. The results demonstrated that the highest rate of positive response belonged to ''People support one another in this unit'' (86%) and ''When a lot of work needs to be done quickly, we work together as a team to get the work done'' (86%). Furthermore, the item ''Staff worry that mistakes they make are kept in their personnel file'' showed the lowest rate of positive response (35%).

The rates of positive responses ranged between 44% and 80% for 12 patient safety culture dimensions. The highest positive response rate belonged to ‘‘Teamwork within units’’ (80%). The average positive response rate for these 12 dimensions was 63%. Figure1 displays the rates of positive responses for the patient safety culture dimensions regarding the current study and the AHRQ study in 2011.

Regarding the perceptions of the nurses about the patient safety grade in their working area/unit, the results of the present study demonstrated that 78% of the nurses considered patient safety level to be excellent or very good. Moreover, the nurses’ perceptions regarding the grade of patient safety was evaluated separately according to four independent variables and no statistically significant difference was found between these variables (P>0.05). Similarly, in the study of AHRQ in 2011, 75% of the participants considered the grade of patient safety in their working area/unit to be excellent or very good (Figure 2).

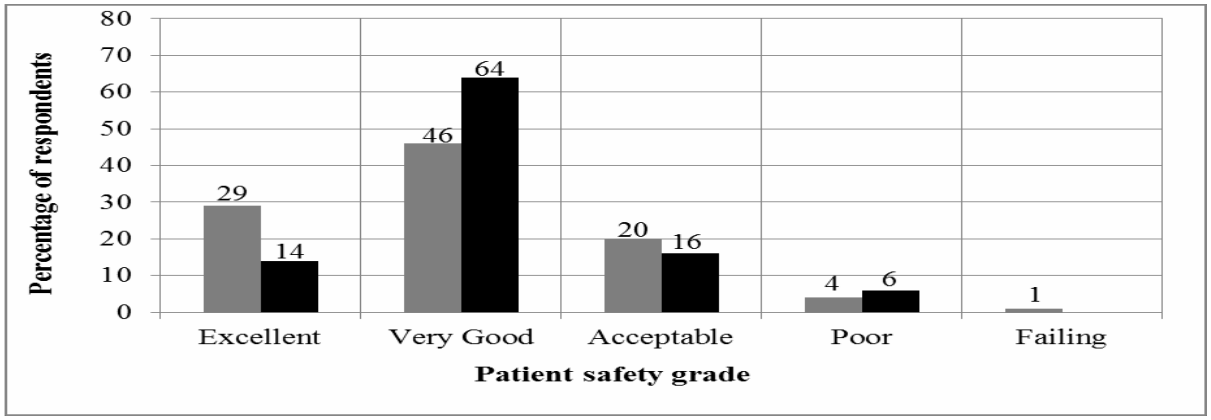

Figure2: Average rates of the participants’ responses regarding the patient safety grade in their working area/unit.

- Study Hospital: Data from a private hospital with Joint Commission International accreditation certificate in Turkey.
- Agency for Healthcare Research and Quality 2011 User Comparative Database Report data (20).

Evaluating the number of events reported in this study, it was shown that more than half of the nurses (53%) did not report any events. Likewise, in 2011, AHRQ demonstrated that more than half of the participants (54%) did not report any events. The number of events reported was evaluated separately according to four independent variables and it was indicated that 44% of the nurses working for 1-5 years and 11% of those working for 11 years or more reported 1 or 2 events. Furthermore, a statistically significant difference was observed in terms of working time in the hospital (P=0.01).

Discussion

Hospital Survey on Patient Safety Culture is commonly used outside the USA where it was developed. Several studies have used this survey to evaluate patient safety culture in different countries, such as Argentina, Australia, Bahrain, Belgium, Colombia, Costa Rica, France, India, Ireland, Japan, Germany, Greece, Lebanon, Mexico, Netherlands, Norway, Peru, Portugal, Saudi Arabia, Scotland, Serbia, Singapore, Spain, Sweden, Switzerland, Taiwan, Turkey, and the United Kingdom (21).

There are a growing number of studies evaluating patient safety culture in Turkey. These studies were carried out in various private and public hospitals, training-research and university hospitals. To the extent of the researcher’s knowledge, no studies evaluating patient safety culture were conducted in a hospital with JCI accreditation certificate in Turkey. This point reveals the uniqueness of the current study, which is expected to contribute to the literature regarding patient safety culture.

For the purpose of evaluating the patient safety culture, this study employed Hospital Survey of Patient Safety Culture. Validity and reliability analysis of the Turkish version of the survey was made by Filiz (18) and it was found to be valid and reliable. A total number of 93 surveys were distributed and the responses of 70 participants were considered valid. Return rate for the surveys was about 75% and the average rate of positive responses for the dimensions was 60%.

‘‘Teamwork within units’’ was found to be the dimension with the highest rate of positive responses in both our study and the study carried out by AHRQ in 2011. ‘‘Overall perceptions of patient safety’’ and ‘‘Handoffs & transitions’’ were other dimensions, which showed high rates, respectively. Likewise, ‘‘Teamwork within units’’ dimension was found to have the highest rate of positive responses in the studies conducted on physicians, nurses, and other hospital staff in Lebanon (22), Taiwan (23), New Zealand (24), Spain (25), Iran (26), and Gambia (27) and in the studies performed on physicians and nurses in Sweden (28) and in those conducted on nurses in Oman (29).

The positive response rate of this dimension in Taiwan was higher (94%), compared to the results of the studies conducted in other countries.

Other two dimensions which showed high rates of positive responses in the studies conducted in the aforementioned countries, except for Sweden, included ‘‘Organizational learning-continuous improvement’’ and ‘‘Supervisor/manager expectations & actions promoting patient safety’’. In the current study, the highest positive response rates belonged to the dimensions of ‘‘Overall perceptions of patient safety’’ (75%), ‘‘Handoffs & transitions’’ (70%), and ‘‘Frequency of event reports (69%). It can be concluded that JCI accreditation made a positive contribution in raising the staff's awareness of the errors and preventing their recurrence.

According to the results, the dimensions with the lowest rates of positive response were found to be ‘‘Staffing’’ and ‘‘Non-punitive response to errors’’. However, AHRQ reported ‘‘Handoffs & transitions’’ to be the dimension with the lowest positive response rate (20). In terms of dimensions with the lowest positive response rates, the results of our study were similar to the findings of the studies conducted in Lebanon (22), Taiwan (23), New Zealand (24), Iran (26), and Gambia (27). Similarly, these two dimensions had the lowest rates of positive responses in the studies conducted only on nurses in Oman (29), Saudi Arabia (30), and Croatia (31).

The positive response rates of ‘‘Staffing’’ dimension were 22% and 15% in the current study and the study carried out in Saudi Arabia, respectively, which were lower than what was reported in other countries. This low rate may be due to some negative effects, such as accreditation procedures leading to increased workload (32). Al-Awa and colleagues' study in Saudi Arabia, which was conducted in an accredited hospital and covered only the perception of the nurses, is a proof to this claim.

Patient safety was graded as excellent or very good by 78% of the participants in our study. This rate reported to be 75% in AHRQ's study (29), 75% in Lebanon (22), 59% in Sweden (28), 52% in Gambia (27), and 32% in Iran (26). As can be seen, the grade of patient safety was perceived more positively in our study. In the current study, 6% of the participants graded the patient safety in the unit they work as poor or bad. This rate was reported to be 3% in Lebanon, 5% in Sweden and AHRQ' study in 2011, and 12% in Lebanon and Gambia.

In a study performed on nurses in the USA and in 12 European countries (Belgium, England, Finland, Germany, Greece, Ireland, Netherlands, Norway, Poland, Spain, Sweden, and Switzerland), 6% of the nurses in the USA considered the level of patient safety to be poor or bad; however, this rate was 18% for the nurses in Poland and 17% for the nurses in Greece (33).

Considering the number of events reported within the last 12 months, 53% of the participants stated that no event was reported. This percentage was reported to be 33%, 57%, 64%, and 68% in Sweden, Lebanon, Iran, and Gambia, respectively. Furthermore, AHRQ reported this rate to be 54% in 2011. The events threatening patient safety should definitely be reported in order to establish patient safety culture in a health institution.

However, as can be seen, in the reported countries, except for Sweden, the percentage of not reporting even a single event was above 50%. This high rate may result from health staff having some worries about being blamed, losing their jobs, being alienated by their colleagues, and encountering legal problems. In the present study, nurses who just started working in the hospital or the nurses who worked in the hospital for a shorter time filled in more event reports. Therefore, it can be stated that senior nurses were more worried about negative consequences of reporting.

Conclusion

As many other studies, this study revealed that nurses considered the teamwork in their teams to be positive; however, they believed that the number of personnel to handle the workload was insufficient. Accreditation, which has been drawing interest increasingly in the recent years as an external quality evaluation tool in health services, can contribute to the creation of patient safety culture. The aforementioned studies, which were conducted mostly on nurses in various countries, draw attention to the issues associated with patient safety that need to be improved.

In the current study, ‘‘Staffing’’, ‘‘Non-punitive response to errors’’, ‘‘Supervisor/manager expectations & actions promoting patient safety’’, ‘‘Communication openness’’, and ‘‘Teamwork across units’’ were the areas that needed to be addressed for the improvement of patient safety culture. Consequently, to improve the patient safety culture, the following measures could be taken:

The quality and quantity of the staff should be enough to cope with the workload. Since high workload and low occupational satisfaction, which is resulted from the insufficient number of nurses, might cause medical errors, health institutions should provide services with sufficient number of nurses according to their needs.Working times of nurses should be arranged in a balanced way. Shift times should be arranged considering the fact that excess working hours may decrease the productivity of nurses and cause errors to be made. When errors are made, they should be considered as a problem of ‘the system’’. Hence, instead of blaming the nurses, the necessary precautions should be taken to prevent error recurrence.

Managers of the health institutions should appreciate the nurses when they did a work according to the established patient safety procedures and should take the suggestions made by the nurses seriously to improve patient safety. Communication between the units and between the nurses should be improved and

the hospital units shouldwork in harmony. Good communication has the potential to prevent many medical errors in health institutions, where functional dependency is very high.

Patient safety culture evaluations should be made with certain intervals to increase awareness regarding patient safety culture and to determine the areas, which need more attention. In spite of the fact that scientific knowledge regarding patient safety culture is increasingly accumulating, the desired level has not been achieved yet and the damages resulting from medical errors still take place in the provision of health services. Conducting further studies on the patient safety culture perception of the personnel contributing to the provision of the health service and sharing the relevant information between countries can help improve the patient safety in the future.

One limitation of the study was that the results of the current study were restricted to the evaluations of the nurses since the study was applied only on nurses. Another limitation of this study was that no comparisons could be made between surgical and internal medicine clinics, as the target hospital, where the study was carried out, only provided the total number of nurses working in the clinics (not the distribution of nurses in each clinic) in accordance with its confidentiality principles. To investigate the effect of hospital accreditation on patient safety culture more thoroughly in Turkey, further studies could be carried out in other hospitals with accreditation certificates.

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