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Analysis of Health Staff's Patient Safety Culture in Izmir, Turkey

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ABSTRACT

Background: Patient safety in hospitals is of global concern. Numerous studies have documented detrimental effects on patients and their families and increased health-care costs resulting from medical errors. To determine the levels of patient safety culture, both in primary health care and university hospital health staffs. **Methods**: The descriptive-comparative study's group consisted of whole staffs who work in local primary health care and university hospital in both Izmir/Bornova city centre. İn order to fill out the questionnaire of health staff Patient Safety Culture Survey Form were used. 25 primary healthcare centers and 10 university hospital clinics in the center of the city of İzmir, Turkey. 199 healthcare staffs in primary healthcare center and 198 healthcare staffs in university hospital clinics. **Results:** When positive score percentages concerning sub areas were compared with US study results, 9 out of 12 sub areas were found lower in primary care. In hospital units, 11 out of 12 sub areas were found lower. **Conclusions:** Many people suffer from preventable medical errors. All of the health staffs should take responsibility about patient safety and related institutions should give priority to develop patient safety culture.

INTRODUCTION

Patient safety in hospitals is of global concern. Numerous studies have documented detrimental effects on patients and their families and increased health-care costs resulting from medical errors [1,2]. The issue has received significant attention following there lease of the renowned report from the IOM, To Erris Human: Building a Safer Health System [3]. The main message in the report was that preventing death and injury from medical errors requires dramatic and system-wide changes [4].

A strong safety culture will minimise medical errors. In this sense, the administrators of health organizations are urged to take responsibility to guarantee patient safety [5]. Fatigue, being overworked, lack of motivation, anxiety, mental fatigue, weak interpersonal relations and difficulty in decision making are the factors that disrupt safety. The existence of such human and system related factors increase the probability of an individual mistake and decrease the probability that another person will reveal this mistake [6]. Organizational culture that supports safety is associated with fewer errors and more voluntary reporting because those organizations promote ablame-free environment where errors are treated as opportunities to learn and improve the system [7,8].

Health systems comprised many types of services, with diversity in their organizational structure and clinical protocols. The aim of this article is to examine patient safety culture both in hospitals and in primary health care services. The following are the research questions of this article (i) What is the patient safety culture in hospitals in the different services? (ii) Are there any differences across primary care and hospital clinics in the same region?

METHODS

The aim of this study is to perform an assessment of patient safety culture among healthcare staffs in ***first tier*** (primary healthcare centres) and ***second tier*** (university hospital care) health organizations in Izmir, in Western Turkey and to compare the result with each other and the report from the USA for 2011. The survey was conducted between 2010 and 2011. In this study, data were collected from twenty five primary health care centers and Ege University Hospital's ten clinics in Izmir. As the safety culture among primary and university hospital healthcare staff was to be compared, participants were chosen the same number to fit the study groups both in primary and university hospital health care.

Questionnaire

The Hospital Survey on Patient Safety Culture (Hospital SOPS) was originally developed, pilot-tested and revised by West at in the USA and then released by the Agency of Healthcare Research and Quality (AHRQ) [9,10]. The psychometric properties of the US version have been published [11]. The questionnaire has been used in various countries besides the USA [12,13].

The survey was designed to assess opinions of hospital staff about patient safety issues, includes 42 items measuring 12 dimensions of patient safety culture (Table2). The number of valid and reliable surveys related to patient safety culture for primary health care services worldwide is limited. For this reason, a modification of the Hospital Survey on Patient Safety Culture (HSOPSC) has been used in non-hospital settings such as nursing homes. In this research, we analyze the responses of primary health- care service staff to a modified version of the HSOPSC. The questionnaire was translated in Turkish by Said Bodur and Emel Filiz and was analysed for reliability and validity. The study found that the Cronbach alpha coefficient was over 0.50 (0.57 - 0.86) for 8 of the 12 subfields within safety culture. We followed the HSOPSC User's Guide [14] for data analysis to allow for benchmarking the results.

Statistical Analysis

The data analysis was performed using the Statistical Package for Social Science (SPSS) 20.0 package programme. As the scale had been widely used in hospitals in the USA, AHRQ had first compiled a database consisting of the data gathered in 2008 for comparative studies and the database was updated in 2011 with the results of the hospitals utilising or reusing the scale. As the data obtained from the patient safety questionnaire form did not constitute a normal distribution (according to the Kolmogorov-Smirnov test) a Mann Whitney U test was used to compare the means.

Ethical approval

Written permission from ethical committee and approval from the institution where the study was performed were obtained prior to the study. The participants were informed on the objective of the study and their informed consent was obtained.

RESULTS

The socio-demographic characteristics of the physicians and nurses working in the Primary Health Care Centres and University Hospital Surgery and Internal Medicine units is given in Table 1.

The average patient safety culture sub-dimension scores for the staffs of tier one and tier two health service staffs are given in Table 2. The analysis performed shows that there was a statistically significant difference between first tier and second tier healthcare staffs in terms of positive responses given to the various sub-dimensions of questionnaire ($p<0.01$).

The comparison of the average scores of first tier healthcare organization staffs on the patient safety culture scale with the benchmark scores is given in Graph 1. The comparison of the average positive scores with the benchmark scores in the perception of patient safety culture shows that the averages are lower in 9 of the 12 sub-dimensions.

Table 1. Distribution of health staffs according to sociodemographic characteristics

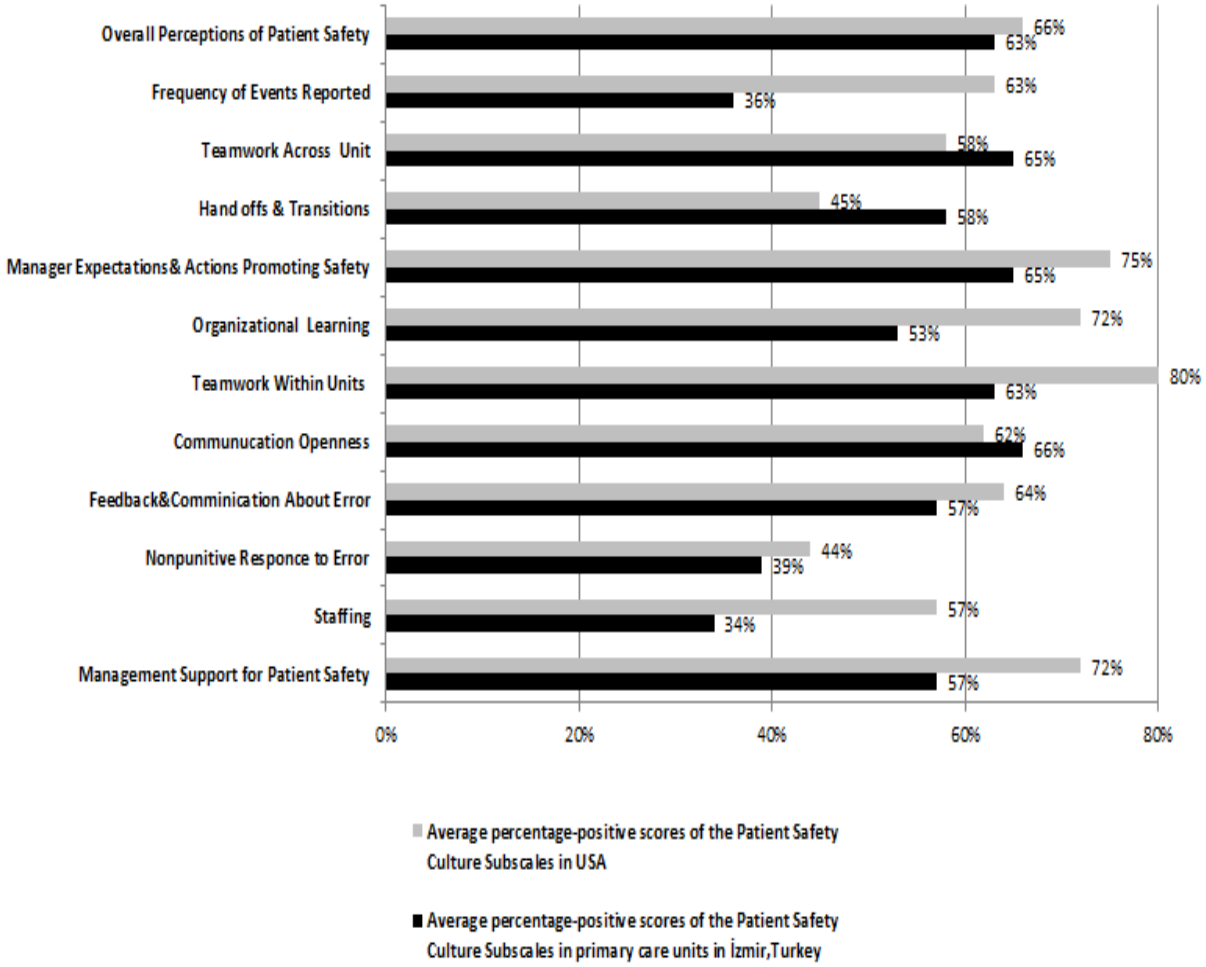
Sociodemographic Characteristics	Primary Care Units				University Hospital Units							
					Internal Medicine Clinics				Surgical Clinics			
	Physician		Nurse		Physician		Nurse		Physician		Nurse	
Group of age	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
≤ 24 age	-	-	-	-	-	-	6	11.8	-	-	2	4.2
25-34 age	5	5.2	39	38.2	49	96.1	23	45.1	46	95.8	27	56.3
35-44 age	62	63.9	49	48.0	2	3.9	19	37.2	2	4.2	15	31.3
≥ 45 age	30	30.9	14	13.8	-	-	3	5.9	-	-	4	8.2
Sex												
Male	52	53.6	-	-	39	76.5	-	-	30	62.5	-	-
Female	45	46.4	102	100	12	23.5	51	100	18	37.5	48	100
Educational status												
High school	-	-	11	10.8	-	-	1	2.0	-	-	-	-
Associatedegree	-	-	75	73.5	-	-	9	17.6	-	-	12	25.0
University	80	82.5	16	15.7	48	94.1	38	74.5	47	97.9	32	66.7
Postgraduate	17	17.5	-	-	3	5.9	3	5.9	1	2.1	4	8.3
Marital status												
Single	11	11.3	5	4.9	33	64.7	26	51.0	24	50.0	13	27.1
Married	84	86.6	88	86.3	18	35.3	22	43.1	22	45.8	29	60.4
Discovert	2	2.1	9	8.8	-	-	3	5.9	2	4.2	6	12.5
TOTAL	**97**	**100.0**	**102**	**100.0**	**51**	**100.0**	**48**	**100.0**	**51**	**100.0**	**48**	**100.0**

Table 1. Distribution of health staffs according to sociodemographic characteristics

	Primary Care Units				University Hospital Units							
					Internal Medicine Clinics				Surgical Clinics			
	Physician		Nurse		Physician		Nurse		Physician		Nurse	
Where lived commonly	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
City	27	27.8	42	41.2	11	21.6	25	49.0	15	31.3	18	37.5
County	5	5.2	14	13.7	6	11.8	10	19.6	5	10.4	6	12.5
Village	-	-	-	-	-	-	2	3.9	-	-	1	2.1
Town	-	-	3	2.9	2	3.9	1	2.0	2	4.2	2	4.2
Metropol	65	67.0	43	42.2	32	62.7	13	25.5	26	54.1	21	43.7
Perception of in come level												
Verygood	5	5.2	2	2.0	1	2.0	-	-	-	-	1	2.1
Good	75	77.3	26	25.5	18	35.3	16	31.4	11	22.9	11	22.9
Moderately	17	17.5	63	61.8	27	52.9	30	58.8	26	54.2	32	66.7
Bad	-	-	11	10.7	5	9.8	5	9.8	11	22.9	4	8.3
Health insurance												
Present	97	100	102	100	48	94.1	51	100	43	89.6	47	97.9
Absent	-	-	-	-	3	5.9	-	-	5	10.4	1	2.1
TOTAL	**97**	**100.0**	**102**	**100.0**	**51**	**100.0**	**51**	**100.0**	**48**	**100.0**	**48**	**100.0**

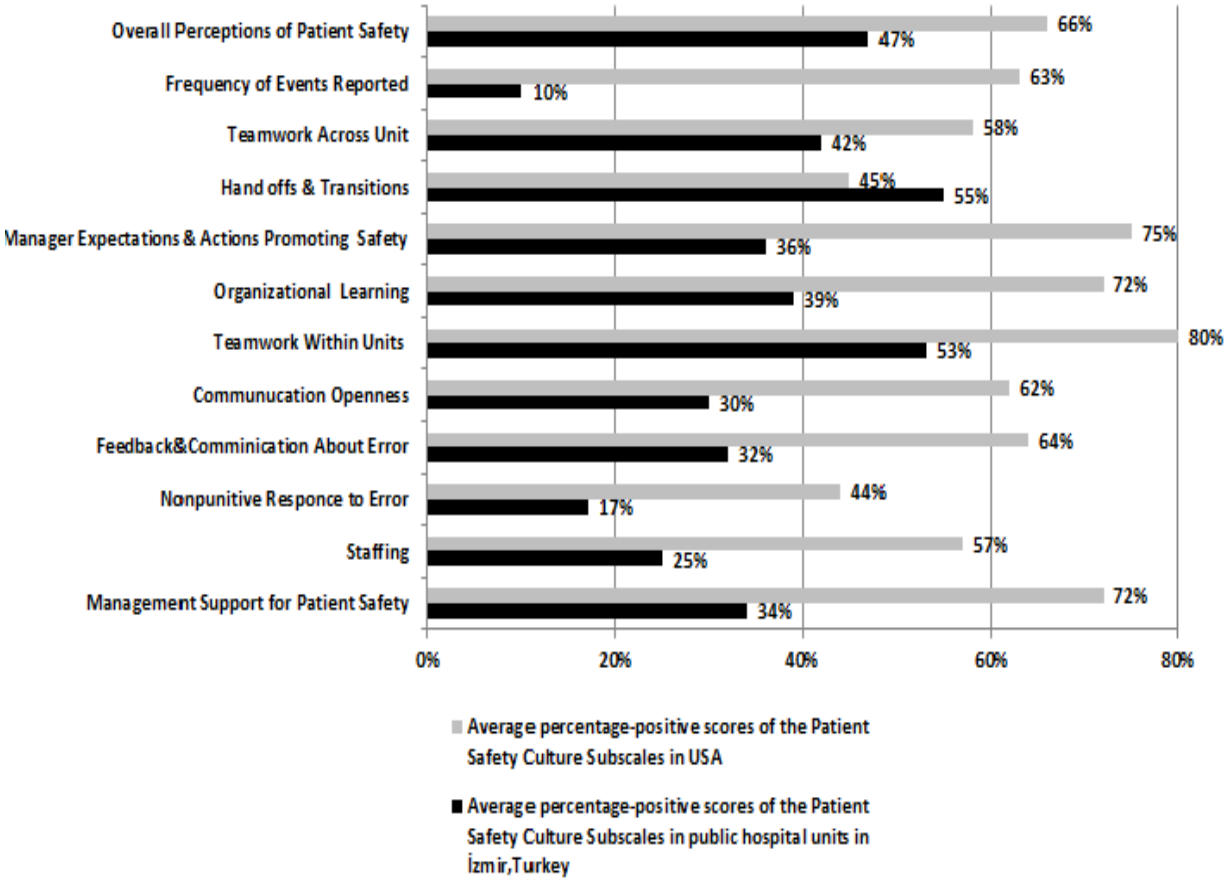
Table 2. Comparison of average percentage-positive scores of the participating university hospital's units with primary care units in the same region of Izmir, Turkey

Patient Safety Culture Subscales	Primary Care Units (n=199) Average percentage-positive scores	University Hospital's Units (n=198) Average percentage-positive scores
Overall Perceptions of Patient Safety (4 items)	64	48
	U=13391.00 p=0.000 p<0.01	
Frequency of Events Reported (3 items)	37	10
	U=13228.50 p=0.000 p<0.01	
Team work Across Units (4 items)	65	42
	U=11848.50 p=0.000 p<0.01	
Hand offs & Transitions (4 items)	59	55
	U=18562.00 p=0.308 p>0.05	
Manager Expectations & Actions Promoting Patient Safety (4 items)	66	36
	U=10045.00 p=0.000 p<0.01	
Organizational Learning-Continuous Improvement (3 items)	53	40
	U=15377.00 p=0.000 p<0.01	
Team work With in Units (4 items)	63	53
	U=16074.00 p=0.001 p<0.05	
Communication Openness (3 items)	67	30
	U=8552.50 p=0.000 p<0.01	
Feedback & Communication About Error (3 items)	57	33
	U =12421.00 p=0.000 p<0.01	
Non punitive Response to Error (3 items)	39	18
	U=11869.50 p=0.000 p<0.01	
Staffing (4 items)	35	25
	U=15078.00 p=0.000 p<0.01	
Management Support for Patient Safety (3 items)	58	35
	U=12942.00 p=0.000 p<0.01	



Graph 1: Comparison of average percentage-positive scores of the Patient Safety Culture Subscales participating primary care units in İzmir, Turkey with US study results

The comparison of the average scores of second tier healthcare organization staffs on the patient safety culture scale with the benchmark scores is given in Graph 2. The comparison of the average positive scores with the benchmark scores in the perception of patient safety culture shows that the averages are lower in 11 of the 12 sub-dimensions.



Graph 2: Comparison of average percentage-positive scores of the Patient Safety Culture Subscales participating university hospital units in İzmir, Turkey with US study results

DISCUSSION

It has been indicated that the most important barrier in the development of safety in patient care is the safety culture environment in healthcare organizations [6]. The aims of the assessment of safety culture in organizations are the identification of areas to be developed in terms of patient safety, increasing awareness regarding patient safety among staffs, monitoring the change in patient safety interventions through time and the internal and external comparisons of the results [10].

The comparison of the average positive scores with the benchmark scores in the perception of patient safety culture shows that the averages are lower in 9 of the 12 sub-dimensions (Graph 1). The comparison of the average positive scores with the benchmark scores in the perception of patient safety culture shows that the averages are lower in 11 of the 12 sub-

dimensions (Graph 2).

Healthcare staffs gave positive responses to the dimension of "Teamwork Within Units" (first tier healthcare organization staffs - 63%, second tier healthcare organization staffs - 53%, Graph 1, Graph 2). Although staffs were motivated to work in harmony and solidarity with teammates, this was not the case during activities with other units. This finding shows that each unit in the organization had a more independent culture. In the study, Pronovost et al. reported that nursing administrators (90%), physicians (76%) and nurses (71%) had positive relationships with teammates within the same unit [15]. Another study showed that nurses had no reservations about cooperating within the same department, but did not work well with other departments [16]. Teamwork is an important factor in the provision of quality healthcare and the development of patient safety. To establish an effective safety culture, staffs must communicate out with their own departments frequently and sincerely [17].

Healthcare staffs think that their organizations are understaffed (66% among first tier healthcare organization staffs, 75% among second tier healthcare organization staffs) (Graph 1, Graph 2). Singer et al. showed in their study of hospital safety culture that the loss of experienced personnel negatively affected patient care [18]. The lack of nurses and especially the deficiencies of well trained and experienced nurses can lead to an increase in the number of unwanted occurrences [19].

Healthcare staffs gave negative responses in regard to "organizational learning and continuous development" (47% among first tier healthcare organization staffs, 61% among second tier healthcare organization staffs) (Graph 1, Graph 2). The participants believe that the participation to patient safety activities within their organizations, learning from mistakes made and the assessment of the subsequent changes made is insufficient. Hellings et al. (2007) identified "organizational learning" as an urgent and mandatory field of development in their study of hospitals in Belgium. Organizational learning is the continuous development of knowledge and innovation. Organizations providing healthcare services may develop their organizational learning capacity to increase quality and safety [20]. (Graph 1, Graph 2).

In the study, the positive perception level of patient safety culture among healthcare staffs was generally lower that the benchmark scores, while higher positive responses were given in the dimensions of "Overall Perceptions of Patient Safety" and "Handoffs & Transitions" (Graph 1, Graph 2). This situation may be caused by cultural differences or may be perceived

as the hesitance of healthcare staffs to voice negative opinions regarding their organizations [16,21]. In the assurance of patient safety, the development of communication between staff completing and starting shifts and during patient transfer (responsibility transfer) is mandatory [22].

According to the study, the proportion of second tier healthcare organization staffs giving positive answers in terms of patient safety culture was lower than that of first tier healthcare organization staffs. In order to increase awareness in organizations regarding patient safety, the organizational safety culture must be analysed, the patient safety interventions or programmes must be assessed and changes monitored over time, systems must be developed to facilitate staff to report, discuss and learn from mistakes made in patient safety and a patient safety committee may be established.

At the end of the study, the patient safety culture is important not only for the countries mentioned but for the entire world. In this sense, intercultural studies can help patient safety culture to develop. Patient safety encompasses all of the processes designed to protect patients from injuries caused by medical mismanagement.

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