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The Evaluation of Patient Safety in Oral and Dental Health Centers

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Abstract In our study, we aimed to determine the levels of patient safety and reporting adverse events in the healthcare employees of oral and dental health centers and to evaluate the effects socio-demographic characteristics on patient safety. The study performed in November and December, 2012 and included the medical staff of oral and dental health centers in the Thracian Region of Turkey. Data was collected using the survey. Using the random sampling method, the sample has been chosen from the population of 200 healthcare personnel and 150 completely answered surveys have been evaluated. The SPSS for Windows 15.0 software was used for analyzing data. Hospital safety, team work, security gap, system quality and the management assistance of healthcare employees was high but their adverse events assessment was determined to be on a moderate level. It was identified that sociodemographic characteristics of healthcare employees have an influence on patient safety.

Keywords: *patient safety, employee, dental center, advers event*

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1. Introduction

One of the most important indicators of quality in health services is the provision of patient safety. Health institutions deal with many problems in order to provide high quality care and safety for patients. The success of quality is related to the main principle of reducing error, which poses a major problem in health services. Safety is the primary principle and a critical component of improving quality. Therefore, patient safety is a prioritized subject in health systems [2]. Patient safety is the absence of erroneous treatments and avoiding and preventing injuries and adverse outcomes which derive from the presentation of health services [16]. Some terms are used in the literature regarding this context. Harm involves all types of threats and unsafe conditions against safety. Event corresponds to all deviations from generally accepted medical services. These deviations carry the risk of harming patients. Adverse event "medication error" involves patients who come to harm due to medical service management and excludes disease related complications. Error is not performing an act in accordance with its purpose or goal due to errors of performance and planning [24]. In the present study, the term adverse event will be used. Patient safety is frequently measured via adverse event rates. The problem of adverse events in health services is not new. Research on adverse events started between the years of 1960 and 1970; however the subject has been neglected[1]. Since, advancements took place in the areas of medicine and dentistry; however, the occurrence of adverse events continues to challenge health service providers [13]. In addition, the possibility of adverse events increases as the health systems become complicated.

The report "To Err is Human: Building a Safer Health System", which was published by the Institute of Medicine in1999, revealed that health systems failed to provide high quality care and safety for patients and that a safer health system should be established. This report showed that appromixately 44.000-98.000 people died annually due to medication errors occurred in US hospital settings. This number is more than deaths due to motor vehicle accidents, breast cancer, and AIDS [2,13,24]. In another study, it was reported that 4483 children out of 52000 suffer from deathly events due to harm made by unsafe medical care during hospital stay [13]. It was estimated that adverse events which occur within or out of hospitals results in 7000 deaths every year [2]. In addition, costs related to adverse patient events are surprising. It was calculated that the total national cost of preventable adverse events is 17-29 billion dollars per year in the US and these numbers are more than half of health costs [13]. It was calculated that the annual cost of hospital infections is 1 billion Sterlins in the UK[5]. When we consider the subsidies collected from health personnel and the compensations paid against adverse events, a far more serious picture emerges.

Despite the increasing interest in patient safety, the lack of awareness on adverse events continues to be prevalent. Many patients suffer from increasing pain, disability, and

psychological traumas or experience shame, guilt, and depression when health personnel make an error. Therefore, the results of adverse events in health systems are major. Environmental safety and risk management, which include improving patient safety, infection control, safe medication use, equipment safety, and safe clinical applications, require a wide range of acts in performance improvement. The Joint Commission International, which became a partner in the establishment of an international patient safety center with the World Health Organization in 2005, declared that one of every 10 patients come to serious harm due to medical adverse events, but this news release is not important. Recently, there are 42 billion websites dedicated to patient safety. Obviously, the public became aware of serious ongoing problems in patient safety. The majority of these websites include vital information on medical adverse events, comparison data, risk reduction strategies, and real life examples of medical errors [2].

Human factor plays an important roles in the emergency of medication errors threating patient safety. For example nurse sataff have a great impact on the quality of patient care and patient safety [15]. In the book "Human Error" by James Reason, it was stated that "error is not the cause of an event; it is the result of an event. Therefore, when an error occurs, instead of asking who, it is should be asked how and why the system became ineffective". It was stressed that accusing individuals is a common tradition due to errors in the world of medicine and humans cannot be changed, but humans' working conditions can be changed. In this context, the importance of taking the system as a basis and improving the system was underlined [24]. Hence, health policies should generate effective systems in order to regulate and improve the applications performed by areas of health services, institutions that provide services, and medical staff.

In Turkey, Oral and Dental Health Centers serve in affiliation with the Ministry of Health, Turkey State Hospitals Institution. Oral and Dental Health Institutions perform preventive and treating health services in all branches of dentistry, perform advanced investigation and treatment as well as inpatient and outpatient examination, investigation, diagnosis, and treatment services and are private health institutions that can open dental treatment and prosthesis centers and dental clinics which has at least 10 unit capacity and which works financially and administratively in association with them [17]. Although patient safety problems in oral and dental health centers are major and complex, there are not many studies on patient safety and the adverse events occurring in these centers. With the publication of "Ministry of Health, Regulation of Improving Institutional Quality and Performance Evaluation in Inpatient Treatment Institutions", "Declaration of Providing and Protecting Patient and Personnel Safety" [18], and "Regulation of Providing Patient and Personnel Safety" [19] by the Ministry of Health (MH) in Turkey, patient safety entered the areas of interest among medical staff, patients, academicians, and legal experts. In this context, it should be provided that patient receive health services in a safe way. In order to provide patient safety at work, it is important to control events that harm or carry the possibility of harming patients and to establish and maintain an effective safety reporting system (SRS) for preventing similar events from occurring again. For this purpose, the Turkish Ministry of Health, Department of Quality and Accreditation in Health put the SRS into effect in April, 2011 [25]. The SRS is a system formed in order to learn from events that occur in hospitals and to prevent similar events from occurring again. The main component of the SRS is the notifications made for preventing events experienced by employees from happening again. This system aims to form an institutional learning process in hospitals. In the system, the main target is not individuals but the system itself. Therefore, individuals who are responsible of an event is not the point of focus but the system itself is. Regulations are carried through the system instead of through individuals [25,26]. The SRS should at least contain topics on medication safety, transfusion safety, surgical safety, patient falls, needle and sharps injuries, and contact with blood and bodily fluids [25]. The SRS provides patient and employee safety, promotes the development of safety culture within an institution, reduce errors, increase efficiency, and decrease mortality and morbidity [26]. Hence, safe health services can be provided at the country's health institutions.

In the study, it was aimed to determine the levels of patient safety and adverse event assessment among healthcare employees working at Oral and Dental Health Centers (ODHC) in the Thracian Region and to determine the effects of sociodemographic characteristics on patient safety.

2. Methods

This study included healthcare employees staff that works in the Thracian Region of Turkey (Kirklareli, Edirne, and Tekirdag ODHC) and was conducted in November-December, 2012. Data was collected with the questionnaire method. In the study, a questionnaire, adapted from the "Patient Safety Culture Hospital Questionnaire", which was prepared by the Agency for Healthcare Research and Quality, was used. The questionnaire consisted of the sociodemographic information and the patient safety assessment sections. The questionnaire had a 5 point Likert-type scale and items were evaluated by taking 1 as the lowest value and taking 5 as the highest value. Using the random sampling method, a sample was chosen from the study universe, which included 200 medical staff and 150 questionnaires with no missing data were evaluated. Statistical analysis was conducted using the SPSS 15.0 for Windows software with a confidence interval of 95%. The patient safety assessment scale was found to have 6 factors: hospital safety, team work, security gap, system quality, adverse event assessment, and management assistance. It was determined that the sub factor scores of the scale did not show normal distributions in the Kolmogorov Smirnov and Shapiro-Wilk analyses ($p<0.05$). In data evaluation, nonparametric methods are used if the number of cases in a group is not sufficient or if the data cannot meet parametric test assumptions regardless of the sufficiency of cases [10]. Therefore, data was tested with the Mann Whitney U test, the Kruskall Wallis H test (Mann Whitney U with the post hoc Bonferroni adjustment), and the chi-square test. This study is descriptive and deductive. Study results and finings cannot be generalized and is limited to the medical staff working at ODHCs in the Thracian Region.

Written permission and consent was taken from the associated health institutions. In addition, the healthcare employees was informed about the study and healthcare employees who agreed to participate in the study were asked to complete the questionnaire. The ethics committee approval is not necessary.

3. Results

3.1. Sociodemographic Characteristics

It was determined that 62.7% of the employees were female, 37.3% were male, 32% were dentists, 28% were nurses-dental clinic assistants, 66.7% were married, 50% had a bachelor's degree or higher, 92.7% had a job experience of more than one year, and 84% had an institution experience of more than one year (Table 1). It was found that 68% of the employees (n=102) were in direct communication with patients due to their positions.

Table 1. Sociodemographic characteristics of the employees

Variables	Groups	N=150	%
Title	Dentist	48	32.0
	Dental lab technician	10	6.7
	X-Ray technician	8	5.3
	Nurse-dental clinic assisstant	42	28.0
	Secretary-administrative officer	42	28.0
Status	Permanent	128	85.3
	Contracted	22	14.7
Gender	Male	56	37.3
	Female	94	62.7
Age	21-25	15	10.0
	26-30	52	34.7
	31-35	34	22.7
	36-40	24	16.0
	41 and more	25	16.7
Marital status	Married	100	66.7
	Single	50	33.3
Education	High school or equivalent	30	20.0
	Associate degree	45	30.0
	Bachelor’s degree	42	28.0
	Master’s degree	33	22.0
Job experience	Less than 1 year	11	7.3
	1-5 years	41	27.3
	6-10 years	30	20.0
	11-15 years	15	10.0
	16-20 years	19	12.7
	20 and above	34	22.7
Institutional seniority	Less than 1 year	24	16.0
	1-5 years	105	70.0
	More than 6 years	21	14.0
Type of employment	Constant day shift	62	41.3
	Day shift and occasional night shifts	46	30.7
	Day shift and overtime (no night shift)	19	12.7
	Work shifts	15	10.0
	Other	8	5.3
Unit	Polyclinic	80	53.3
	Surgery room, sterilization, emergency service	6	4.0
	X-Ray	7	4.7
	Laboratory	15	10.0
	Administrative units	25	16.7
	Other	17	11.3

3.2. Patient Safety Factors, Factor Loadings, and Factor Reliability

3.2.1. The Section on Patient Safety, the Unit, and Administrators

The Cronbach's alpha coefficient of the 24-item scale, which was scaled as "1:I strongly disagree" and "5:I strongly agree", was found to be 0.852 and it was concluded that the scale was powerful. The correlation between questions was found to be between 0.271 and 0.612. The questions in the scale were homogenous and related to each other (F:10.132 $p<0.001$). The first of the two values used in order to determine the suitability of the data set for factor analysis was the Kaiser-Meyer-Olkin (KMO) value. The KMO value of the statements section of the scale was found to be 0.873. According to this value, the data set was found to be suitable for factor analysis. The Bartlett test result was highly significant ($p<0.000$). A high correlation between variables was found. In determining

the number of factors, 4 factors emerged which had eigenvalues over 1. The first factor explained 14.51% of the total variance, the second factor explained 13.38%, the third factor explained 13.31%, and the fourth factor explained 12.76%. It was determined that the 4 factors together explained 53.96% of the total variance (Table 2).

Table 2. Patient safety factors, factor loadings, and factor reliability

Items	Factors						Cronbach's Alpha
	1. Hospital safety	2. Team work	3. Security gap	4. System quality	5. Adverse event assessment	6. Management assisstance	
The units work well together in order to provide the best treatment and care for patients.	0.741						0.735
Activities of the management show that patient safety is a high priority.	0.628						
Patient safety is a more prioritized principle than doing more work.	0.596						
The hospital management provides a work atmosphere that increases patient safety.	0.585						
After making changes for increasing patient safety, we evaluate the efficacy of these changes.	0.574						
People who work in this unit treat each other with respect.		0.778					0.751
When there is too much immediate work to do, we work together as a team.		0.751					
People who work in this unit support each other.		0.711					
We actively participate in work aimed at enhancing patient safety.		0.587					
Our managers may ignore repetitive problems of patient safety.			0.758				0.717
It is thought that not encountering more serious errors here is linked to chance.			0.714				
Frequently, problems occur in the information flow between units.			0.712				
It is thought that the management seems to be interested in patient safety only when an unwanted event occurs.			0.674				
Our managers approve work done in accordance with patient safety processes.				0.762			0.748
Our managers take employees' suggestions seriously in order to enhance patient safety.				0.730			
The procedures and systems we apply are successful at preventing errors.				0.544			
There is a good cooperation which enables working between units.				0.510			
It is reported when an error that does not bear the potential of harming a patient is made.					0.943		0.911
It is reported when an error that can be fixed without affecting the patient is made.					0.911		
It is reported when an error that carries the possibility of harming a patient but eventually does not cause harm is made.					0.866		
Employees can comfortably mention something they saw which can negatively affect patient care.						0.809	0.794
In this unit, we discuss about methods that would prevent errors from occurring again.						0.786	
In this unit, we are informed about the errors made.						0.775	
We are informed about the changes which take place due to reported events.						0.726	

3.2.2. The Section on the Frequency of Reporting Adverse Events

The Cronbach's alpha coefficient of the 7 items, which was scaled as "1:never, 2:rarely, 3:sometimes, 4:most times, and 5:always", was found to be 0.822 and it was concluded that the scale was powerful. The correlation between questions was found to be between 0.419 and 0.688. The questions in the scale were homogenous and related to each other (ANOVA F:136.472 p<0.001). The KMO value of the statement frequency and reporting of adverse events section of the scale was found to be 0.758. According to this value, the data set was found to be suitable for factor analysis. The Bartlett test result was highly significant (p<0.000). A high correlation between variables was found. In the factor analysis, which was conducted for the statement frequency and reporting of adverse events section of the scale, 2 factors emerged with eigenvalues over 1. The first factor (Factor:5) explained 36.69% of the total variance, and the second factor (Factor:6) explained 35.60%. It was determined that the 2 factors together explained 72.29% of the total variance (Table 2).

3.3. Employees' Level of Perceiving Patient Safety

Among the employees, levels of patient safety (3.77±0.63), team work (4±0.66), system quality (3.69±0.67), and management assistance (3.71±0.64) was

found to high and this was evaluated as positive. However, the level of adverse event assessment was determined to be moderate (3.06±1.08), therefore, it was thought that adverse events were not reported in a suitable way. In addition, the level of security gap was found to be high (3.6±0.73) and this is a negative finding.

It was observed that 11.3% of the employees (n=17) evaluated their institutions as excellent in means of patient safety, 46.7% (n=70) evaluated their institutions as very good, 37.3% (n= 56) evaluated their institutions as acceptable, 4% (n=6) evaluated their institutions as weak, and 0.7% (n=1) evaluated their institutions as unsuccessful. It can be said that the institutions have shortcomings in means of patient safety.

It was determined that 84.7% of the employees (n=127) did not write any reports on adverse events within the last year, 10.7% (n=16) wrote 1-2 reports on adverse events and gave it to administrators within the last year, 2% (n=3) wrote 3-5 reports, and 2.7% (n=4) wrote 6-10 reports. This finding shows that the frequency of reporting adverse events at institutions is very low.

Table 3. The effects of sociodemographic characteristics on patient safety

Socio-demographic characteristics	Hospital safety	Team work	Security gap	System quality	Adverse event assessment	Management assisstance
Gender						
Male	3.82±0.7	3.99±0.81	3.61±0.77	3.72±0.67	3.12±1.17	3.8±0.66
Female	3.74±0.58	4±0.56	3.59±0.71	3.68±0.67	3.01±1.02	3.65±0.62
p	0.432	0.376	0.972	0.587	0.457	0.163
Status						
Permanent	3.76±0.62	3.97±0.67	3.58±0.72	3.7±0.65	3.07±1.11	3.67±0.64
Contracted	3.83±0.66	4.14±0.66	3.7±0.8	3.67±0.76	3±0.9	3.89±0.63
p	0.508	0.400	0.582	0.947	0.748	0.120
Marital status						
Married	3.79±0,64	4.01±0.64	3.62±0.74	3.64±0.68	3.02±1.11	3.69±0.64
Single	3.74±0,6	3.99±0.72	3.56±0.71	3.81±0.63	3.13±1	3.73±0.65
p	0.508	0.755	0.451	0.146	0.469	0.755
Title						
Dentist	3.68±0.64	3.88±0.66	3.6±0.73	3.68±0.63	2.97±1.15	3.55±0.68
Dental lab technician	3.34±0.55	3.78±0.38	3.7±0.56	3.4±0.61	2.73±1.24	3.56±0.58
X-Ray technician	4.03±0.33	4.16±0.46	3.53±0.54	3.88±0.63	2.21±1.17	4.1±0.4
Nurse-dental clinic assisstant	3.9±0.52	3.95±0.66	3.8±0.58	3.79±0.73	3.27±1.06	3.71±0.63
Secretary-administrative officer	3.8±0.71	4.21±0.72	3.39±0.88	3.65±0.66	3.17±0.87	3.84±0.6
p	0.055	**0.033***	0.291	0.519	0.120	0.076
Age						
21-25	3.76±0.8	3.97±0.89	3.52±0.98	3.63±0.83	3±1.25	3.8±0.7
26-30	3.76±0.59	3.96±0.64	3.63±0.64	3.74±0.66	3.09±0.91	3.71±0.6
31-35	3.77±0.58	3.94±0.68	3.57±0.81	3.67±0.64	3.11±1.01	3.59±0.64
36-40	3.77±0.66	4.07±0.55	3.61±0.75	3.7±0.71	3.06±1.33	3.75±0.65
41 and more	3.82±0.67	4.11±0.67	3.6±0.65	3.66±0.59	2.95±1.17	3.75±0.7
p	0.977	0.863	0.992	0.925	0.995	0.846
Education						
High school or equivalent	3.81±0.64	3.9±0.86	3.6±0.79	3.54±0.68	2.71±0.85	3.89±0.59
Associate degree	3.84±0.61	4.13±0.55	3.61±0.65	3.72±0.74	3.18±1.07	3.72±0.65
Bachelor's degree	3.83±0.58	4.1±0.57	3.56±0.83	3.78±0.58	3.28±1.05	3.65±0.62
Master's degree	3.57±0.67	3.78±0.68	3.64±0.66	3.68±0.65	2.91±1.23	3.58±0.68
p	0.207	0.118	0.999	0.539	0.071	0.207
Job experience						
Less than 1 year	3.56±0.74	3.64±1.05	3.61±0.72	3.48±0.85	2.42±0.88	3.76±0.6
1-5 years	3.72±0.56	4.04±0.61	3.63±0.75	3.66±0.62	3.02±0.84	3.65±0.63
6-10 years	3.85±0.66	4.03±0.49	3.64±0.78	3.74±0.74	3.41±1.13	3.69±0.68
11-15 years	3.72±0.57	3.65±0.86	3.57±0.76	3.7±0.65	2.71±1.21	3.56±0.6
16-20 years	3.82±0.68	4.24±0.5	3.66±0.81	3.88±0.66	3.32±1.21	3.85±0.73
20 and above	3.83±0.65	4.06±0.65	3.51±0.64	3.65±0.61	3±1.1	3.75±0.61
p	0.739	0.225	0.971	0.802	0.100	0.810
Institutional seniority						
Less than 1 year	3.72±0.63	3.99±0.77	3.52±0.8	3.66±0.74	2.61±0.99	3.72±0.7
1-5 years	3.78±0.61	4.03±0.63	3.68±0.68	3.71±0.68	3.16±1.09	3.73±0.62
More than 6 years	3.81±0.71	3.83±0.73	3.3±0.84	3.64±0.51	3.06±1.02	3.58±0.67
p	0.834	0.469	0.195	0.871	0.101	0.720
Type of employment						
Constant day shift	3.75±0.64	4.07±0.66	3.48±0.78	3.54±0.69	2.83±1.12	3.71±0.66
Day shift and occasional night shifts	3.84±0.57	3.99±0.67	3.73±0.7	3.78±0.67	3.44±1.01	3.79±0.64
Day shift and overtime (no night shift)	3.6±0.73	3.66±0.66	3.55±0.75	3.63±0.56	3.21±1.06	3.67±0.58
Work shifts	3.96±0.71	4.23±0.66	3.72±0.68	4.1±0.6	2.73±0.87	3.69±0.7
Other	3.6±0.3	3.88±0.44	3.63±0.5	3.75±0.42	2.88±0.97	3.3±0.44
p	0.367	0.057	0.629	**0.034***	**0.028***	0.367
Unit						
Polyclinic	3.75±0.58	3.91±0.64	3.67±0.65	3.66±0.67	3.07±1.07	3.63±0.65
Surgery room, Sterilization, Emergency service	3.8±0.62	3.92±0.92	3.71±0.77	3.92±0.26	2.67±0.82	4±0.55
X-Ray	4.03±0.35	4.21±0.47	3.57±0.57	3.96±0.62	2.38±1.15	4.11±0.43
Laboratory	3.83±0.78	3.95±0.54	3.37±1.03	3.78±0.6	3.16±1.2	3.88±0.57
Administrative units	3.81±0.68	4.2±0.58	3.59±0.71	3.64±0.7	3.07±1.26	3.69±0.62
Other	3.66±0.73	4.12±0.92	3.46±0.87	3.68±0.78	3.27±0.69	3.66±0.7
p	0.854	0.149	0.917	0.743	0.457	0.250

3.4. The Effect of Sociodemographic Characteristics on Patient Safety

Patient safety factors did not show significant differences according to gender, working as a contract or permanent employee, marital status, age, education, job experience, hospital seniority, and work unit ($p>0.05$). It can be said that patient safety assessment is similar across these groups (Table 3). When we examined patient safety factors, we observed that the groups showed significant differences in the team work factor according to titles ($p<0.05$). Team work scores of dentists were found to be significantly lower than secretaries-administrative officers ($p=0.0062$). The groups showed significant differences in the system quality and adverse event assessment factors according to the type of employment ($p<0.05$). System quality scores of employees who work constant day shifts were significantly lower than those who work shifts ($p=0.006$). Adverse event assessment scores of employees who work constant day shifts were significantly lower than those who work day shifts and sometimes night shifts ($p=0.006$). It can be said that employees who work constant day shifts report adverse events less compared to those who work day shifts and sometimes night shifts.

4. Discussion

Research on patient safety is a new phenomenon; however, studies are based on information provided by pervious high quality care research [6]. Patient safety studies continue to be conducted at an increasing rate on the national and international level. In a study conducted at hospitals located in developing countries, it was determined that the rate of adverse events per country changed between 2.5% and 18.4% and that 83% of these events were preventable and 30% were associated with patient death [27]. In a study conducted in 12 countries located in Europe and in the US, it was reported that shortcomings in means of quality of hospital care were prevalent in all countries and that patient safety could not be provided at sufficient levels. It was also indicated that the reason for this situation is a relatively low cost strategy. It was found that the nurses and patients living in these countries wanted safe care to be provided [1]. In a study conducted at hospitals located in 7 developing countries, it was determined that 8-78% of the hospitals achieved the critical standards a hospital has to adhere to. In general, highest level of complaints was found in the leadership and management factors [21].

In the study, it was determined that the majority of employees were middle aged, female, married, permanent state officers, highly experienced, and in direct contact with patients. Although the majority of the employees evaluated institutional patient safety as very good or excellent, it was observed that there were shortcomings in means of patient safety at the institutions. In patient safety assessments, hospital safety, team work, security gap, system quality, and management assistance was found to be high; whereas adverse event assessment was moderate. However, moderate levels of adverse event reporting indicate that reporting is rare, that there may be drawbacks in reporting adverse events, and that the employees cannot benefit from feedback at sufficient levels. High security weakness also indicate that the level of awareness regarding patient safety is insufficient in administrators and health workers and that awareness should be raised by providing relevant information to them. Similarly, in a study conducted in primary health institutions, it was found that team work within the unit and the general perception of safety was high and the frequency of reporting adverse events was low. In addition, it was determined that adverse events were seldom reported by employees [8]. In a study by Altindis, it was found that employees' perception on reporting adverse events was moderate [4].

In the study, it was determined that employees' sociodemographic characteristics affected patient safety. Team work scores of dentists were significantly lower than those of secretaries and administrative officers. It was found that dentists worked in a more individual way compared to secretaries and administrative officers and that other groups made similar patient safety evaluations. System quality scores of employees who work constant day shifts were significantly lower than those who work shifts. It should be noted that the evaluation made by day workers was lower because this group is thought to use a more systematic approach. Adverse event assessment scores of employees who work constant day shifts were significantly lower than those who work day shifts and sometimes night shifts. It can be said that day workers are more tolerant in means of reporting adverse events and that they report such events on a rare basis.

Patient safety factors did not show significant differences according to gender, working as a contract or permanent employee, marital status, age, education, job experience, hospital seniority, and work unit.

In a study by Singer et al. it was determined that the perception of patient safety changed from hospital to hospital and from employee to employee [22]. In a study conducted at state hospitals, it was found that employees' perception of patient safety was low and that doctors' and nurses' perception of patient safety was similar [7]. In another study, it was determined that there is a significant relationship between the frequency of reporting adverse events and level of patient safety [11]. In another study, it was found that patient falls, transfusion safety, surgical safety, and medicine safety were among the events encountered in means of patient safety, that the majority of the participants did not report the adverse events they encountered, and that some participants had drawbacks in means of reporting adverse events [12]. Minimizing drawbacks can bring the system into force. The concept of accusing and punishing within the institution prevents reporting of adverse events and can lead to negative outcomes in means of making the necessary improvements [5]. Accusations, fear, and keeping silent about adverse events are destructive in means of patient safety. Reporting adverse events should not be seen as the end of itself but as an opportunity to learn from these events and as the first step of preventing harm and of developing patient safety [3]. Administrators play an important role in preventing employees' drawbacks in means of reporting adverse events. Coyle et al. stress that positive changes occur in employees' attitudes and behaviors regarding the reporting of adverse events when they attend training programs [9]. Mwachofi et al. determined that less

observable adverse events, the skill of communicating suggestions, information technologies support and education, and a confidential reporting system had positive effects on the development of patient safety [15]. Manser also showed that team work plays an important role in the prevention of adverse events. In addition, safety related leadership and management attitudes play important roles in the development of a grown patient safety system [14]. The safety system requires information culture. An information culture is open to the information provided by adverse events and is independent from accusations. Adverse events reporting systems constitute the basis for reporting culture and involve the maintenance of positive information flow which is used for promoting and supporting behaviors including problem solving, innovation, and cooperation between departments. The free flow of information is crucial. Increasing quality of personnel by creating systematic learning opportunities can be the most important investment in means of patient safety [23].

Studies show that constantly developing patient safety and adverse events is recently receiving attention. However, it is known that patient safety has not completely developed yet.

5. Conclusions

Developing patient safety should be prioritized by administrators at ODHCs as well as other health institutions. Administrators should understand the factors that affect employees' perceptions of patient safety and provide solutions to problems. It should be provided that employees working at these centers can report adverse events without having fears of punishment. Continuing education programs on patient safety should be provided for employees while adopting the principle of lifelong learning. Engaging in team work should be encouraged and an institutional patient safety culture should be formed. More research on patient safety should be conducted in a continuous fashion and improving precautions should be taken in accordance with research findings.

As it can be expected, this research wiil increase awareness of health professionals about patient safety and to support managerial decision making process for preventing occurrence of advers events.

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