



Factors Affecting Nurses' Patient Safety Culture and Job Satisfaction: A Comparative Study

Hemşirelerin Hasta Güvenliği Kültürünü ve İş Doyumunu Etkileyen Faktörler: Karşılaştırmalı Bir Çalışma

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ABSTRACT

Aim: This study was conducted to comparatively analyze factors affecting nurses' patient safety culture and job satisfaction.

Material and Method: This was a descriptive and cross-sectional study. The study sample comprised 260 nurses of two state hospitals and one university hospital in TRA2 in northeastern Turkey. Data were collected between August 2017 and March 2018. Data were collected using a Demographic Information Form, the Patient Safety Culture Scale and Job Satisfaction Scale in Nurses. ANOVA (F) and t test and the Mann-Whitney U and Kruskal-Wallis H tests were used for data analysis. Total scale score and subscale mean scores were also calculated. A correlation analysis was performed between nurses' patient safety culture and job satisfaction.

Results: The total Patient Safety Culture Scale and Job Satisfaction Scale mean scores were calculated respectively as 2.78±0.47 and 3.34±0.68. There was a statistically significant difference in Patient Safety Culture Scale and Job Satisfaction Scale scores between groups in terms of the independent variables "choosing the nursing profession of their own free will," "departmental position" and "skills-job match" (p<0.05). Also, a moderate and positive correlation was detected between nurses' job satisfaction and patient safety culture (p=0.000, r=0.598).

Conclusion: Thirty-one independent variables affecting nurses' patient safety and job satisfaction were identified. It was concluded that nurses who have a high patient safety culture have high job satisfaction.

Key words: job satisfaction; nursing; patient safety; quality of care

ÖZET

Amaç: Bu araştırma, hemşirelerde hasta güvenliği kültürünü ve iş doyumunu etkileyen faktörlerin karşılaştırmalı analizini yapmak amacıyla gerçekleştirilmiştir.

Materyal ve Metot: Araştırma tanımlayıcı-kesitsel olarak yapılmıştır. Araştırmanın örneklemini Türkiye'nin Kuzeydoğusunda TRA2'de yer alan iki devlet hastanesinde ve bir üniversite hastanesinde çalışan 260 hemşire oluşturmuştur. Çalışmanın verileri, Ağustos 2017 ile Mart 2018 tarihleri arasında toplanmıştır. Araştırma verileri "Tanıtıcı Özellikler Formu", "Hasta Güvenliği Kültürü Ölçeği" ve "Hemşirelerde İş Doyumu Ölçeği" kullanılarak elde edilmiştir. Veri analizinde parametrik testlerden Anova (F) ve t-Testi, non-parametrik testlerden Mann Whitney U ve Kruskal Wallis H testleri kullanılmıştır. Ayrıca ölçek toplam puan ve ölçek alt boyut puan ortalamaları hesaplanmıştır. Bunların yanı sıra "Hasta Güvenliği Kültürü" ile "Hemşirelerde İş Doyumu" arasındaki ilişkiye korelasyon analizi ile bakılmıştır.

Bulgular: Toplam puan ortalaması Hasta Güvenliği Kültürü Ölçeğinde 2,78±0,47, Hemşirelerde İş Doyumu Ölçeğinde ise 3,34±0,68 olarak hesaplanmıştır. Araştırmada ele alınan bazı bağımsız değişkenlerden "hemşirelik mesleğini seçme durumuna", "çalıştığı bölümdeki pozisyonuna" ve "işini yeteneklerine uygun bulma durumuna" göre Hasta Güvenliği Kültürü Ölçeği ve Hemşirelerde İş Doyumu Ölçeği her ikisinde de gruplar arasındaki fark istatistiksel olarak anlamlı bulunmuştur (p<0,05). Ayrıca hasta güvenliği kültürü ile iş doyumunu arasında pozitif yönlü bir ilişki saptanmıştır (p=0,000, r=0,598).

Sonuç: Hemşirelerde hem hasta güvenliği kültürünü hem de iş doyumunu 31 bağımsız değişkenin etkilediği saptanmıştır. Yüksek hasta güvenliği kültürüne sahip olan hemşirelerin iş doyumlarının da yüksek olduğu sonucuna ulaşılmıştır.

Anahtar kelimeler: bakım kalitesi; hasta güvenliği; hemşirelik; iş doyumunu

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Introduction

Despite recent technological advances and an increase in the number of treatment and care facilities and of scientific studies, patient safety remains a major problem in the healthcare system¹. The report titled “To Err is Human: Building a Safer Health System” released by the U. S. Institute of Medicine (IOM) in 1999 defines patient safety as “the prevention of harm to patients”². According to the World Health Organization (WHO), one in ten patients in Europe is exposed to an avoidable injury or an adverse event in hospitals¹. Annually, 421 million people receive inpatient care and approximately 42.7 million adverse events occur. Recent research shows that patient harm due to hospital care is the fourteenth cause of mortality and morbidity in the world³. Baker et al.⁴ reported that 7.5% of adverse events occur in hospitals in Canada and that 37% of them is preventable. Not only does this cause a variety of problems for patients and their families and for healthcare professionals, it is also a serious economic burden on the health system¹. Patient safety, therefore, remains to be an issue that should be addressed by both organizations and the community⁵. According to the document that was most recently revised in 2012 by the International Council of Nurses, patient safety is the key element in the provision of high-quality healthcare and nursing care⁶. Such issues as cost-effectiveness and quality care, early discharge and the care burden for patients with acute and chronic diseases are becoming more and more important in all healthcare systems worldwide. The increasing changes and expectations in healthcare delivery affect quality of care, nurses’ job satisfaction and patients’ perceptions of care⁷. Some of the environmental/organizational factors affecting job satisfaction in the existing literature are job quality, salary, staff safety, developmental and promotional opportunities, working conditions, management style, reward systems and relationships in the work environment^{8–10}. Higher job satisfaction in nurses results in higher morale, higher institutional and occupational commitment, safe and higher quality of care and motivates nurses to continue to remain in the nursing profession¹¹. Nurses’ job satisfaction is an essential factor for nursing care institutes, which affects not only nursing quality but also patient satisfaction¹².

Aim

This study aimed to determine the factors affecting nurses’ patient safety culture and job satisfaction and the correlation between the two.

The study sought answers to the following questions:

What are the independent variables that affect nurses’ patient safety culture?

What are the independent variables that affect nurses’ job satisfaction?

Is there a correlation between nurses’ patient safety culture and job satisfaction?

Methods

Study Design

This was a descriptive and cross-sectional study.

Study Setting and Sample

The study population comprised 425 nurses from two state hospitals and one university hospital in TRA2 (Ağrı, Kars, Ardahan, Iğdır) in northeastern Turkey. This study applied no specific sampling method. Nurses who volunteered to participate in the study were included in the sample. Of the nurses, 317 were contacted and informed about the purpose and procedure of the study prior to participation. Of these, 44 nurses did not agree to participate, and 13 nurses failed to complete the data collection form. Therefore, the final study sample consisted of 260 (61.2%) nurses.

$$n = \frac{Nt^2pq}{d^2(N-1) + t^2pq} = \frac{425 \times (1,96)^2 \times 0,5 \times 0,5}{(0,05)^2 \times 424 + (1,96)^2 \times 0,5 \times 0,5} = 202$$

Data Collection Tools

Data were collected using three forms: 1) Demographic Information Form (DIF); 2) Patient Safety Culture Scale (PSCS); and 3) Job Satisfaction Scale in Nurses (JSSN).

Demographic Information Form (DIF)

The original form of the DIF consisted of 26 open-ended questions eliciting information on institution, age, gender, marital status, educational degree, unit of service, skills-job match, institutional quality works and receiving training on quality.

Patient Safety Culture Scale (PSCS)

The PSCS was developed and its validity and reliability was established by Türkmen et al.¹³. It is a four-point Likert-type scale consisting of 51 items. It has five subscales: 1) management and leadership;

2) employee behavior; 3) unexpected events and error reporting; 4) employee training; and 5) care environment. The mean scores of the total scale and its subscales are calculated for assessment. A mean score of ≤ 2 indicates negative patient safety culture while a mean score of ≥ 2 indicates positive patient safety culture. The reliability coefficient (Cronbach's alpha) of the PSCS was found to be 0.97¹³.

Job Satisfaction Scale in Nurses (JSSN)

The JSSN was developed by Muya et al in Japan in 2014. It was adapted to the Turkish language, and its validity and reliability were established by Yilmaz and Yildirim¹⁴. It is a five-point Likert-type scale consisting of 27 items and four subscales: 1) positive emotions toward work; 2) appropriate support from superiors; 3) perceived significance in the workplace; and 4) pleasant working environment. The mean scores of the 27 items and the subscales are calculated for assessment. The closer the score is to five, the higher the job satisfaction. The Cronbach's alpha coefficient of the scale was determined to be 0.94¹⁴.

Data Collection

The data were collected between August 1, 2017 and March 9, 2018. Data collection sessions were scheduled at the participants' convenience. Head nurses were informed prior to data collection. Participants were asked to complete the data collection form in the presence of the researcher. In the event that we could not contact a participant in order to collect the data, we were able to learn the work days and hours of these nurses off the shift list and scheduled appointments for data collection at their convenience. Day and time appointments were taken from the nurses who were not available at the time, and the data were collected.

Data Analysis

The gathered data were analyzed using the IBM Statistical Package for Social Sciences (SPSS) for Windows Version 20.0. DIF frequencies were calculated. The PSCS and JSSN total score and subscale scores were calculated for each participant. The Kolmogorov-Smirnov (*KS*) test was used to determine whether the data met the assumptions for parametric tests. ANOVA (*F*) and *t* test (*t*) were used for normally distributed data whereas the Kruskal-Wallis *H* (*KW*) and Mann-Whitney *U* (*Z*) tests were used for non-normally distributed data. Bivariate Spearman's correlation was

used to determine the correlation between nurses' patient safety culture and job satisfaction. For the significance level of statistical tests, $p < 0.05$ value is accepted.

Ethical Considerations

The study was approved by the Ethics Committee of the Faculty of Medicine of *** University (No: 80576354-050-99/89, Date: April 27, 2017). Written permission was obtained from the hospital management as well. All articles of Helsinki Declaration Principles were complied with in the research.

Nurses who voluntarily participated were informed about the purpose and procedure of the study, and they declared verbal consent to participate. In addition, written permission was obtained from the authors of the PSCS and the JSSN in order to use them as data collection tools in this study.

Results

Table 1 shows the participants' mean PSCS and JSSN total score and subscale scores, respectively. In this study, the internal consistency coefficients (Cronbach's alpha) of the PSCS and JSSN were 0.95 and 0.91, respectively. There was a moderate and positive correlation between the PSCS and JSSN scores ($p = 0.000$, $r = 0.598$).

Table 1. Participants' mean PSCS and JSSN total score and subscale

Scores	
	X [†] ± SD [‡] (min-max)
PSCS total score	2.78±0.47 (1.12-4)
Subscales	
Management and leadership	2.77±0.54 (1-4)
Employee behavior	2.82±0.53 (1-4)
Unexpected events and error reporting	2.75±0.57 (1-4)
Employee training	2.82±0.60 (1-4)
Care environment	2.75±0.57 (1-4)
X [†] ± SD [‡] (min-max)	
JSSN total score	3.34±0.68 (1.30-5)
Subscales	
Positive emotions toward work	3.46±0.73 (1.5-5)
Appropriate support from superiors	3.13±1.22 (1-5)
Perceived significance in the workplace	3.80±0.70 (1.5-5)
Pleasant working environment	2.67±0.97 (1-5)

† SD; standard deviation; ‡ X; mean; PSCS; patient safety culture scale; JSSN; job satisfaction scale in nurses.

Table 2 shows the participants' demographic and job-related characteristics, respectively. When the PSCS and JSSN scores for the subscales "spending enough time with family" and "personality type (Type A or Type B)" were compared, it was found that the difference between the groups was statistically significant ($p < 0.05$). When the PSCS and JSSN scores for the subscales "choosing to be a nurse," "departmental position," "skills-job match," "participation in decision-making in the workplace," "loving being a nurse," "considering quitting" and "re-choosing nursing" were compared, it was found that the difference between the groups was statistically significant ($p < 0.05$).

Table 3 shows the participants' satisfaction with some working conditions based on their PSCS and JSSN scores. When the participants' PSCS and JSSN scores for the subscales "working hours and shifts," "division of tasks," "workload," "work pace," "number of nurses," "number of physicians," "number of patients," "interpersonal relationships in the workplace," "the institution they work for," "the unit in which they work," "training programs provided for patient safety" and "income" were compared, it was found that the difference between the groups was statistically significant ($p < 0.05$).

The participants' responses to questions on patient safety and quality. When the PSCS and JSSN scores for the subscales "presence of a patient safety committee in the institution," "having received training on patient safety before," "receiving training on patient safety in the institution," "wishing to serve on the patient safety committee," "finding the patient safety committee necessary," "reading the announcements on patient and staff safety," "receiving training on teamwork," "participating in staff orientation," "knowing about total quality management studies" and "receiving training on quality" were compared, it was found that the difference between the groups was statistically significant ($p < 0.05$).

Discussion

Research shows that patient safety and job satisfaction were found to affect each other¹⁵⁻¹⁷. However, no studies have been conducted so far on the issue in Turkey. Also, this is the most comprehensive study dealing with a large number of independent variables on national and international PSCS and JSSN issues.

The participants' total PSCS mean score was 2.78 ($SD=0.47$), suggesting the presence of positive patient safety culture. According to Türkmen et al.¹³, a PSCS score above two indicates the presence of positive patient safety culture. Research shows that mean PSCS scores range from one to four, and therefore, some studies report higher PSCS scores¹⁸⁻²⁰, while others report lower scores^{21,22} than those of the participants in this study.

In a study conducted at two private hospitals in Istanbul, Turkey, which apply the Quality Standards in Health of the Turkish Ministry of Health¹⁸, reported a mean PSCS score of 3.00 ($SD=0.53$), which is higher than that of the participants in this study. The hospitals in TRA2 in northeastern Turkey, where this study was conducted, lack some quality standards. Furthermore, have high labor turnover due to their location and geographical characteristics, which might explain the difference between the results of this study and those of Karaca and Arslan's study. On the other hand, Rizalar et al.²² reported a mean PSCS score of 2.64 ($SD=0.43$), which is lower than that of the participants. In this study, more than 70% of the participants have received training on patient safety culture before, whereas it was about 50% in²² study, which might account for the difference.

Moreover, in this study, the lowest PSCS subscale scores were found in "unexpected events and error reporting" and "care environment" (2.75; $SD=0.57$) while the highest were found in "employee behavior" (2.82; $SD=0.53$) and "employee training" (2.82; $SD=0.60$). Karaca and Arslan¹⁸, Ertürk et al.¹⁹, Rizalar et al.²² and Yolcu et al.²¹ reported similar results. The nurses' PSCS subscale scores for "unexpected events and error reporting" was the lowest in the studies of Karaca and Arslan¹⁸ and Ertürk et al.¹⁹, while their PSCS subscale scores for "unexpected events and error reporting" and "care environment" were the lowest in Rizalar et al.²². Karaca and Arslan¹⁸ and Ertürk et al.¹⁹ reported the highest scores in the PSCS subscale "employee training" while Rizalar et al.²² reported the highest score in the PSCS subscale "employee behavior", which is similar to this study's results. In Yolcu et al.²¹, the nurses' PSCS subscale scores for "care and technology" and "employee behavior" were the lowest and the highest, respectively. Gündoğdu and Bahçecik²³ found that approximately 70% of nurses did not report any errors in their units in the last year. This indicates that managers of health institutions should encourage their staff

Table 2. Distribution of participants' PSCS and JSSN scores depending on their demographic and job-related characteristics

Characteristics	n (%)	PSCS		JSSN	
		Median (S. E. *)	p**	Median/Mean (S.E.*)	p**
Gender					
Woman	231 (88.8)	2.80 (0.031)	0.880	3.33 (0.045)	0.525
Man	29 (11.2)	2.80 (0.092)	Z=-0.151	3.42 (0.131)	t=-0.637
Marital status					
Married	135 (51.9)	2.82 (0.040)	0.348	3.40 (0.056)	0.174
Single	125 (48.1)	2.78 (0.043)	Z=-0.938	3.28 (0.064)	t=1.363
Degree					
Vocational school of health	50 (19.2)	2.75 (0.064)	0.777	3.24 (0.084)	0.343
Associate	72 (27.7)	2.80 (0.047)	KW=1.098	3.40 (0.079)	F=1.115
Bachelor's	123 (47.3)	2.80 (0.046)		3.32 (0.066)	
Master's	15 (5.8)	2.84 (0.142)		3.57 (0.152)	
Spending enough time with family					
Yes	73 (28.1)	2.92 (0.056)	0.002	3.68 (0.069)	0.000
No	187 (71.9)	2.76 (0.034)	Z=-3.058	3.21 (0.049)	t=5.280
Self-reported personality type					
Type A (ambitious, impatient, etc.)	149 (57.3)	2.76 (0.039)	0.035	3.27 (0.059)	0.045
Type B (relaxed, patient, etc.)	111 (42.7)	2.84 (0.043)	Z=-2.114	3.44 (0.059)	t=-2.014
Choosing to be a nurse					
Willingly	170 (65.4)	2.82 (0.033)	0.008	3.46 (0.051)	0.000
Unwillingly	90 (34.6)	2.67 (0.055)	Z=-2.637	3.12 (0.071)	t=3.904
Departmental position					
Nurse	212 (81.5)	2.78 (0.032)	0.011	3.29 (0.047)	0.014
Head nurse	38 (14.6)	2.85 (0.074)	KW=9.003	3.55 (0.113)	KW=8.538
Supervisor Nurse/Assistant nursing service manager/Others	10 (3.9)	3.21 (0.112)		3.67 (0.179)	
Staff position					
Permanent	174 (66.9)	2.78 (0.036)	0.295	3.33 (0.053)	0.737
Contracted	86 (33.1)	2.82 (0.050)	Z=-1.047	3.36 (0.071)	t=-0.336
Unit of service					
Clinic/Service	147 (56.5)	2.80 (0.040)	0.349	3.33 (0.060)	0.415
Intensive care/Emergency/Operating room	71 (27.3)	2.76 (0.046)	KW=4.447	3.36 (0.061)	F=0.987
Management/Admin.	5 (1.9)	3.14 (0.107)		3.45 (0.224)	
Polyclinic	10 (3.9)	2.76 (0.210)		2.97 (0.190)	
Others	27 (10.4)	2.78 (0.109)		3.45 (0.161)	
Skills-job match					
Always	121 (46.5)	2.90 (0.041)	0.000	3.52 (0.060)	0.000
Sometimes	47 (18.1)	2.69 (0.065)	KW=26.762	3.11 (0.101)	F=6.185
Never	4 (1.5)	2.47 (0.172)		2.51 (0.411)	
Often	77 (29.7)	2.80 (0.051)		3.29 (0.073)	
Rarely	11 (4.2)	2.43 (0.141)		2.99 (0.149)	
Participation in decision-making in the workplace					
Always	141 (54.2)	2.86 (0.039)	0.006	3.43 (0.055)	0.003
Sometimes	96 (36.9)	2.78 (0.046)	KW=10.345	3.32 (0.067)	F=6.124
Never	23 (8.9)	2.55 (0.115)		2.90 (0.165)	
Working on weekends					
Yes	198 (76.2)	2.80 (0.033)	0.946	3.31 (0.048)	0.229
No	62 (23.8)	2.81 (0.065)	Z=-0.068	3.43 (0.088)	t=-1.205
Shifts					
Yes	187 (71.9)	2.80 (0.035)	0.544	3.29 (0.051)	0.079
No	73 (28.1)	2.82 (0.055)	Z=-0.607	3.46 (0.076)	t=-1.762
Loving the profession					
Yes	187 (71.9)	2.88 (0.033)	0.000	3.50 (0.046)	0.000
No	73 (28.1)	2.59 (0.055)	Z=-4.904	2.93 (0.074)	t=6.461
Considering quitting					
Yes	84 (32.3)	2.71 (0.052)	0.016	3.14 (0.077)	0.001
No	176 (67.7)	2.83 (0.035)	Z=-2.412	3.44 (0.049)	t=-3.309
Re-choosing to be a nurse					
Yes	77 (29.6)	2.90 (0.054)	0.002	3.66 (0.068)	0.000
No	183 (70.4)	2.76 (0.034)	Z=-3.052	3.21 (0.050)	t=5.114
Finding the profession stressful					
Yes	237 (91.2)	2.80 (0.031)	0.660	3.35 (0.044)	0.314
No	23 (8.8)	2.92 (0.105)	Z=-0.440	3.20 (0.156)	t=1.010
Mean age		28.64±7.36 (min: 19, max: 58)			

*S.E.; Standard error; **p<0.05; PSCS; patient safety culture scale; JSSN; job satisfaction scale in nurses.

Table 3. Distribution of participants' PSCS and JSSN scores depending on their satisfaction with some working conditions

Satisfied with	n (%)	PSCS		JSSN	
		Median (S. E. *)	p**	Median/Mean (S.E. *)	p**
Working hours and shifts					
Yes	125 (48.1)	2.88 (0.041)	0.002	3.63 (0.057)	0.000
No	135 (51.9)	2.75 (0.041)	Z=-3.029	3.19 (0.054)	Z=-6.165
Division of tasks					
Yes	134 (51.5)	2.92 (0.038)	0.000	3.63 (0.050)	0.000
No	126 (48.5)	2.71 (0.041)	Z=-4.949	3.03 (0.058)	t=7.760
Workload					
Yes	70 (26.9)	2.97 (0.059)	0.000	3.70 (0.070)	0.000
No	190 (73.1)	2.75 (0.032)	Z=-4.609	3.21 (0.048)	t=5.469
Work pace					
Yes	102 (39.2)	2.94 (0.046)	0.000	3.62 (0.059)	0.000
No	158 (60.8)	2.73 (0.036)	Z=-4.029	3.16 (0.054)	t=5.715
Number of nurses					
Yes	49 (18.8)	2.96 (0.071)	0.002	3.93 (0.086)	0.000
No	211 (81.2)	2.76 (0.031)	Z=-3.030	3.30 (0.045)	Z=-5.079
Number of physicians					
Yes	143 (55.0)	2.90 (0.040)	0.000	3.47 (0.056)	0.001
No	117 (45.0)	2.75 (0.041)	Z=-3.750	3.19 (0.062)	t=3.354
Number of patients					
Yes	108 (41.5)	2.96 (0.049)	0.000	3.61 (0.062)	0.000
No	152 (58.5)	2.74 (0.034)	Z=-4.344	3.15 (0.053)	t=5.639
Interpersonal relationships in the workplace					
Yes	187 (71.9)	2.84 (0.036)	0.003	3.46 (0.047)	0.000
No	73 (28.1)	2.71 (0.044)	Z=-2.948	3.03 (0.081)	t=4.705
Working for the institution					
Yes	137 (52.7)	2.96 (0.039)	0.000	3.64 (0.048)	0.000
No	123 (47.3)	2.67 (0.039)	Z=-6.394	3.00 (0.059)	t=8.464
Working in unit/service/department					
Yes	197 (75.8)	2.86 (0.035)	0.000	3.48 (0.045)	0.000
No	63 (24.2)	2.69 (0.046)	Z=-3.997	2.89 (0.084)	t=6.417
Training on patient safety					
Yes	152 (58.5)	2.94 (0.034)	0.000	3.54 (0.049)	0.000
No	108 (41.5)	2.54 (0.043)	Z=-7.034	3.06 (0.066)	t=6.040
Income					
Yes	80 (30.8)	2.94 (0.059)	0.000	3.66 (0.074)	0.000
No	180 (69.2)	2.75 (0.032)	Z=-3.902	3.20 (0.048)	t=5.200

*S.E.; Standard error; **p<0.05; PSCS; patient safety culture scale; JSSN; job satisfaction scale in nurses.

to report errors and unexpected events. Furthermore, nurses are thought not to have enough knowledge of safety precautions related to care environments.

Yilmaz and Yildirim¹⁴ state that the closer the JSSN score is to five, the higher the job satisfaction. The participants' mean JSSN score was 3.34 ($SD=0.68$), indicating an above-average job satisfaction. Research

shows that mean JSSN scores range from one to five, and therefore, some studies reported higher JSSN scores¹⁴, while others reported lower scores^{24,25} than those of the participants in this study. Yilmaz and Yildirim¹⁴ reported a mean JSSN score of 4.00 ($SD=0.56$), which is higher than that of this study's participants. This might be due to the higher number

of high school graduate nurses in Yilmaz and Yildirim's study¹⁴. Yang et al.²⁴ reported a mean job satisfaction score of 2.51 ($SD=0.98$), which is lower than that of the participants of this study.

In this study, the lowest JSSN subscale score was found in "pleasant working environment" (2.67; $SD=0.97$) and the highest in "perceived significance in the workplace" (3.80; $SD=0.70$). The results reported by Yilmaz and Yildirim¹⁴ are similar to this study's results. The subscale "pleasant working environment" consists of items about taking into consideration individual circumstances, balancing work and private life, having an appropriate number of personnel, receiving a sufficient salary and requests for days off. The low "pleasant working environment" subscale score, therefore, suggests that participants' expectations regarding these matters are not met. Since 2016, when the JSNN was adapted to the Turkish language and its validity and reliability were established, there have been no further studies using the scale.

There is a positive correlation between the PSCS and JSSN total scores²⁶. Each independent variable that affects the PSCS also affects the JSSN, suggesting that there is a correlation between the two. There are no national studies, to the researchers' knowledge, that comparatively analyzes nurses' patient safety culture and job satisfaction; however, there are international studies that do^{15,16,27-30}. They report that the higher the nurses' job satisfaction, the better the patient outcomes and the higher the patient safety. They, therefore, recommend that attempts and interventions to improve patient safety culture also take into account levels of nurses' job satisfaction.

Participants who chose to be a nurse of their own free will, had higher departmental positions, always or often found their job appropriate to their skills and participate in decision-making in the workplace had higher PSCS and JSSN scores. Participants who were satisfied with working hours and shifts, division of tasks, workload and work pace, the number of nurses, the number of physicians and the number of patients, interpersonal relationships in the workplace, the institution they work for, the unit in which they work, and training programs provided for patient safety and income had higher PSCS and JSSN scores. Participants who love being a nurse, do not consider quitting, serve on the patient safety committee, have received training on patient safety in the institution they work for or before, consider the presence

of a patient safety committee necessary, have participated in staff orientation and received training on teamwork and quality, spend enough time with their families, state that they would choose to be a nurse if they were given the chance, read the announcements on patient and staff safety, know about total quality management studies, had a high-quality education and have a Type B personality had higher PSCS and JSSN scores.

When the PSCS and JSSN scores for the independent variables stated above were compared, it was found that the difference between the groups was statistically significant ($p<0.05$). National or international studies have investigated the effects of a limited number of variables on nurses' patient safety culture and job satisfaction. No national or international studies have ever examined all of the independent variables that caused the significant differences observed in this study; therefore, the results are discussed in a limited context.

Wami et al.³¹ reported that patient safety culture is correlated with weekly working hours, number of staff, teamwork, good communication, unexpected events and error reporting and participating in patient safety training, which is similar to this study's results. Ball et al.¹⁵ reported that longer working hours showed a decline in patient safety. Alqattan et al.³² reported that nurses who took training or courses regarding patient safety had significantly higher patient safety culture than those who did not. Dinçer³³ found that receiving training on quality increases patient safety culture.

Tilev and Beydağ¹¹ reported that the higher the number of working hours, the lower the job satisfaction, while Çalişkan³⁴ found that those who chose to be a nurse of their own free will have higher overall job satisfaction. Tambağ et al.³⁵ found that nurses who are satisfied with their department have higher job satisfaction than those who are not. Lorber and Savic¹² reported that head nurses who are involved in decision-making in the workplace and satisfied with working hours have higher job satisfaction than the ones who are not satisfied with working hours. Nurses who love their profession work more effectively and efficiently, resulting in higher job satisfaction and patient safety culture.

Limitations

The results can only be generalizable to the nurses of the hospitals where this study was conducted.

Conclusion

There is a moderate positive relationship between nurses' patient safety culture and job satisfaction. It was concluded that nurses who have a high patient safety culture have high job satisfaction.

Patient safety culture in institutions should be systematically evaluated and interventions should be undertaken to improve it. Training programs should be organized to raise awareness of patient safety. Hospital managers should find ways to eliminate factors that reduce nurses' job satisfaction and to increase their motivation. Working environments and weekly working hours and shifts should be arranged to improve nurses' job satisfaction. Interventions should be initiated to encourage nurses to report unexpected errors and adverse events.

Conflict of Interest

There are no conflicts of interest to disclose.

Acknowledgments

We would like to thank all nurses who took the time to participate in this study.

Author Contributions

Study design: KO, AKA

Data collection: KO, AKA

Data analysis: KO, AKA

Manuscript writing: KO, AKA

Critical Review, and/or Revision: AKA

"This study was orally presented at the 1st International Congress on Innovative Approaches in Nursing in Turkey."

"This study was prepared from Kader Cifci' master thesis under the supervision of Assistant Professor Arzu Karabag Aydin."

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