THE EFFECT OF MENTAL HEALTH AND WORK PERFORMANCE LEVEL OF HOSPITAL EMPLOYEES ON OCCUPATIONAL HEALTH AND SAFETY CULTURE

Hastane çalışanlarının ruh sağlığı ve iş performans düzeyinin iş sağlığı ve güvenliği kültürü üzerine etkisi

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Abstract

In this study, it is aimed to determine the relationship between mental health and work performance levels of hospital employees and occupational health and safety culture. The study is cross-sectional, and was conducted in 2022 among employees of a university hospital. No sample selection was made in the study, and the study was conducted with 208 people who agreed to participate in the study. Data were collected using a socio-demographic questionnaire, Occupational Health and Safety Culture (OHSC) scale, Depression-Anxiety-Stress Scale (DASS-21) and Work Performance Scale (WPS). Data were evaluated by ANOVA, correlation and linear regression analysis. Of the employees, 33.7% stated that their duration of work in the institution is less than 3 years, 84.6% of them received in-service training about OHSC, and 41.3% of them stated that their knowledge about OHSC is sufficient. In order of importance, the OHSC total score average is increased by decreasing the duration of work in the institution (β= -0.352), receiving in-service training at OHSC (β=0.209), increasing work performance (β=0.190) and working as medical staff (β=0.183) ($p<0.05$), while depression, anxiety, stress, age, gender, marital status, income level, health perception, and received OHS training were not found statistically significant ($p>0.05$). The OHS culture level of the hospital employees is medium, and the increase in work performance is to increase the OHSC level. No relationship was found between OSHC and mental status. Hospital administrations should implement policies that increase the OHS culture and work performance in the institution.

Keywords: Occupational health and safety culture, work performance, mental health.

Özet

Bu çalışmada hastanede çalışanların ruh sağlıkları ve iş performans düzeyleri ile iş sağlığı ve güvenliği kültürü arasındaki ilişkiyi tespit etmek amaçlanmaktadır. Çalışma kesitsel türde olup bir üniversite hastanesinde çalışanlar arasında 2022 yılında yapılmıştır. Çalışmada örneklem seçimi yapılmamış olup çalışmaya katılmayı kabul eden 208 kişi ile çalışma yapılmıştır. Veriler, sosyo-demografik anket formu, İş Sağlığı ve Güvenliği Kültürü (İSGK) ölçeği, Depresyon-Anksiyete-Stres Skalası (DASS-21) ve İş Performans (İP) ölçeği kullanılarak toplanmıştır. Veriler, Anova, korelasyon ve lineer regresyon analizleri ile değerlendirilmiştir. Çalışmaya katılanların %33,7'si kurumda çalışma süresinin 3 yıldan az olduğunu, %84,6'sı İSGK hakkında hizmetiçi eğitim aldığını ve %41,3'ü İSGK hakkında bilgisinin yeterli olduğunu ve belirtmiştir. İSGK toplam puan ortalamasını önem sırasına göre, kurumdaki çalışma süresinin azalması (β=-0,352), İSGK hizmet içi eğitim almak (β=0,209), iş performansının artması (β=0,190) ve sağlık personeli olarak çalışmak (β=0,183) artırırken ($p<0,05$), modele alınan depresyon, anksiyete, stres, yaş, cinsiyet, medeni durum, gelir düzeyi, sağlık algısı ve İSG eğitimi alma durumları istatistiksel olarak önemli bulunmamıştır ($p>0,05$). Hastane çalışanlarının İSGK düzeyi orta olup, iş performansının artması İSGK düzeyini artırmaktır. İSGK ile ruhsal durum arasında bir ilişki saptanmamıştır. Hastane yönetimleri kurumda İSG kültürünü ve iş performansını yükseltici politikalar uygulamalıdır.

Anahtar kelimeler: İş sağlığı ve güvenliği kültürü, iş performansı, ruh sağlığı.

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Introduction

People, who are social beings, always have the possibility of encountering a problem in every environment they are in. People spend most of their time at work, which includes physical and social environments where individuals gather, depending on the nature of their work, it has significant effects (1). Therefore, the physical condition of the workplace and the suitability of its conditions are very important for employees physically and mentally. Ensuring a healthy and safe working environment is not only positive for the employee's health and safety but also important for positively affecting their work productivity (2).

Regulations within the framework of Occupational Health and Safety (OHS) perspective also include the regulation of the working environment as one of the fundamental tasks (1, 3). Individuals who spend many hours of their day at work can feel happier in environments designed to be OHS compliant and enjoyable to work in (3). Hospitals are considered as very dangerous workplaces that provide 24/7 service. Shift work, every other day shifts, workload, and disrupted sleep patterns due to night shifts are factors that can affect the mental health of employees. The hazards and risks that affect the health of healthcare workers are grouped into biological, physical, ergonomic, chemical, and psychosocial categories. The National Institute for Occupational Safety and Health (NIOSH) reported that there are 29 types of physical, 25 types of chemical, 24 types of biological, 6 types of ergonomic, and 10 types of psychosocial hazards and risks in hospitals (4). Therefore, the regulation of working conditions, working areas, rest periods, and annual leave for hospital workers is essential for them to feel healthy and happy while performing their works (5). Mental health plays a significant role in an individual's overall well-being and work performance. High levels of stress, anxiety, or burnout can negatively affect an employee's ability to concentrate, make decisions, and perform tasks effectively. Consequently, compromised mental health may lead to decreased work performance and productivity (6). Work performance is defined as all behaviors and activities under individuals' control that contribute to organizational objectives (7).

Necessary regulations for providing a healthy working environment for employees have been detailed in the field of OHS, emphasizing the importance of the work environment. The physical and psychological suitability of the work environment is the most crucial factor in preventing work accidents and occupational diseases, in addition to individual enjoyment for employees. In the context of OHS culture, employees' mental health can influence their perceptions, attitudes, and behaviors related to safety. When individuals are mentally well, they are more likely to be attentive, focused, and compliant with safety protocols. They may exhibit proactive behaviors, such as reporting hazards and participating in safety initiatives. Conversely, poor mental health can contribute to distractions, fatigue, and increased risk-taking behaviors, which can compromise safety and undermine the OHS culture within a hospital (8). The physical suitability of the work environment can only be achieved by the development of safety culture, which includes the participation of individuals and the necessary precautions. Safety culture is a complex framework that encompasses all national, professional approaches and values that groups and individuals work with (9). In other words, safety culture is a combination of roles, norms, beliefs, attitudes, and social and technical practices developed to eliminate situations that can be harmful or dangerous for employees in their work environment (10).

The aim of this study is to examine the impact of hospital employees' mental health and work performance on OHS culture. The fact that no study has been found in the literature examining these three factors increases the importance of our study. The impact of hospital employees' mental health and work performance on OHS culture is a critical area of study. Understanding the relationship between these factors is essential for promoting a safe and healthy work environment in healthcare settings.

Material and Method

Type of Research

This study is cross-sectional type.

Population and Sampling

The research was conducted among the employees of Yozgat Bozok University Health Practice and Research Hospital in July-August 2022. A total of 638 people work in the hospital. The actual number of employees may be even less because some of them are on leave or on a report. The minimum sample size for the study was calculated using GPower 3.1 program. To perform a linear regression analysis considering 5 factors, such as the OHS culture score of hospital employees, length of employment, age, occupation, and gender, the effect size was determined as R^2=0.15, type-I error α=0.05, and power 1-β=0.95, resulting in a minimum sample size of n=138. Sample selection was not made for the study, and the research was completed with the participation of 208 employees who agreed to participate. The rate of participation in the research was 32.6%. Questionnaire forms were administered online to the employees who agreed to participate in the study. The survey form link was sent to everyone working in the hospital via email and WhatsApp. In addition, employees were visited and asked to participate in the study.

Data Collection Methods

Socio-Demographic Questionnaire form

The survey was composed of 9 questions prepared by the researchers to determine the socio-demographic characteristics of the employees.

Occupational Health and Safety Culture Scale (OHSC)

The validity and reliability of the scale were conducted by Olçay in 2021. The scale consists of 19 items rated on a 7-point Likert scale ranging from "Strongly Disagree (1)" to "Strongly Agree (7)". The items were categorized into 3 main groups: "General OHS Awareness", "OSH Training-Communication", and "Risk Awareness". Cronbach's alpha was found to be 0.89 (11). In this study, the scale's Cronbach's alpha coefficient was found to be 0.933.

Work Performance Scale (WPS)

The scale was developed by Kırkman and Rosen in 1999 (12). Updated in 2000 by Sigler and Pearson (13). Translated by Avunduk in 2016. The scale consists of one dimension and 10 items in total. The answers are evaluated as a 5-point Likert. There is no reverse coding in the scale items. The Cronbach alpha reliability coefficient of the scale developed by Avunduk was found to be 0.911 (14). In this study, the WPS's Cronbach's alpha coefficient was found to be 0.933.

Depression-Anxiety-Stress Scale (DASS-21)

DASS-21 scale was developed by Lovibond and Lovibond. Adapted to Turkish by Sarıcam. It consists of 21 items from 3 sub-dimensions. In order to evaluate the last week, the sub-dimensions of Depression, Anxiety and Stress levels are composed of 7 questions each. Scored from never (0) to always (3). The sub-dimensions of the Cronbach's alpha coefficient obtained from the scale were found to be 0.87, 0.85, and 0.81, respectively (15, 16). In this study, the total DASS-21's Cronbach's alpha coefficient was found to be 0.955. Those who scored 7 and above in the depression subscale, 6 and above in the anxiety subscale, and 10 and above in the stress subscale were classified as having moderate or higher symptoms.

Statistical Analysis

The data were made using the SPSS 25 statistical package program. Descriptive tables of data have been made. The comparison of the arithmetic means of the scales according to the demographic characteristics was made with the t test and the ANOVA test. Nurse, midwife and emergency medical technician (EMT)

data were combined as a group in order to reach the sufficient number of data in multivariate statistical analyses. The effects of the socio-demographic characteristics, mental state and work performance of the employees on the OHS culture level were analyzed with the backward elimination model in linear regression (LR). OHS culture was taken as the dependent variable in the LR analysis. Among the independent variables, categorical variables such as gender, marital status, occupation, and getting OHS education were converted into dummy variables and analyzed. The variables found to be important as a result of the analysis are shown in the table. In statistical tests, the significance level was taken as $p<0.05$.

Ethical approval

Ethics committee approval was obtained from Yozgat Bozok University Ethics Committee with the decision dated 11/12/2021, numbered 27/29 E.74774320-605-44098. Before the research, necessary explanations were given to the participants, their consent was obtained by explaining that the information they provided would be kept confidential and would not be used elsewhere. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Results

Of the participants, 55.8% were women, 41.8% were in the 20-29 age group, 63.6% were married, 44.4% were undergraduates. Fourteen point four percent of them are postgraduate graduates, 53.8% of them are nurse-midwife- EMT, and 33.7% of them stated that the working period in the institution is less than 3 years. In addition, 84.6% of them stated that they received in-service training about OHS culture, 41.3% had sufficient knowledge about OHS culture and 93.8% received OHS training (Table 1).

The OHSC scale total score average of the participants in the study is 91.8±13.0, which is moderate ((91.8-19)/(133-19)x100=63.9). In the context of socio-demographic characteristics, an analysis of the average scores on the OHSC scale reveals statistically significant associations. Specifically, higher levels of education, those who do not work in auxiliary work, increased income levels, and participation in OHSC in-service training are all linked to higher OHSC scale scores ($p<0.05$). It was not found statistically significant according to gender, age groups, marital status, working time in the profession and in this institution, health perception, OHS knowledge level perception and OHS training status ($p>0,05$). According to the socio-demographic characteristics of the hospital staff, WPS mean scores were not found to be statistically significant ($p>0.05$) (Table 1).

According to the socio-demographic characteristics of the participants in the study, the mean score of the awareness sub-dimension of the OHSC scale (59.9±9.6) is above the average (60-12)-(84-12)x100=66.7). OHSC awareness score; It was found to be higher in those with higher education levels, those working as health personnel, and those with higher income levels, and it was found to be statistically significant ($p<0.05$). OHS education-communication sub-dimension mean score (19.5±3.4) was found to be higher only in those with an income level above 7000 TL ($p<0.05$). It was not found to be statistically significant compared to other characteristics ($p>0.05$). OHSC risk awareness sub-dimension mean score (12.5±3.7), It was found higher in women, those who perceive their health status as medium and above, those who state that they have knowledge about OHS culture, and those who receive in-service training on OHS culture ($p<0.05$) (Table 2).

Table 1: OHS culture total and work performance score averages according to the socio-demographic characteristics of hospital staff.

			OHSC			Work performance		
	Count	**Col.%**	**Mean**	**SD**	**p**	**Mean**	**SD**	**p**
Gender								
Female	116	55.8	93.1	10.8	0.114	40.4	6.6	0.987
Male	92	44.2	90.2	15.3		40.4	7.3	
Age Groups (Year)								
20-29	87	41.8	91.1	12.1		40.2	6.7	
30-39	83	39.9	93.6	12.1	0.239	40.9	6.6	0.699
≥ 40	38	18.3	89.7	16.4		39.9	7.9	
Marital Status								
Married	132	63.5	92.4	13.3	0.440	40.3	7.5	0.690
Single	76	36.5	90.9	12.5		40.7	5.7	
Education Level								
High school	61	29.3	87.7	14.5		40.1	7.9	
Associate Degree	24	11.5	88.0	21.2	**0.002**	42.0	4.7	0.567
Undergraduate	93	44.7	94.5	9.3		40.0	6.9	
Master's and Above	30	14.4	95.1	7.8		41.1	6.1	
Job								
Doctor	16	7.7	94.4	5.6		39.3	6.7	
Nurse / Midwife /EMT	112	53.8	93.7	11.5	**0.003**	39.8	7.3	0.297
Other Health Personnel	30	14.4	93.5	6.8		41.4	4.4	
Auxiliary Works	50	24.0	85.9	18.1		41.7	7.2	
Duration of work in the profession (Years)								
< 3	38	18.3	90.9	12.7		39.8	6.0	
3 - <5	40	19.2	93.7	8.6		40.1	7.8	
5- <10	42	20.2	89.5	15.2	0.502	41.5	5.9	0.796
10 - <15	51	24.5	91.5	15.1		40.2	6.8	
≥ 15	37	17.8	93.9	11.4		40.6	7.9	
Duration of work in the institution (Years)								
< 3	70	33.7	91.9	11.0		39.7	5.6	
3 - <5	45	21.6	94.1	7.9	0.471	40.5	7.7	0.258
5- <10	45	21.6	89.7	17.5		42.2	7.4	
≥ 10	48	23.1	91.7	14.6		39.9	7.2	
Income level (TL)								
< 7.000	30	14.4	83.6	19.4		39.6	8.3	
7.000-9.999	64	30.8	93.5	10.3		40.4	6.3	
10.000-14.999	93	44.7	92.6	12.4	**0.002**	40.8	7.1	0.821
≥ 15.000	21	10.1	95.0	5.7		39.9	5.7	
Health Status Perception								
Bad	10	4.8	87.7	12.6		43.5	6.3	
Middle	69	33.2	90.3	14.6	0.355	38.8	7.5	0.067
Good	102	49.0	93.3	11.7		41.0	6.6	
Very good	27	13.0	91.6	13.2		41.3	6.0	
OHS cultural knowledge asset								
Yes Sufficient	86	41.3	92.4	14.3		41.6	8.0	
Yes a little	114	54.8	91.7	12.2	0.650	39.7	5.8	0.083
No there's not	8	3.8	88.0	9.8		37.8	6.6	
OHS culture In-service training								
No	32	15.4	86.8	14.5	**0.035**	40.0	6.5	0.687
Yes	176	84.6	92.8	12.5		40.5	7.0	
Getting OHS training								
Yes	195	93.8	92.0	13.1		40.6	6.9	
No	13	6.3	90.0	11.1	0.599	38.3	6.3	0.250
Total	**208**	**100.0**	**91.8**	**13.0**		**40.4**	**6.9**	

OHSC: *Occupational Health and Safety Culture*

Table 2: OHSC scale sub-dimensions score averages according to the socio-demographic characteristics of hospital staff.

	OHSC-Awareness			OHSC-Education-contact			OHSC-Risk Perception		
	Mean	**SD**	**p**	**Mean**	**SD**	**p**	**Mean**	**SD**	**p**
Gender									
Female	60.4	7.8	0.415	19.7	3.1	0.327	13.1	3.5	**0.011**
Male	59.3	11.4		19.2	3.9		11.8	3.8	
Age Groups (Year)									
20-29	59.6	8.7		19.6	3.1		12.0	3.8	
30-39	61.2	8.6	0.174	19.8	3.3	0.203	12.6	4.0	0.161
≥40	57.7	12.9		18.6	4.2		13.3	2.3	
Marital Status									
Married	60.0	9.8	0.751	19.5	3.5	0.918	12.8	3.5	0.710
Single	59.6	9.3		19.4	3.4		11.9	4.0	
Education Level									
High school	48.8	22.2		17.2	6.3		12.3	3.7	
Associate Degree	56.2	15.2	**<0.001**	19.0	5.2	0.312	12.7	2.7	0.968
Undergraduate	62.0	6.7		19.9	2.9		12.6	4.1	
Job									
Master's and Above	62.9	5.0		19.8	2.1		12.5	3.1	
Doctor	63.7	5.0		19.2	1.2		11.4	3.3	
Nurse / Midwife /EMT	61.1	7.9	**<0.001**	19.8	3.3	0.219	12.8	3.8	0.561
Other Health Personnel	61.3	5.1		19.9	1.9		12.3	3.8	
Auxiliary Works	54.9	13.7		18.6	4.7		12.4	3.6	
Duration of work in the profession (Years)									
< 3	59.7	9.4		19.4	3.0		11.7	3.7	
3 - <5	61.0	6.1		20.2	2.8		12.5	3.7	
5- <10	58.1	11.1	0.447	19.2	4.0	0.488	12.3	4.0	0.368
10 - <15	59.2	11.0		19.0	3.9		13.3	3.4	
≥15	61.8	8.8		19.8	3.2		12.4	3.6	
Duration of work in the institution (Years)									
< 3	60.1	7.7		19.4	2.8		12.4	3.7	
3 - <5	61.8	6.0	0.295	20.3	2.6	0.328	12.0	4.0	0.518
5- <10	58.0	12.6		19.1	4.5		12.6	3.6	
≥10	59.5	11.2		19.1	3.8		13.1	3.5	
Income level (TL)									
< 7.000	52.7	14.5		17.7	5.0		13.1	3.3	
7.000-9.999	60.7	7.2	**<0.001**	20.1	2.8	**0.019**	12.8	3.6	0.510
10.000-14.999	60.9	8.9		19.6	3.4		12.1	3.9	
≥15.000	63.0	4.6		19.6	1.4		12.4	3.4	
Health Status Perception									
Bad	57.9	12.1		20.1	3.5		9.7	4.3	
Middle	58.4	10.5	0.349	18.9	4.0	0.217	13.0	3.5	**0.008**
Good	61.0	8.5		19.6	3.1		12.8	3.3	
Very good	60.1	9.9		20.4	3.1		11.1	4.4	
OHS cultural knowledge asset									
Yes Sufficient	59.7	10.4		19.5	3.8		13.1	3.7	
Yes a little	60.1	9.1	0.895	19.4	3.2	0.962	12.2	3.6	**0.046**
No there's not	58.5	7.7		19.3	2.6		10.3	2.8	
OHS culture In-service training									
No	58.1	11.5	0.246	18.6	3.9	0.127	10.1	3.8	**<0.001**
Yes	60.2	9.2		19.6	3.3		12.9	3.5	
Getting OHS training									
Yes	59.9	9.7		19.5	3.5		12.6	3.6	
No	59.7	8.4	0.945	19.6	1.3	0.885	10.7	3.9	0.069
Total	**59.9**	**9.6**		**19.5**	**3.4**		**12.5**	**3.7**	

OHSC: *Occupational Health and Safety Culture*

When the Depression, Anxiety and Stress mean scores of the participants in the study were examined according to their socio-demographic characteristics; Depression and Anxiety mean scores were found to be higher in the 20-29 age group, singles, nurse-midwife-EMT, and those who perceived their health status as moderate or poor, and were found to be statistically significant ($p<0.05$). The mean stress score was found to be higher and statistically significant in the 20-29 age group, those with doctor and nurse-midwife-EMT, and those who perceive their health status as moderate or bad ($p<0.05$) (Table 3).

When the correlation of OHS culture total and sub-dimensions with work performance, mental health and other variables is examined; There was a positive correlation between risk awareness ($r=0.291$), work performance ($r=0.169$), education level ($r=0.251$), income level ($r=0.184$), and OHS in-service training ($r=0.166$). A very weak negative correlation was found between working time ($r=-0.160$) in this institution ($p<0.05$). No statistically significant correlation was found between the total OHS culture score and depression, anxiety, stress, age, working time in the profession, perception of health and receiving OHS training ($p>0.05$). While there was a very weak negative correlation between work performance and awareness ($r=0.166$) and education-communication ($r=0.227$), which are sub-dimensions of OHS, no statistically significant correlation was found between risk awareness ($p>0.05$). A very weak positive correlation was found between taking OHS culture in-service training and OHS culture total, and risk awareness ($r=0.278$) ($p<0.05$).

According to multivariate LR analysis; OHS culture total score in order of importance, decrease in working time in this institution ($\beta=-0.352$), receiving OHS culture in-service training ($\beta=0.209$), increase in work performance ($\beta=0.190$) and those not working in auxiliary jobs ($\beta=-0.183$) are higher ($p<0.05$). Depression, anxiety, stress, age, gender, marital status, income level, health perception and OHS training status included in the model were not found to be statistically significant (Table 4).

According to multivariate LR analysis; OHS culture awareness score in order of importance; Decrease in working years in this institution ($\beta=-0.356$), those who are not ancillary personnel ($\beta=-0.205$), increase in work performance ($\beta=0.191$), increase in education ($\beta=0.163$ and OHS culture was found to be higher in those who received in-service training ($\beta=0.126$) and were statistically significant ($p<0.05$), while other variables were not statistically significant (Table 4).

According to multivariate LR analysis; OHS culture education-communication score respectively, reduction of working years in this institution ($\beta=-0.355$), increase in work performance ($\beta=0.256$), an increase in the anxiety score ($\beta=0.162$) and nurse-midwife-EMT were found to be higher in ($p<0.05$), Other variables included in the analysis were not found to be statistically significant (Table 4).

According to multivariate LR analysis; While the OHSC risk awareness score was higher only in those who received OHS culture in-service training and was found to be statistically significant, other variables included in the model were not statistically significant (Table 4).

Table 3: Depression, Anxiety and Stress mean scores of hospital staff according to their socio-demographic characteristics.

	Depression			Anxiety			Stress		
	Mean	**SD**	**p**	**Mean**	**SD**	**p**	**Mean**	**SD**	**p**
Gender									
Woman	13.3	4.3	0.150	12.0	3.9	0.100	13.8	4.0	0.233
Male	12.4	5.0		11.1	4.2		13.1	4.5	
Age Groups (Year)									
20-29	14.4	5.2		12.9	4.6		14.4	4.5	
30-39	11.8	4.0	**<0.001**	10.7	3.3	**<0.001**	12.6	3.9	**0.017**
≥40	11.9	3.4		10.6	3.1		13.2	4.0	
Marital Status									
Married	12.2	4.0	**0.002**	11.0	3.5	**0.002**	13.1	3.9	0.076
Single	14.3	5.3		12.7	4.7		14.1	4.7	
Education Level									
High school	12.0	4.5		10.9	3.9		12.6	4.8	
Associate Degree	12.8	4.9	0.077	11.9	3.7	0.144	13.8	4.0	0.231
Undergraduate	13.8	4.8		12.3	4.3		14.0	4.1	
Master's and Above	12.1	4.0		11.0	3.5		13.1	3.6	
Job									
Doctor	12.7	4.5		11.4	3.8		14.1	3.5	
Nurse / Midwife/EMT	13.8	4.8	**0.008**	12.3	4.3	**0.027**	14.1	4.2	**0.050**
Other Health Personnel	10.8	3.5		9.9	2.4		12.1	3.4	
Auxiliary Works	12.3	4.5		11.3	3.9		12.6	4.9	
Length of work in the profession (Years)									
< 3	13.7	5.5		12.2	4.9		13.8	5.0	
3 - <5	14.4	4.9		12.6	4.3		14.3	4.1	
5- <10	12.9	4.5	0.064	11.7	4.2	0.118	13.8	4.3	0.397
10 - <15	12.0	4.2		11.2	3.5		12.9	4.1	
≥15	11.9	3.9		10.4	2.8		12.7	3.7	
Working time in the institution (Years)									
< 3	13.2	5.4		11.9	4.6		13.6	4.6	
3 - <5	14.2	4.3	0.058	12.3	4.3	0.293	13.8	4.3	0.703
5- <10	12.3	4.1		11.0	3.4		13.4	3.8	
≥10	11.8	4.0		11.0	3.4		12.9	4.2	
Income level (TL)									
< 7.000	12.5	4.3		11.4	3.6		12.9	5.1	
7.000-9.999	13.5	5.1	0.452	11.6	4.2	0.989	13.5	4.5	0.550
10.000-14.999	12.5	4.5		11.7	4.2		13.3	4.0	
≥15.000	13.6	4.4		11.6	3.7		14.6	3.3	
Health Status Perception									
Bad	17.4	7.0		16.2	6.8		19.2	7.3	
Middle	14.6	4.5	**<0.001**	13.1	3.5	**<0.001**	14.7	3.6	**<0.001**
Good	12.1	4.0		10.7	3.6		12.8	3.9	
Very good	10.1	3.6		9.4	3.0		10.6	2.9	
OHS cultural knowledge asset									
Yes Sufficient	13.3	4.6		11.8	3.7		13.3	4.0	
Yes a little	12.5	4.5	0.199	11.3	4.1	0.111	13.4	4.3	0.194
No there's not	15.0	6.9		14.3	6.2		16.1	6.2	
OHS culture In-service training									
No	13.7	4.8	0.312	12.5	4.2	0.194	14.1	4.6	0.334
Yes	12.8	4.6		11.5	4.0		13.3	4.2	
Getting OHS training									
Yes	12.8	4.6		11.6	4.1		13.4	4.3	
No	14.3	4.9	0.268	12.2	3.4	0.621	14.1	3.5	0.587
Total	**12.9**	**4.6**		**11.6**	**4.0**		**13.5**	**4.3**	

OHSC: *Occupational Health and Safety Culture*

Table 4: Analysis of the factors affecting the total and sub-dimensions of the OHSC scale with linear regression backward model.

	Unstandardized Coefficients				95.0% Confidence Interval for B	
	B	Std. Error	β	Sig.	Lower Bound	Upper Bound
OHSC Total (Adj. R^2= 0.182)						
(Constant)	64.808	7.989		**<0.001**	49.056	80.560
Work Performance	0.359	0.121	0.190	**0.003**	0.121	0.598
Duration of work in the institution (Years)	-0.992	0.262	-0.352	**<0.001**	-1.508	-0.476
Receiving ISG Cultural training	7.528	2.309	0.209	**0.001**	2.975	12.081
Ref: Doctor Job = Utility jobs	-5.548	2.580	-0.183	**0.033**	-10.635	-0.461
OHSC-Awareness (Adj. R^2= 0.188)						
(Constant)	40.709	5.859		**<0.001**	29.156	52.262
Work Performance	0.266	0.089	0.191	**0.003**	0.091	0.441
Education level	0.619	0.311	0.163	**0.048**	0.007	1.232
Duration of work in the institution (Years)	-0.738	0.192	-.0356	**<0.001**	-1.116	-0.359
Receiving OHS Cultural training	3.344	1.694	0.126	**0.050**	0.005	6.684
Ref: Doctor Job = Utility jobs	-4.569	1.892	-0.205	**0.017**	-8.299	-0.838
OHSC-Education- communication (Adj. R^2= 0.144)						
(Constant)	9.468	2.280		**<0.001**	4.972	13.964
Anxiety	0.138	0.063	0.162	**0.030**	0.014	0.263
Work Performance	0.128	0.033	0.256	**<0.001**	0.064	0.193
Working time in the institution (Years)	-0.265	0.071	-0.355	**<0.001**	-0.405	-0.126
Ref: Doctor Job= Nurse/ Midwife/EMT	1.104	0.527	0.160	**0.037**	0.066	2.143
OHSC-Risk Awareness (Adj. R^2= 0.081)						
(Constant)	9.849	0.641		**<0.001**	8.586	11.113
Getting OHS Culture In-Service training	2.549	0.699	-0.250	**<0.001**	1.170	3.927

The independent variables: *Depression, Anxiety, Stress, Business Performance, Age, Education level (years), Years worked in this institution, Income level, Perception of Health Status, Dummy variables: Getting OHS culture training, OHS training, Job, Gender, Marital status.*
OHSC: *Occupational Health and Safety Culture*

Discussion

In this study, the relationship between the socio-demographic characteristics of hospital employees, work performance and occupational health and safety culture was examined using multivariate analysis method. Due to the unavailability of an adequate number of studies on the relationship between the job performance of hospital employees and the occupational health and safety culture in Turkey, the relationship between them has not been sufficiently discussed.

Failure to take adequate precautions regarding OHS may cause stress, decrease in job satisfaction and decrease in work performance in employees (17). In addition, the importance of education in increasing the level of OHS culture is significant. Studies show that OHS trainings increase OHS awareness and knowledge in employees (8).

In our research, 93.8% of the hospital staff stated that they received OHS training, 84.6% received in-service training about OHS culture and 41.3% stated that they had sufficient knowledge about OHSC (Table 1). According to our study, it was determined that the rate of those who received OHS culture and OHS training was high. This shows that attempts are made to create an OHS culture in institutions and it is desired to create awareness in terms of culture formation in employees. However, the fact that less than half of the employees' state that they have sufficient knowledge about OHS culture reveals that the number of in-service trainings should be increased.

The OHSC total score average of the participants in the study is 91.8, which is moderate. OHSC score average; It is higher in those who have a short working time in the institution, those who receive in-service training, those who have high work performance and those who work as health personnel ($p<0.05$). OHS culture score was not found to be associated with depression, anxiety, stress, age, gender, marital status, income level, health perception and OHS training (Table 4). In our study, a very weak correlation was found between OHS culture total score and work performance ($r=0.169$) and OHS in-service training ($r=0.166$), and a negative correlation between working time in this institution ($r=-0.160$) ($p<0.05$). Taşdemir concluded that there is a positive relationship between occupational health and safety and employee performance (18). Increased work performance is associated with higher job satisfaction and safer work, and this is thought to be directly related to OHS culture. While there are studies that support the finding of our study and that there is no relationship between OHS culture and gender, there are studies that conclude that women's OHS scores are high, contrary to our study (19, 20). Supporting our study, there are studies showing that OHS culture scores vary according to occupation (21, 22). In the studies conducted by Tozkoparan, Taşoğlu and Gökçen, similar to our findings, it was determined that there was no relationship between education level and OHS culture score. In Gökçen's study, it was concluded that the OHS culture level is higher in those who receive OHS training (23, 24). It is seen that increasing OHS trainings is important in terms of creating awareness among employees. When the literature is examined, there are studies showing that the OHS culture level is high in those who receive OHS training (25, 26). In this study, almost all of the employees (93.8%) received OHS training, but no relationship was found between receiving OHS training and OHS culture. The fact that the OHS culture point average of those who are health personnel is higher than those who work in auxiliary jobs may be due to the fact that the people in this group also have a higher education level and have more information about occupational risks. These factors could include organizational factors, job characteristics, communication channels, leadership styles, or other workplace dynamics that influence developing and implementing a strong OSH culture. The reason why the OHS culture score is higher in those with shorter working hours in the institution may be due to the higher participation of newly recruited personnel in the OHS in-service trainings held at the hospital. Higher participation in OHS in-service training can contribute to a better understanding and awareness of occupational health and safety practices, leading to a higher OHS culture score. There are studies showing that there is a relationship between income level and OHS culture total and sub-dimensions (27). In our study, it supports the results in the literature, and it is found that there is a very weak positive correlation between the OHS culture total score and income level ($r=0.184$), however, this relationship was not found to be significant in the multivariate LR analysis. This may be due to the positive correlation between income level and education level.

According to the socio-demographic characteristics of the hospital staff, WPS mean scores were not found to be statistically significant ($p>0.05$) (Table 1). The result of the study named 'The effect of being engaged in the work on the work performance of health workers' also

supports our study; It has been concluded that there is no relationship between socio-demographic characteristics such as gender, marital status, education level, working time in the institution, income status and work performance (28). In his study on the relationship between personality traits and work performance, he did not find a relationship between gender, age and seniority, and work performance, but concluded that there was a significant relationship with educational status (29). This finding suggests that factors other than socio-demographic characteristics may be more influential in determining work performance among the hospital staff. It could be related to job-related factors (such as task complexity, skill level, or job satisfaction), organizational factors, or individual factors.

The OHSC awareness sub-dimension score of the participants in the study; It was found to be higher in those who have a short working time in the institution, those who work as health personnel, those with high work performance, those with a high level of education and those who receive in-service training at OHSC (Table 4). A very weak negative correlation was found between OHSC awareness and work performance ($r=0.166$) ($p<0.05$). While there was a weak positive correlation between OHSC awareness and income level ($r=0.244$), this was not found significant in the multivariate LR analysis ($p<0.05$). No significant correlation was found between OSHC awareness and depression, anxiety and stress ($p>0.05$). Ayduran and Olcay in their study for the workers in the construction sector, supports the result of our study, it was determined that the OHS culture total score increased as the income level of the participants increased. However, there is no significant difference according to gender, age and marital status (27). In a study conducted in the accommodation sector, OHSC awareness increased with professional experience, while professional experience and awareness were not found to be important in our study. In the same study, contrary to our study, no relationship was found between education level and OHSC awareness (30). It can be thought that the different results in the literature depend on the risk situation of the workplace, the nature of the work done and the difference of the sample. In the literature, there are studies showing that OHS cultural awareness increases positively as the level of education increases. In support of the result, in our study, it was concluded that there was a positive correlation between the OHSC awareness score and the education level ($r=0.295$) (24–26). In the study of Güler et al., it was determined that there is a strong relationship between education and OHS culture (31). The aim of in-service training is to create awareness in people and to develop permanent positive behavior on people. In this study, it has been revealed that in-service trainings are effective in increasing OHS cultural awareness. In Eroğlu's study, no relationship was found between gender and awareness. In a similar study, contrary to our findings, the average of OHS culture awareness was found to be higher as the number of working years in the institution increased. In the study of Mutlu it was concluded that OHS cultural awareness is higher in women (32, 33). As the work performance increases, the increase in the OHS culture awareness of the employees may be due to the employees' tendency to work more efficiently and carefully. Increasing the level of education and taking OHS culture in-service training is considered as an expected result to increase the awareness of OHSC (23, 25, 26).

In LR analyze, the OHSC education-communication score was found to be higher in those with a decrease in working years in the institution, an increase in work performance, an increase in anxiety score, and nurse-midwife-MET (Table 4). A very weak correlation was found between OHS culture, education-communication and work performance ($r=0.227$), and a negative correlation between working time in the institution ($r=-0.191$). No significant correlation was found between OHS culture education-communication and depression, anxiety and stress, age, education level, income level, and receiving OHS culture

in-service training (p>0.05). In a study, similar to our study, it was determined that there was no relationship between income level and OHSC education-communication (27). In Taşdemir's research, in line with our study, it was determined that there is a positive relationship between OHS culture, education-communication and employee performance (18). The increase in the level of OHS culture education-communication as the working year in the institution decreases may be due to the fact that they participate more in the trainings for new recruits. It is thought that the in-service training of employees as Nurse-Midwife-EMT is carried out more frequently than other professional employees, which causes the OHS culture education-communication level to be higher. In addition, it can be thought that the fact that nurses have more teamwork compared to other occupational groups causes the OHS culture education-communication score to be higher.

OHSC risk awareness score was found to be higher only in those who received OHSC in-service training. Mental status, work performance, age, education level, years of employment in the institution, level of insanity, perception of health status, OHS training, occupation, gender, marital status were not found to be statistically significant. A weak positive correlation was found between OHSC risk awareness and OHSC in-service training (r=0.278). Since in-service training will increase awareness, it is thought to be important in terms of increasing the level of OHS culture and early identification of the risks of the working environment. It is thought that the reason for the high level of OHSC risk awareness in in-service training areas is due to the fact that the trainings create OHSC risk awareness in employees, as expected. Many studies in the literature support this result and emphasize that there is a relationship between OHS and education and that it is important in recognizing risks (23, 25, 26). In the Ayduran and Olcay study, similar to our study, no relationship was found between income level and OHSC risk awareness. In the same study, in line with our findings, no relationship was found between gender and OHSC risk awareness (27). Increasing the working time in the institution is also an important factor in terms of getting to know the environment more and being aware of the risks. However, in our study, no significant relationship was found between OHS risk awareness and working time in the institution. It is important to note that while increased working time in an institution may provide individuals with more exposure to the work environment, it does not necessarily guarantee a higher level of OHS risk awareness. Other factors, such as training programs, safety culture, communication practices, and individual attitudes towards safety, may play a more influential role in determining OHS risk awareness.

Conclusion and Suggestions

The OHS culture of the employees is medium, reducing the working time in the institution, getting OHS culture in-service training, increasing the work performance and working as a health personnel increase the OHS culture level.

There was no statistically significant relationship between OHS culture and employees' depression, anxiety, and stress.

These findings emphasize the importance of implementing comprehensive occupational health and safety programs that go beyond solely relying on the duration of employment. Such programs should focus on enhancing risk awareness and promoting a strong safety culture within the institution, regardless of the length of an individual's working time.

Hospital administrations should adopt policies that increase the OHS culture and work performance in the institution and make applications in this regard.

Limitations of the Study

The limitation of the study is that the study was conducted only in one university hospital and did not include other public and private hospitals. The inclusion of all employees in the study without selecting a sample for the study and the low level of participation are among the limitations of this study.

Declarations

Ethical Approval: Employees were informed about the research and their consent was obtained. Before starting the survey, it was stated that their participation in the research was on a voluntary basis. The research was conducted in accordance with the rules and ethical codes specified in the Declaration of Helsinki.

Conflict of Interest: The authors declare that there is no conflict of interest in this study.

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