

# The Effect of Individual Workload Perceptions of Nurses Working in COVID-19 Clinics on their Attitudes towards Patient Safety

## COVID-19 Kliniklerinde Çalışan Hemşirelerin Bireysel İş Yükü Algılarının Hasta Güvenliğine Yönelik Tutumlarına Etkisi

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### Abstract

**Aim:** This study aimed to investigate the effect of individual workload perceptions of nurses working in COVID-19 clinics on their attitudes towards patient safety.

**Method:** The research was conducted in a descriptive and correlational type. The study sample consisted of 323 nurses working in COVID-19 clinics from different health institutions between February 15-April 15, 2021, in Turkey. "The Individual Workload Perception Scale" and "the Patient Safety Attitude Questionnaire" were used for the collection of the data analyzed with descriptive statistics, correlation analysis, and multiple linear regression analysis.

**Results:** The nurses' mean Individual Workload Perception Scale score was  $98.5 \pm 18.7$ , and the Patient Safety Attitude Questionnaire score of nurses was  $140.2 \pm 27.5$ . There was a positive and statistically significant relationship between the nurses' Individual Workload Perception Scale and Patient Safety Attitude Questionnaire scores. A negative and statistically significant relationship was found between the Stress Recognition sub-dimension of the Patient Safety Attitude Questionnaire and the Workload and Intention to stay sub-dimensions of the Individual Workload Perception Scale. The effect of the nurses' individual workload perception on the attitude towards patient safety accounted for 53.2% of the total as a result of the regression analysis.

**Conclusion:** The results obtained from the study show that nurses with positive individual workload perceptions also have positive attitudes towards patient safety. In line with the study results, nurse managers need to act as a bridge in meeting the training needs of the employees on issues requiring dynamic and continuous access to new information such as patient safety and for employees to access resources. Furthermore, it is recommended to conduct further studies using quantitative and qualitative research methods to gain a deeper understanding by revealing the stressors affecting nurses' workload perceptions in the work environment, their intention to stay, and performance.

**Keywords:** Nurse, workload, patient safety, attitude.

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### Öz

**Amaç:** Bu araştırma, COVID-19 kliniklerinde çalışan hemşirelerin bireysel iş yükü algılarının hasta güvenliğine yönelik tutumlarına etkisini araştırmayı amaçlamıştır.

**Yöntem:** Araştırma tanımlayıcı ve ilişki arayıcı nitelikte yapılmıştır. Araştırmanın örneklemini Türkiye’de 15 Şubat-15 Nisan 2021 tarihleri arasında farklı sağlık kurumlarından COVID-19 kliniklerinde çalışan 323 hemşire oluşturmuştur. Veri toplamada bireysel iş yükü algı ölçeği ve hasta güvenliği tutum anketi kullanılmıştır. Verilerin analizinde tanımlayıcı istatistikler, korelasyon analizi ve çoklu doğrusal regresyon analizi kullanılmıştır.

**Bulgular:** Hemşirelerin bireysel iş yükü algı ölçeği puan ortalaması  $98,5 \pm 18,7$  ve hasta güvenliği tutum ölçeği puanı  $140,2 \pm 27,5$  olarak bulunmuştur. Hemşirelerin bireysel iş yükü algı ölçeği ile hasta güvenliği tutum anketi puanları arasındaki ilişki istatistiksel olarak anlamlı ve olumlu yöndedir. Hasta güvenliği tutum anketi, stres tanıma alt ölçeği ile bireysel iş yükü algı ölçeği, iş yükü ve işte kalma niyeti alt ölçekleri arasındaki ilişki istatistiksel olarak anlamlı ve olumsuz yöndedir. Hemşirelerin bireysel iş yükü algısının hasta güvenliğine yönelik tutumları üzerindeki etkisinin regresyon analizi sonucunda toplamın %53,2’sini açıkladığı bulunmuştur.

**Sonuç:** Araştırmadan elde edilen sonuçlar bireysel iş yükü algıları olumlu olan hemşirelerin hasta güvenliğine yönelik tutumlarının da olumlu olduğunu göstermektedir. Araştırma sonuçları doğrultusunda yönetici hemşirelerin hasta güvenliği gibi dinamik ve sürekli yeni bilgilere erişim gerektiren konularda çalışanların eğitim gereksiniminin giderilmesinde ve çalışanların kaynaklara erişiminde bir köprü görevi görmesi gerekmektedir. Ayrıca hemşirelerin çalışma ortamındaki iş yükü algılarını, işte kalma niyetlerini ve performanslarını etkileyen stres etmenlerinin neler olduğunu ortaya çıkararak daha derin bir anlayış kazanmak için nicel ve nitel araştırma yöntemlerinin kullanıldığı araştırmaların yapılması önerilmektedir.

**Anahtar Sözcükler:** Hemşire, iş yükü, hasta güvenliği, tutum.

### Introduction

COVID-19, a new type of coronavirus disease, was declared a global pandemic by the World Health Organization (WHO) on March 11, 2020. The severity of the disease and its spread have raised dramatic international concerns about social and economic recession. Countries have been asked to take immediate action to control the virus (WHO, 2020). In addition to the impact of the COVID-19 pandemic on sick individuals, it had an enormous impact on healthcare professionals, who work at the forefront of society’s health (Denning et al., 2020; Duarte et al., 2020). As one of the professional groups who work in close contact with patients for long periods during the provision of health services, nurses’ workload has gradually increased. Reasons such as increased workload during the COVID-19 pandemic, staff allocation in unfamiliar clinical settings, cancellation of ordinary services, and the need to treat patients with an infectious disease, which is not known much about, have led to a rapid change in care delivery models. It is believed that this challenging work environment and increased workload may affect health workers’ ability to provide safe and effective care (Denning et al., 2020). With the COVID-19 pandemic, the increase in nurses’ workload, high numbers of overtime, inadequacy felt in nursing care matters, and issues in accessing the necessary equipment to take protective measures may affect patient safety.

Patient safety, one of the most important issues in providing safe and effective care in delivering health services, is defined as ‘*reducing the risk of unnecessary harm associated with healthcare to an acceptable minimum and no preventable harm to a patient*’ (WHO, 2016, 2017). As an important factor in maintaining the delivery of high-quality health care services, patient safety is also one of the reliable measures of a hospital’s performance, so it affects both the health system and patient outcomes (Barati, Dorosti, Talebzadeh & Bastani, 2016; Rajalatchumi et al., 2018; Welp, Meier & Manser, 2015). Therefore, if the undesirable situations that risk patient safety cannot be controlled and prevented, they lead to a prolonged hospital stay, disability, and death, leading to high costs to the health system (Panagioti et al., 2015). Events associated with patient safety, such as mistakes in drug administration and the decrease in patients, are associated with working shifts, cognitive impairment, attention deficit, work stress, and increased workload (Allahyari, Rangi, Khalkhali & Khosravi, 2014; Carlesi, Padilha, Toffoletto, Henriquez-Roldán & Juan, 2017; Magalhães, Dall’Agnol & Marck, 2013; Park & Kim, 2013). In addition, there are research results in the literature showing that the workload of nurses working in COVID-19 clinics has increased (Lucchini et al., 2020; Reper et al., 2020). It is believed that increased workload can cause nurses to experience more burnout, which may affect both the quality of care and patient safety (Pérez-Francisco et al., 2020).

Providing safe, high-quality care is always one of the primary purposes of a health care system, even during pandemics, natural disasters, and conflicts (Denning et al., 2020). Therefore, evaluating nurses' workload will positively affect managing their workload and ensuring the safety and quality of patient care. No studies have been found in the literature investigating the relationship between individual perceived workload and patient safety during the COVID-19 pandemic. For this reason, due to the limitations of the studies and the need to pay attention to patient safety measures, this study aims to investigate the individual perceived workload of nurses working in COVID-19 clinics and its effect on their attitudes towards patient safety.

## Method

**Study Aim and Type:** This study aimed to investigate the effect of individual workload perceptions of nurses working in COVID-19 clinics of different sized healthcare institutions in Turkey on their attitudes towards patient safety. The study was cross-sectional, descriptive, and correlational.

**Study Questions:** This study sought answers to the following questions:

- What is the perception of the individual workload of nurses working in COVID-19 clinics?
- What are the attitudes of nurses working in COVID-19 clinics towards patient safety?
- What is the relationship between the individual workload perception of the nurses and their attitudes towards patient safety?
- Does the individual workload perception of the nurses working in COVID-19 clinics affect their attitudes towards patient safety?

**Study Population and Sample:** The study population consisted of nurses working in the COVID-19 clinics from different health institutions in Turkey. A power analysis was performed using the A-priori Sample Size Calculator for Multiple Regression tool to estimate the study's sample size (Soper, 2021). When the anticipated effect size value is 0.15, the desired statistical power level is 0.90, ten (10) independent variables and the probability level are taken as 0.05; therefore, the minimum sample size to be included in the study is 152. In the study, data analyses were carried out with 323 participants.

### Data Collection Instruments:

**Socio-Demographic Characteristics Form:** The researchers prepared this form that consists of 10 items about the participants' individual characteristics and work lives.

**Individual Workload Perception Scale (IWPS):** This scale evaluates healthcare professionals' perceptions about their work environment and overall nurse satisfaction. Cox developed the scale in 2003, and validity and reliability studies were conducted by Cox et al. in 2007 (Cox, Teasley, Lacey, Carroll & Sexton, 2007). In Turkey, the validity and reliability study of the scale was conducted by Saygılı (Saygılı & Çelik, 2011). The Individual workload perception scale consists of five sub-dimensions with 31 items. Managerial support (eight items), peer support (six items), unit support (eight items), workload (six items), and intention to stay (three items) are the sub-dimensions. The five-point Likert type scale is scored. The score that can be obtained from the scale is between 31 and 155. The increase in the mean score of the scale sub-dimensions, excluding the intention to stay at work, is considered positive. In this sub-dimension, the higher the score is from the intention to stay sub-dimension, the lower the intention is to continue the current job. The overall nurse satisfaction score is calculated by the sum of the mean scores of the sub-dimensions. In the study conducted by Saygılı, the Cronbach's alpha value was .89 in the managerial support sub-dimension, .81 in peer support, .66 in unit support, .38 in workload, and .89 in the intention to stay (Saygılı & Çelik, 2011). The Cronbach's alpha value of the whole scale in this study was .90, and it was .91, .87, .75, .50, and .62, respectively, for the sub-dimensions.

**Patient Safety Attitude Questionnaire (PSAQ):** This scale was developed by Sexton et al. (2006), adapted into Turkish by Baykal, Şahin, and Altuntaş (2010), and converted into a scale consisting of 6 sub-dimensions and 46 items (Baykal, Şahin, & Altuntaş, 2010). It indicates that as the patient safety attitude scale score increases, the perception of patient

safety increases. Values above the mean score of the patient safety attitude scale are considered high, and values below the mean are low. The scale consists of job satisfaction, teamwork, safety climate, perceptions of management, stress recognition, and working conditions sub-dimensions. The five-point Likert type scale is scored. The first 11 items describe job satisfaction, items between 12-23 teamwork, 24-28 safety climate, 29-35 perceptions of management, 36-40 stress recognition, and items between 36-40 working conditions. Items 21, 36, 37, 38, 39, 40, 41, 42, 43, and 45 are reverse-scored items. In the scale, the total score obtained of the six sub-dimensions gives the total score of the patient safety scale. The score that can be obtained from the scale is between 46 and 230. The Cronbach alpha value of the whole scale is 0.93, 0.85 for job satisfaction, 0.86 for teamwork, 0.83 for safety climate, 0.77 for perceptions of management, 0.74 for stress recognition, and 0.72 for working conditions (Baykal et al., 2010). The Cronbach alpha value of the whole patient safety attitude scale in this study was .93; sub-dimension Cronbach's alpha values were determined as .92, .82, .88, .88, .81, and .60, respectively.

**Data Collection Process:** The study's data collection was performed online (using various social media tools) between February 15 and April 15, 2021. Information on the purpose of the study, how long it would take to complete the forms, and how the obtained data would be used were on the front page of both online forms. After their consent was obtained (by clicking on the online application), the participants who agreed to participate were asked to fill in the forms. Participants could not progress to the online forms until their informed consent was obtained. It took approximately 15 minutes for the participants to complete the data collection forms.

**Data Analysis:** The data were analyzed using the Statistical Package for Social Sciences (SPSS) 23.0 software program. Number, percentage, mean-standard deviation, and minimum and maximum values were used to evaluate descriptive data. Pearson correlation analysis and the multiple linear regression analysis were used to analyze the relationship between scale total and sub-scales.  $P < 0.05$  was considered statistical significance for all the data obtained in the study.

**Ethical Approval:** Necessary permissions were obtained from the Social Sciences and Humanities Ethics Board of the concerned University (03/02/2021-57) and the Ministry of Health (2021-01-21T15-05-59) to conduct the study. The measurement tools authors' permissions and volunteering participants informed consent were also obtained.

## Results

The mean age of nurses is  $28.47 \pm 6.16$  years, and 65.3% are females. A total of 59.1% of nurses in the institution have been employed for 1 to 5 years, 49.5% of nurses work in a public hospital, and 88.5% work as staff nurses. While 60.7% of nurses work in the ICU, 69.1% work in the day and night shifts, and 33.4% care for 1-2 patients in one shift. In addition, 6.2% of the nurses that participated in the study work in the COVID-19 outpatient clinics. In the study, the data were collected from nurses working in COVID-19 clinics. However, since the research data were collected by the online snowball sampling method, it was observed that nurses working in outpatient clinics participated in the study. Since COVID-19 outpatient clinics are the units where intensive work is carried out and is an area where too many patients enter and leave, these data were included in the study, considering that they may affect the perception of individual workload and the attitude towards patient safety (Table 1).

**Table 1. Socio-demographic and professional characteristics of nurses (N:323)**

Socio-demographic and professional characteristics	n (%)
<b>Age (Mean±SD)</b>	28.47 ± 6.16 (19-50)
<b>Gender</b>	
Female	211 (65.3)
Male	112 (34.7)
<b>Living Place</b>	
Province	171 (52.9)
District	38 (11.8)
Big city	114 (35.3)
<b>Educational Status</b>	
High School Degree	34 (10.5)
Associate Degree	43 (13.3)
Bachelor's degree	227 (70.3)
Postgraduate Degree	19 (5.9)
<b>Working Year</b>	
1-5 years	191 (59.1)
6-10 years	80 (24.8)
11-15 years	24 (7.4)
16-20 years	9 (2.8)
>20 years	19 (5.9)
<b>Working Institution</b>	
Public Hospital	160 (49.5)
University Hospital	41 (12.7)
Training and Research Hospital	122 (37.8)
<b>Working Position</b>	
Head Nurse	15 (4.6)
Staff Nurse	286 (88.5)
Polyclinic Nurse	19 (5.9)
Training Nurse	3 (0.9)
<b>Working Unit</b>	
Emergency Room	39 (12.1)
Intensive Care Unit	196 (60.7)
Medical Services	53 (16.4)
Surgical Services	15 (4.6)
Polyclinic	20 (6.2)
<b>Working Shift</b>	
Only Day Shift	60 (18.6)
Only Night Shift	40 (12.4)
Day and Night Shift	223 (69.1)
<b>The Number of Patients He/She Cares for In One Shift</b>	
1-2 Patients	108 (33.4)
3-5 Patients	93 (28.8)
6-9 Patients	36 (11.1)
10 Patients ≤	86 (26.6)

**Table 2. Distribution of the Individual Workload Perception Scale and Patient Safety Attitude Questionnaire and sub-dimension mean scores of nurses (N=323)**

	Mean ± SD	Min-Max
Managerial Support	24.82±7.98	8-40
Peer Support	26.41±6.35	8-40
Unit Support	18.36±4.96	6-30
Workload	19.48±3.65	6-30
Intent to Stay	9.47±2.24	3-15
<b>Individual Workload Perception Scale</b>	<b>98.46±18.70</b>	<b>36-155</b>
Teamwork Climate	39.66±8.31	16-60
Safety Climate	16.35±4.51	5-25
Perceptions of Management	22.18±6.08	7-35
Job Satisfaction	29.32 ± 9.84	11-55
Working Conditions	18.29±3.98	6-30
Stress Recognition	14.38±4.45	5-25
<b>Patient Safety Attitude Questionnaire</b>	<b>140.21±27.47</b>	<b>68-230</b>

The mean score from the individual workload perception scale of the nurses was found to be 98.46±18.70 (min.36-max.155). When examining the scale's sub-dimensions, the mean scores were found as follows: managerial support score 24.82±7.98 (min.8-max.40), peer support score 26.41±6.35 (min.8-max.40), unit support score 18.36±4.96 (min.6-max.30), workload score 19.48±3.65 (min.6-max.30), and intention to stay score 9.47±2.24 (min.3-max.15) (Table 2). The mean patient safety attitude questionnaire score of nurses was found to be 140.21±27.47 (min.68-max.230). In the study, the mean scores of the questionnaire's sub-dimensions were found as follows: teamwork climate score 39.66±8.31 (min.16-max.60), safety climate score 16.35±4.51 (min.5-max.25), perceptions of management score 22.18±6.08 (min.7-max.35), job satisfaction score 29.32±9.84 (min.11-max.55), working conditions score 18.29±3.98 (min.6-max.30), and stress recognition score 14.38±4.45 (min.5-max.25) (Table 2).

**Table 3. Correlation matrix for the Individual Workload Perception Scale and Patient Safety Attitude Questionnaire factors for nurses**

	Managerial Support	Peer Support	Unit Support	Workload	Intent to Stay	Individual Workload Perception Scale Total
Teamwork Climate	r 0.522	0.587	0.469	0.398	0.107	0.638
	p 0.000***	0.000***	0.000***	0.000***	0.054	0.000***
Safety Climate	r 0.598	0.448	0.505	0.398	0.142	0.598
	p 0.000***	0.000***	0.000***	0.000***	0.011*	0.000***
Perception of Management	r 0.549	0.584	0.520	0.366	0.157	0.661
	p 0.000***	0.000***	0.000***	0.000***	0.005**	0.000***
Job Satisfaction	r 0.645	0.476	0.528	0.404	0.107	0.669
	p 0.000***	0.000***	0.000***	0.000***	0.055*	0.000***
Working Conditions	r 0.356	0.329	0.231	-0.006	0.266	0.292
	p 0.000***	0.000***	0.000***	0.920	0.000***	0.000***
Stress Recognition	r 0.027	-0.111	-0.069	-0.278	-0.327	-0.138
	p 0.628	0.046*	0.213	0.000***	0.000***	0.013*
Patient Safety Attitude Questionnaire Total	r 0.650	0.589	0.542	0.366	0.037	0.698
	p 0.000***	0.000***	0.000***	0.000***	0.505	0.000***

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

There was a positive and statistically significant relationship between the individual workload perception scale and the patient safety attitude questionnaire scores of the nurses ( $r = .698$ ,  $p<0.001$ ). The relationship between the individual workload perception scale sub-dimensions including managerial support ( $r = .650$ ,  $p<0.001$ ), peer support ( $r = .589$ ,  $p<0.001$ ), unit support ( $r = .542$ ,  $p<0.001$ ), and workload ( $r = .366$ ,  $p<0.001$ ), and patient safety attitude questionnaire scores



were positive and statistically significant. Furthermore the relationship between the patient safety attitude questionnaire sub-dimensions of teamwork climate ( $r = .638, p < 0.001$ ), safety climate ( $r = .598, p < 0.001$ ), perception of management ( $r = .661, p < 0.001$ ), job satisfaction ( $r = .669, p < 0.001$ ) and working conditions ( $r = .292, p < 0.001$ ) was statistically significant and positive. The relationship between the patient safety attitude questionnaire sub-dimensions of stress recognition and the individual workload perception scale sub-dimensions of workload ( $r = -.278, p < 0.001$ ) and intention to stay ( $r = -.327, p < 0.001$ ) was negative and statistically significant (Table 3).

**Table 4. The Effect of Nurses' Individual Workload Perception Scale sub-dimensions on attitudes towards patient safety**

	$\beta$	St. Err.	St. $\beta$	t	p	VIF
Managerial Support	1.337	0.168	0.389	7.965	<b>0.000*</b>	1.656
Peer Support	1.368	0.200	0.317	6.853	<b>0.000*</b>	1.483
Unit Support	1.090	0.275	0.197	3.964	<b>0.000*</b>	1.718
Workload	0.028	0.354	0.004	0.080	0.936	1.546
Intent to Stay	-1.076	0.494	-0.088	-2.178	<b>0.030*</b>	1.131

**Model Statistics:**  $F=75.619, p < 0.001^*$   $R^2:0.544$  Adj.  $R^2:0.537, DW=1.802$

**Dependent Variable:** Attitude Towards Patient Safety

$\beta$ : Regression Coefficient; St.  $\beta$ : Standardized Regression Coefficient; \*:  $p < 0.001$  DW: Durbin Watson; Adj: adjusted

The multiple linear regression model established to examine the effect of nurses' individual workload perception scale sub-dimensions on attitude towards patient safety is statistically significant ( $F=75.619, p < 0.001$ ). There is no autocorrelation ( $DW=1.802$ ) and multi-connection problems in the established model ( $VIF < 5$ ). When the established model is examined, the individual workload perception scale sub-dimensions accounted for 53.7% of the attitude towards patient safety (Adj.  $R^2=0.537$ ). When the coefficients of the individual workload perception scale sub-dimensions are examined, managerial support, peer support, unit support, and intention to stay sub-dimensions statistically affect the attitude towards patient safety ( $p < 0.05$ ). On the other hand, the workload has been found not to affect the attitude towards patient safety statistically ( $p > 0.05$ ). Managerial support, peer support, and unit support perception toward patient safety have a positive effect, while the intention to stay has a negative effect. Accordingly, the attitude towards patient safety increases by 1.337 ( $\beta=1.337$ ) when managerial support increases by 1 unit, attitude towards patient safety increases by 1.368 ( $\beta=1.368$ ) when peer support increases by 1 unit, and attitude towards patient safety increases by 1.090 ( $\beta=1.090$ ) when unit support increases by 1 unit. When the intention to stay increases by 1 unit, the attitude towards patient safety decreases by 1.076 ( $\beta=1.076$ ).

## Discussion

Providing efficient and qualified service in healthcare depends on the capacity of the employees and the existence of a working environment that supports their motivation (Saygılı & Çelik, 2011). Therefore, nurses' perceptions of the working environment affect many quality indicators, including patient safety. This study was conducted to investigate the effect of individual workload perceptions of nurses working in COVID-19 clinics on their attitudes towards patient safety.

In the study, nurses' individual workload perception level was moderate. Accordingly, the nurses' perception of the work environment and their satisfaction have been moderate. There are studies in the literature in which nurses' perceived workload in the foreground during the COVID-19 pandemic has been investigated in terms of individual, managerial, and working environment relationships with different variables (Bambi, Iozzo & Lucchini, 2020; Said & El-Shafei, 2021; Zhang et al., 2021). In the study conducted by Ardebili et al. (2021), which determined the workload experienced by healthcare professionals during the COVID-19 pandemic, the nurses stated that the pandemic changed and complicated the distribution of duties and tasks. In a study conducted by Shoja et al. (2020) examining the effect of COVID-19 on the workload of Iranian healthcare workers, healthcare professionals who provide care for COVID-19 patients have been exposed to a higher workload than those who do not have contact with COVID-19 patients. In their study investigating the occupational stress, job satisfaction, and intention to leave of nurses working in different hospitals during the COVID-19 pandemic, Said and El-Shafei (2020) found that nurses were exposed to COVID-19-related stressors and only 4.8% had the intention to stay at work. In the study conducted by Karacabay, Savcı, Çömez, and Çelik (2020) to determine the individual workload perceptions of surgical nurses, the mean Individual Workload Perception Scale score was found to be  $100.30 \pm 12.79$ , similar to our study. According to another study conducted to examine the psychosocial risks, job engagement, and job satisfaction of nurses during the COVID-19 pandemic, emotional work and workload were the most

prominent psychosocial risks. In contrast, job engagement was moderate, and satisfaction was high (del Carmen Giménez-Espert, Prado-Gascó & Soto-Rubio, 2020). When these results are examined, it can be suggested that nurses' workload has increased with the COVID-19 pandemic. It can be said that with the increase in the workload, negative consequences such as intention to leave, increased stress, and burnout occur and that the nurses are physically and mentally tired. In this study, the perceptions of managerial support, peer support, unit support, and workload were above the average levels. Given these results, it can be said that during COVID-19, nurses feel supported by their managers, teamwork is effective, they have no problems in reaching the necessary equipment and resources while fulfilling their duties, and they do not feel pressure about the workload.

The patient safety attitudes of nurses were positive and above the medium level. The studies examining attitudes towards patient safety in the literature are similar to our results (Salih, Reshia, Bashir, Omar & Elwasefy, 2021; Ünver & Yeniğün, 2020). In the study conducted by Ünver and Yeniğün (2020) to determine the attitudes toward patient safety of nurses working in surgical units, their attitudes were positive. In the study conducted by Salih, Reshia, Bashir, Omar, and Elwasefy (2021) to examine the attitudes of Egyptian nurses towards patient safety and the factors affecting their attitudes, the teamwork sub-dimension was with the highest score and stress recognition sub-dimension with the lowest score, similar to our findings. The teamwork climate demonstrates the quality of collaboration among healthcare professionals (Ünver & Yeniğün, 2020). It can be stated that the teamwork sub-dimension was with the highest score since the importance of both intensive and collaborative team understanding became more prominent during COVID-19 and the existence of good relations within the team. Stress recognition expresses awareness of stressors that affect performance in the work environment and indicates highly affected performance in the workplace (Ünver & Yeniğün, 2020). The lowest score obtained from the stress recognition sub-dimension in this study can be explained by the fact that it requires nurses to evaluate their internal stressors, which is different nature of this sub-dimension. Accordingly, it requires nurses to make their self-assessments about the situations affecting their performance in the working environment. When they find out their internal stressors, they would be able to recognize the factors that put pressure on their performance.

There is a moderate and positive relationship between the individual workload perception scale and patient safety attitude scale scores. In other words, nurses who perceive the working environment positively have a positive attitude towards patient safety. Studies in the literature address the concepts of workload and patient safety in different dimensions (Kim, Yoo & Seo, 2018; Ross, Rogers & King, 2019). During pandemics, the increased workload in health care affects employee performance and quality of care, which also directly affects patient safety (Dağdeviren, Eraslan & Kurt, 2005; Özyer, 2016). In this study, a positive relationship has been found between nurses because they had positive perceptions of the working environment, and their attitudes towards patient safety were above the average.

A moderate and positive relationship has been found between the patient safety attitude questionnaire and the individual workload perception scale managerial support, peer support, unit support sub-dimension scores, and a weak and positive relationship with the workload sub-dimension score. The literature found that the individual workload perception scale managerial support and peer support sub-dimensions were associated with the employees' patient safety attitudes (Quillivan, Burlison, Browne, Scott & Hoffman, 2016). It has been emphasized that if there are personality mismatches between managers and their subordinates, some practices and behaviors of managers are perceived negatively by their employees, leading to a deterioration of the working environment and relations and, consequently, a negative increase in the workload perception (Cox et al., 2007). In addition to these results, the study conducted by Suliman and Aljezawi (2018) to examine nurses' perceptions of their work environment found that peer support was associated with job satisfaction, similar to our study findings.

There was a statistically significant and positive relationship between nurses' individual workload perception scale scores and patient safety attitude questionnaire teamwork climate, safety climate, perception of management ( $p < 0.001$ ), job satisfaction, and working conditions sub-dimension scores. It is important to aim for high-quality and safe health services by improving patient safety (Top & Tekingündüz, 2015). Given the study results, it can be said that nurses' attitudes, who perceive the working environment positively and have high levels of job satisfaction towards patient safety, are also positive.



The relationship between the patient safety attitude questionnaire stress recognition sub-dimension and individual workload perception scale workload and intention to stay sub-dimensions was statistically weak and negative. The general intention to stay in the job is an important sub-dimension that measures their intention to stay in their current position or institution over the next year and needs to be addressed as it is formed due to the influence of other perceptions sub-dimensions (Cox et al., 2007). Our study showed that the lowest score on the patient safety attitude scale was obtained from the stress recognition sub-dimension. According to this result, as the stress recognition score of nurses decreases, the workload score and the intention to stay score increase. Accordingly, it can be said that nurses' inability to identify stressors in the working environment leads them to perceive the workload to be more, increasing their intention to leave.

According to the regression analysis of the study, the perception of individual workload has been found to positively affect the attitude toward patient safety. According to studies, some descriptive features such as nurses' harmony with each other, nurse-physician cooperation, work stress, wages, age, gender, and education levels can affect the perception of workload (Çiftçioğlu, 2018; Ernst, Franco, Messmer & Gonzalez, 2004; Özyer, 2016). We did not find any studies examining workload perception and patient safety attitudes in the literature. However, the Institute of Medicine in the United States has identified many risks to patient safety. These are risks arising from every component and level of the care system, including the work process, workload, working hours, and the nursing team's working environment. These issues have an important place in affecting patient safety (Guirardello, 2017). In the study conducted by Özyer (2016) to determine the perception of individual workload and attitudes towards medical errors in nurses working in surgical clinics, it was found that as nurses' perception of workload decreased, their attitudes towards medical errors increased positively. In this study, it can be said that nurses who perceive the working environment positively and are satisfied with their job have a positive attitude towards patient safety.

**Limitations:** There are some limitations of this study. Study results represent the study sample, so they cannot be generalized to the wider population. Another limitation is that the study is conducted through an online survey that may limit access to people who do not use the Internet and social media tools and therefore cannot participate actively in such research. Another limitation is that this study was conducted as a descriptive study design.

## Conclusions and Recommendations

This study investigated the relationship between the individual workload perception of nurses working in COVID-19 clinics and their attitudes towards patient safety. The individual workload perceptions of nurses were found to be moderate. Nurses' attitudes towards patient safety were positive and above the medium level. When the relationship between the nurses' individual workload perception scale and the attitude questionnaire towards patient safety was examined, a positive and moderate relationship was found in many dimensions. A negative and weak relationship was found between the individual workload perception scale workload and intention to stay sub-dimension and the patient safety attitude questionnaire stress recognition sub-dimension. The effect of the nurses' individual workload perception on the attitude towards patient safety accounted for 53.2% of the total as a result of the regression analysis. Although the COVID-19 pandemic is getting more and more serious, the nurses' attitudes towards the working environment have not been negative due to the nature of care, which is the basic value of the nursing profession, and their satisfaction is moderate. It is also seen that nurses prioritize patient safety in all conditions and situations and show a positive attitude. In line with the study results, nurse managers need to act as a bridge in meeting the training needs of the employees on issues requiring dynamic and continuous access to new information such as patient safety and for employees to access resources. Furthermore, it is recommended to conduct further studies using quantitative and qualitative research methods to gain a deeper understanding by revealing the stressors affecting nurses' workload perceptions in the work environment, their intention to stay, and performance.

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