

Araştırma Makalesi/ Research Article

# Reliability and Validity of Turkish Version of the COVID-19 Pandemic-Related Perceived Stress Scale among Nursing Students

## COVID-19 Pandemisi'nde Hemşirelik Öğrencilerinde Algılanan Stres Ölçeği'nin Türkçe Geçerlik ve Güvenilirlik Çalışması

Burcu Arkan<sup>1</sup>  Aylin Bostanlı<sup>2</sup>  Murat Bektaş<sup>3</sup> 

<sup>1</sup>Bursa Uludağ University Faculty of Health Sciences, Psychiatric Nursing Department, Bursa, TÜRKİYE

<sup>2</sup>Bursa Uludağ University Institute of Health Sciences, Psychiatric Nursing Department, Bursa, TÜRKİYE

<sup>3</sup>Dokuz Eylül University Faculty of Nursing, Pediatric Nursing Department, İzmir, TÜRKİYE

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### ABSTRACT

**Objective:** This study aimed to adapt the COVID-19 Pandemic-Related Perceived Stress Scale, which is used to evaluate the prevalence of perceived stress and variables associated with the COVID-19 pandemic, into Turkish and test its validity and reliability on nursing students.

**Methods:** Methodological-descriptive-cross-sectional design. The data were collected using the “Sociodemographic Data Form” bearing the introductory information and the COVID-19 Pandemic-Related Perceived Stress Scale. The sample of this methodological-descriptive-cross-sectional study consisted of 412 students studying at the Nursing Department affiliated to the Faculty of Health Sciences in the spring semester of the 2021-2022 academic year and volunteered to participate in the study. Language, content, face, and construct validity were investigated in the adaptation and testing phases; internal consistency and test-retest methods were used for the reliability of the scale.

**Results:** The fit index of the COVID-19 Pandemic-Related Perceived Stress Scale was found to be above 0.80 in terms of both items and the scale. The results of the content validity analysis revealed that the scale confirmed the language and content validity. The scale measures the subject as adequately as the original construct for the Turkish sample.

**Conclusions:** The scale is confirmed to be a valid and reliable tool that can be used to evaluate the current mental state/problems.

**Keywords:** COVID-19, perceived stress, validity, reliability, student, nurse

### ÖZ

**Amaç:** Bu çalışmanın amacı COVID-19 Pandemisinde algılanan stres yaygınlığını ve değişkenleri değerlendirmede kullanılan COVID-19 Pandemisinin Algılanan Stres Ölçeği'ni Türkçeye uyarlamak, geçerlilik ve güvenilirliğini hemşirelik öğrencilerinde test etmektir.

**Yöntem:** Metodolojik-tanımlayıcı-kesitsel türdeki çalışmanın örneklemi 2021-2022 Eğitim-Öğretim yılı Bahar Yarıyılında Sağlık Bilimleri Fakültesi Hemşirelik Bölümü'nde çalışmaya gönüllü katılan 412 öğrenci oluşturdu. Verilerin toplanmasında tanıtıcı bilgilerin yer aldığı “Sosyodemografik Veri Toplama Formu” ve “COVID-19 Pandemisi'nde Algılanan Stres Ölçeği” kullanıldı.

**Bulgular:** COVID-19 Pandemisi'nde Algılanan Stres Ölçeği'nin hem madde hem de ölçek bazında uyum indeksinin 0.80'in üstünde olduğu saptandı. Kapsam geçerlilik analizi sonuçları, ölçeğin Türk örnekleme için dil ve kapsam geçerliliğinin sağlandığını ve konuyu Türk örneğinde de orijinal yapı kadar yeterli olarak ölçtüğünü gösterdi.

**Sonuç:** Ölçek, Türk bireylerin mevcut ruhsal durumunu/sorunlarını değerlendirmede kullanılabilecek geçerli ve güvenilir bir araçtır.

**Anahtar Kelimeler:** COVID-19, algılanan stres, geçerlilik, güvenilirlik hemşire, öğrenci

**ORCID IDs of the authors:** BA: 0000-0002-7285-6196; AB: 0000-0003-4149-2593; MB: 0000-0003-3327-8204

**Sorumlu yazar/Corresponding author:** Burcu ARKAN

Bursa Uludağ University Faculty of Health Sciences, Psychiatric Nursing Department, Bursa, TÜRKİYE

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**e-posta/e-mail:** [arkanburcu@yahoo.com](mailto:arkanburcu@yahoo.com)

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## Introduction

Following the worldwide spread of the COVID-19 epidemic which first appeared in Wuhan, China in December 2019 in a short time, the World Health Organization (WHO) declared this outbreak a pandemic on 11 March 2020 (World Health Organization, 2020). This newly developing, unprecedented epidemic has caused a deep threat and stress on humanity. Stress is an ordinary emotional response to impending threats and may trigger irrational thoughts and even pre-existing mental disorders (Campo-Arias et al., 2020). The responses of individuals to sudden changes may vary in different cultures and populations (Campo-Arias et al., 2020; Bermejo-Martins et al., 2021; Campo-Arias et al., 2021).

Quarantine/lockdown decisions and restrictions due to the COVID-19 pandemic caused various psychological problems in individuals (Taylor et al., 2008; Zhua et al., 2020; Losada-Baltar et al., 2021). A psychological problem is defined as an undesirable emotional experience caused by various factors which may manifest as tension, fear, anxiety and mental instability. Some problems may even lead to more serious psychological problems such as depression (Brody et al., 2016; Holmes et al., 2020).

Infectious diseases may be a significant cause of psychological problems. Social life which is substantially hindered by restrictions, long-term confinement, difficulties in obtaining daily life needs, economic losses, and the dissemination of unreliable information through social media may cause psychological problems (Taylor et al., 2008; Reinecke et al., 2017; Zhua et al., 2020; Losada-Baltar et al., 2021). Anxiety, depression, acute stress, and symptoms of post-traumatic stress disorder are known as the negative psychological effects of quarantine (Folkman and Lazarus, 1983; Taylor et al., 2008). The psychological problems associated with the pandemic manifest as stress, anxiety, mental distress, panic attacks, depression, fear, psychotic symptoms, and suicidal tendencies (Wu et al., 2009; Yip et al., 2010; Wheaton et al., 2012).

Allington et al., (2020) stated that post-quarantine anxiety and disturbance levels are significantly higher compared to pre-quarantine levels and this may affect participation in both professional and social activities. Uncertainties caused by factors such as anxiety about the future, inability to cope, and lack of knowledge aggravate the stress burden and affect the social relations of individuals (Lai et al., 2020). The increase in the

number of daily cases together with the COVID-19 pandemic, the increase in the workload, the lack of personal protective equipment, and the spread of non-scientific information are the reasons for the increase in the perceived stress level of individuals (Campo-Arias et al., 2020; Mercado-Lara et al., 2022).

There are very few studies measuring the perceived stress during pandemics and quarantine days. One of these few studies is known to be the study conducted by Taylor et al. in Australia, evaluating the factors and stress levels related to psychosocial stress. For the purpose of the aforementioned study, the Kessler Psychological Distress Scale (K10) was applied during the Equine Influenza Outbreak and it was revealed that the perceived level of distress of 34% of the respondents was higher compared to 12% of the general population (Taylor et al., 2008).

For the purposes of another study measuring stress levels throughout the COVID-19 Pandemic, 52,730 people living in China answered the COVID-19 Peritraumatic Distress Index (CPDI) which deals with physical symptoms as well as symptoms related to anxiety, depression, stress, and specific phobias. In line with the results of this study, it was concluded that 35% of the participants scored higher in the mental distress sub-dimension and that mental distress and stress were more common among women (Kessler et al., 2002; Qiu et al., 2020).

The COVID-19 Pandemic-Related Perceived Stress Scale aims to evaluate the prevalence of perceived stress and variables associated with the COVID-19 pandemic. The responses of individuals to sudden changes may vary in different cultures and populations (Campo-Arias et al., 2020; Bermejo-Martins et al., 2021; Campo-Arias et al., 2021). The operability and reliability of this scale have been confirmed by applying it to several populations (Campo-Arias et al., 2021). The scale indicated that the perceived stress level was high in the societies where it was applied (Campo-Arias et al., 2020; Mercado-Lara et al., 2022; Campo-Arias et al., 2021). High levels of perceived stress can lead to cognitive distortions and unrealistic thoughts. This situation may both cause psychological problems in individuals and trigger existing mental problems (Wells, 2000; Barlow et al., 2014; Hayes, 2016).

At the end of the literature review, it was found that there is no measurement tool to evaluate the perceived stress level for the pandemic period in our country. Accordingly, this study aims to test the validity and reliability of the COVID-19 Pandemic-

Related Perceived Stress Scale developed by Campo-Arias et al., in 2021 and to adapt it to Turkish. The data to be obtained as a result of this research is thought to be contributing to the evaluation of the current mental status/problems of individuals.

## Method

### Design

This is a methodological-descriptive-cross-sectional study planned in line with the purpose to adapt the “COVID-19 Pandemic-Related Perceived Stress Scale”, which is used to evaluate the prevalence of perceived stress and variables associated with the COVID-19 pandemic, into Turkish and test its validity and reliability on nursing students.

### Setting and Participants

The sample of this study consisted of 412 students studying at the Nursing Department affiliated to the Faculty of Health Sciences in the spring semester of the 2021-2022 academic year and volunteered to participate in the study. The population of the study consisted of individuals over the age of 18 who had not previously received a psychiatric diagnosis, living in Türkiye, volunteered to participate in the study, and had read and accepted the consent form. The exclusion criteria were as follows: living outside Türkiye, refusing to participate in the study, and having a previous psychiatric diagnosis. A preliminary application was performed on a group of 20 volunteer and independent students in order to evaluate the operability of the scale.

There are three rules in the literature for determining the number of samples in validity and reliability studies, namely the 5s, 10s, and 100s rules. It is emphasized that the researcher should include at least five individuals per item in order to perform a factor analysis. If there is no problem in reaching out to the sample, it is recommended that the number of individuals per item be 10 (Tavşancıl, 2010). Accordingly, to carry out the validity and reliability study for the COVID-19 Pandemic-Related Perceived Stress Scale consisting of ten items, 10 students were included per item and the sample size was then calculated as 100 students. 412 students who met the research criteria were included in the sample.

### Instruments

The data of the study were collected using the “Socio-demographic Data Form” bearing the introductory information which was developed by

the researchers and the “COVID-19 Pandemic-Related Perceived Stress Scale”.

**Socio-demographic Data Form:** This questionnaire developed by the researchers consists of 14 questions aiming to determine the socio-demographic characteristics of nursing students (academic year, age, gender, number of siblings, employment status, income level, and educational background).

**COVID-19 Pandemic-Related Perceived Stress Scale:** The “COVID-19 Pandemic-Related Perceived Stress Scale”, developed and published by Campo-Arias et al., is a 10-question scale. It was prepared as a 5-point Likert type scale. Each item of the scale is scored as 0=never, 1=rarely, 2=sometimes, 3=often, 4=always. Items 1, 2, 3, 9, and 10 of the scale were coded directly to score from 0 to 4 whereas items 4, 5, 6, 7, and 8 were reverse coded to be scored from 4 to 0. The scores to be obtained from the scale range between 0 to 40. The recommended cut-off point for high perceived stress is 25 or above. For the purpose of the study, the perceived stress level score is classified as low (1-13), moderate (14-26) and high (27-40). The reliability coefficient, in the reliability study conducted for the original scale applied to Columbia University students, was determined as 0.86.

### Language Validity

For language validity purposes, the scale was independently translated from English to Turkish by two Turkish-native English linguists. The researchers then created a common Turkish text by evaluating the most appropriate translation for each item. The scale, which was translated into Turkish, was re-translated back into English by two linguists who were fluent in both Turkish and English and then compared with the original scale. Inappropriate expressions were reviewed and language validity was confirmed.

### Content Validity

After the language validity was confirmed, the draft scale was presented to the opinion of 20 experts in the field of nursing. Experts were asked to evaluate the draft scale items in terms of both language and content. Suggestions from experts were scored as “4” if no change was suggested in the item, “3” if a minor change was suggested, “2” if a major change was suggested, and “1” if the item was interpreted as inappropriate/should be removed. Content Validity Index for each item (I-CVI) was then calculated using the formula as one less than the ratio of the number of experts giving a rating of

either 3 or 4 for the relevant item to the total number of experts.

### Implementation

The intelligibility and implementation process of the developed draft scale were evaluated by applying the scale to the people who were not included in the sample for a pilot scheme.

### Construct Validity

Explanatory and confirmatory factor analysis were used for construct validity.

### Confirming the Reliability

Cronbach alpha coefficient computation, Split Half Correlation, and item-total scale analysis were performed to confirm the reliability of the scale.

### Statistical Analysis

The data were coded in SPSS software, thereafter the introductory information was distributed in numbers and percentages. Expert opinions were sought in order to retest the validity of the statements to confirm the validity of the scale. Cronbach Alpha and McDonald Omega were used to determine the internal consistency of the scale and sub-dimensions, whereas Pearson correlation analysis and split-half analysis were used for the item-total score analysis of the scale and sub-dimensions. The additivity of the scale was evaluated using the Tukey additivity analysis. Response bias in the scale was evaluated with the Hotelling T-square test. In order to determine the item-factor relationship, the data set was divided into two and an Explanatory Factor Analysis (EFA) was performed with the first half. Principal Axis Factoring (PAF) was used as the estimation method and Promax Rotation was used as the rotation technique in explanatory factor analysis. The eigenvalue was considered as 1 in determining the factor. The factor loading coefficient was determined as 0.32 in deciding which sub-dimension to include the item. Whether the items and sub-dimensions explained the original structure of the scale was evaluated by Confirmatory Factor Analysis (CFA). Confirmatory Factor Analysis was performed with the second half of the data set. Multiple correlation analysis was performed before confirmatory factor analysis and it was determined that there was no multicollinearity between the items. Correlation matrix was used for explanatory factor analysis and covariance matrix was used for confirmatory factor analysis. Convergent and divergent validity analyzes were performed based on CFA. The margin of error in the evaluation of the data was taken as  $p=0.05$ . SPSS 24.0, AMOS 24.0, and JAMOVI 2.2 were used for statistical analysis.

## Results

Of the students participating in the study, 83.5% ( $n=344$ ) were determined to be female, 35% ( $n=144$ ) were studying in the first academic year of the university, 23.3% ( $n=96$ ) were sophomores, 25.7% ( $n=106$ ) were juniors and 16% ( $n=66$ ) were seniors. It was determined that 85.2% of the students ( $n=351$ ) graduated from Science and Anatolian High Schools. It was found that 67.2% ( $n=277$ ) of the students have voluntarily preferred to study in their department, 44.7% ( $n=184$ ) have resided in their family's home, the average number of siblings is 3.2 and the average number of individuals living at home is 4.9, 82.3% ( $n=339$ ) had a family income equal to their expenses, 3.4% ( $n=14$ ) were already employed, only the father of 69.4% ( $n=286$ ) has been working, 55.3% ( $n=228$ ) of the students have lived in a metropolis for the longest time, fathers of 32.8% ( $n=135$ ) were high school graduates and the mothers of 43.9% ( $n=181$ ) of the participants were primary school graduates.

Kaiser-Meyer Olkin (KMO) coefficient was 0.838, whereas Bartlett test  $X^2$  value was determined as 819.742 and  $p=0.000$ . As a result of EFA, it was determined that the scale consisted of two sub-dimensions. The first sub-dimension of the scale explained 37.320% of the total variance and the second sub-dimension explained 13.093% of the total variance. Two sub-dimensions explained 50.413% of the total variance. It was determined that the factor loads of the first sub-dimension of the scale ranged between 0.569-0.871 and the factor loads of the second sub-dimension ranged between 0.529-0.810 (Table 1).

**Table 1.** The results of the explanatory factor analysis ( $n=206$ )

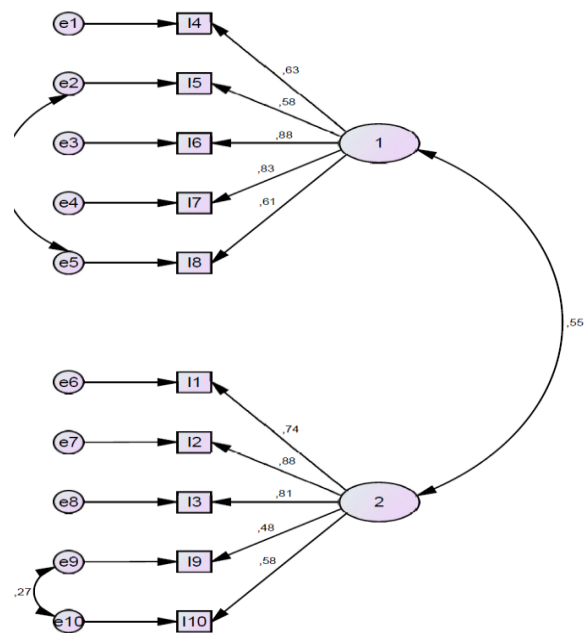
Items	Factor Loads	
	1. Sub-dimension	2. Sub-dimension
I1		0.637
I2		0.794
I3		0.810
I4	0.579	
I5	0.611	
I6	0.870	
I7	0.871	
I8	0.569	
I9		0.529
I10		0.595
Eigenvalue	3.732	1.309
Explained Variance (%)	37.320	13.093
Explained Variance (%) Total	50.413	
KMO	0.838	
Bartlett $X^2$ (p)	819.742 ( $p<0.001$ )	

I=Item



The calculated chi-square value of the two-factor model was 70.157 and the degrees of freedom were 32 and  $p=0.000$ .  $X^2/SD$  is determined as 2.192. The fit indices were calculated as follows: RMSEA=0.076, GFI=0.936, CFI=0.957, IFI=0.958, TLI=0.940 and NFI=0.925. CFA results revealed that the factor loads of the first sub-dimension of the scale ranged between 0.58-0.88 and the factor loads of the second sub-dimension ranged between 0.48-0.88 (Table 2).

The convergent and discriminant validity of the scale was examined in line with the CFA analysis results (Figure 1). The results of the analysis revealed that the CR value in both sub-dimensions was greater than 0.70, the AVE value was above 0.50, and  $CR > AVE$ . This result showed that the scale had convergent validity. The results of the analysis further revealed that  $MSV < AVE$ ,  $ASV < AVE$ , and the square root of AVE was greater than the correlation between the factors. These findings revealed that the discriminant validity is confirmed for this scale (Table 3).



**Figure 1.** Confirmatory Factor Analysis (CFA)

**Table 2.** Confirmatory factor analysis model fit indices (n= 206)

	$X^2$	SD	$X^2/SD$	RMSEA	GFI	CFI	IFI	TLI	NFI
<b>Two-Factor Model</b>	70.157	32	2.192	0.076	0.936	0.957	0.958	0.940	0.925

**Table 3.** Convergent and discriminant validity results (n= 206)

Sub-dimension	CR	AVE	MSV	MaxR(H)	1	2	ASV
<b>1</b>	0.837	0.514	0.300	0.880	<b>0.717</b>		0.300
<b>2</b>	0.832	0.508	0.300	0.878	0.548*	<b>0.713</b>	0.300

\* $p < 0.001$ , CR= Composite Reliability, AVE= Average Variance Extracted, MSV= Maximum Squared Variance, ASV= Average Shared Squared Variance

The Cronbach's Alpha Coefficient of the whole scale was determined as 0.858. The Cronbach's alpha coefficient was calculated as 0.821 and 0.836 respectively for the first sub-dimension and the second sub-dimension. The results of the split-half analysis revealed that the Cronbach's Alpha coefficient of the first half was 0.717 and the Cronbach's Alpha coefficient of the second half was 0.757. The correlation between the two halves was found to be 0.802. Spearman-Brown Coefficient was calculated as 0.890 and Guttman's Split-half Coefficient was calculated as 0.890. The McDonald Omega coefficients were 0.860, 0.827, and 0.843 respectively for the scale, for the first sub-

dimension, and the second sub-dimension. Whether the scale is additive or not was examined by Tukey additivity analysis and it was determined as  $F=0.253$  and  $p=0.615$ . Analysis results showed that the scale was additive.

The Hotelling T-square test was used to determine whether there was a response bias in the scale and the Hotelling T-square value was found to be 540.959,  $F=58.937$ , and  $p=0.000$ . As a result of the analysis, it was determined that there was no response bias in the scale (Table 4).

It was determined that the correlations of the scale items with the scale total score ranged between 0.480 and 0.618. It was determined that the correlations of the scale items with the total sub-dimension scores ranged between 0.499 and 0.734.

It was determined that there was no item that significantly increased the Cronbach's alpha coefficient if removed from the scale (Table 5).

**Table 4.** Reliability analysis results of the COVID-19 Pandemic-Related Perceived Stress Scale (n=412)

	Cronbach Alfa	McDonald Omega	Split-Half Analysis				Correlation between two halves	Mean $\pm$ Standard Deviation
			First half Cronbach Alfa	Second half Cronbach Alfa	Spearman-Brown	Guttman Split-half		
<b>Scale Total</b>	0.858	0.860	0.717	0.757	0.890	0.890	0.802	18.33 $\pm$ 7.09
<b>First sub-dimension</b>	0.821	0.827						20.00 $\pm$ 9.52
<b>Second sub-dimension</b>	0.836	0.843						20.00 $\pm$ 8.81

**Table 5.** Item mean, item standard deviation, Cronbach's Alpha when the item is deleted, item scale total score, and sub-dimension total score correlations (n=412)

Items	Cronbach's Alpha when Item is Deleted	Corrected Item-Total Score Correlation ( <i>r</i> )*	Corrected Item-Sub-dimension Score Correlation ( <i>r</i> )*
<b>I1</b>	0.845	0.565	0.613
<b>I2</b>	0.842	0.593	0.696
<b>I3</b>	0.841	0.609	0.687
<b>I4</b>	0.843	0.588	0.590
<b>I5</b>	0.852	0.483	0.564
<b>I6</b>	0.841	0.618	0.734
<b>I7</b>	0.841	0.608	0.719
<b>I8</b>	0.844	0.572	0.594
<b>I9</b>	0.852	0.480	0.499
<b>I10</b>	0.846	0.546	0.587

\*Significant at  $p < 0.001$ , I=Item

## Discussion

The fit index of the Scale was found to be above 0.80 in terms of both the item and the scale. Results of the content validity analysis revealed that the scale confirmed the language and content validity and that it measures the subject as adequately as the original construct for the Turkish sample (Jonhson and Christensen, 2014; Karagöz, 2016; Özdamar, 2016; Kartal and Bardakçı, 2018; Seçer, 2018; Campo-Arias et al., 2021). For the purposes of this study, which was conducted to determine the validity and reliability of the Turkish version of the COVID-19 Pandemic-Related Perceived Stress Scale developed by Campo-Arias et al. in 2021, 20

experts were consulted for language and content validity.

As a result of the explanatory factor analysis performed for this study, it was determined that the scale explained more than half of the total variance in the Turkish sample and the exploratory factor analysis load values were greater than 0.50. The literature states that for the scale to have a strong structure, it should explain at least half of the variance, and factor loads should be above 0.40 (Özdamar, 2016; Karagöz, 2016; Kartal and Bardakçı, 2018; Seçer, 2018). The explanatory factor analysis results derived in this study revealed that the structure measuring the stress levels with regard to COVID-19 determined by the original

scale is similar to the structure in the Turkish sample, the explained variance and factor loads are compatible and the scale was able to adequately measure the stress levels with regard to COVID-19 in the Turkish sample as well (Jonhson and Christensen, 2014; Kartal and Bardakçı, 2018; Seçer, 2018; Campo-Arias et al., 2021).

As a result of the confirmatory factor analysis performed in this study, it was determined that factor loads were greater than 0.50, RMSEA value was below 0.08 and other fit indices were greater than 0.90. CFA results were also found to be compatible with the original scale (Campo-Arias et al., 2021). The literature further states that high factor loads obtained in the CFA and the fit indices within the determined limits indicate that the structure determined by the EFA in the scale is confirmed, the scale is capable of measuring the desired concept adequately and accurately without confusing it with another concept (Kartal and Bardakçı, 2018; Seçer, 2018). The compatibility of the EFA and CFA in this study and the confirmation of the original scale's structure for the Turkish sample proved that the scale could adequately and accurately measure COVID-19 stress on the Turkish sample (Jonhson and Christensen, 2014; Karagöz, 2016; Özdamar, 2016; Kartal and Bardakçı, 2018; Seçer, 2018; Campo-Arias et al., 2021).

Furthermore, the convergent and discriminant validity of the scale was examined in line with the CFA analysis results. The results of the analyzes indicated that the scale was capable of measuring the desired concepts without confusing them with another concept, the items were highly correlated with their own sub-dimensions while the relationship with the other sub-dimension was low and the items were determined appropriately for each sub-dimension (Jonhson and Christensen, 2014; Karagöz, 2016; Kartal and Bardakçı, 2018; Seçer, 2018). As the convergent and divergent validity analysis was not performed in the original scale, the results could not be compared in this context (Campo-Arias et al., 2021).

In this study, it was determined that the Cronbach Alpha and McDonald Omega coefficients were above 0.80 for both the total scale and its sub-dimensions, therefore the scale was highly reliable. It was emphasized in the literature that higher Cronbach's alpha and McDonald's Omega coefficients indicate that the items are compatible with each other and they exclusively measure the construct that is intended to be measured (Karagöz, 2016; Kartal and Bardakçı, 2018; Seçer, 2018). The

high-reliability coefficients in this study indicated that the Turkish version of the scale can measure the concept desired to be measured by the original scale on the Turkish sample and the items are compatible with each other (Jonhson and Christensen, 2014; Özdamar, 2016; Seçer, 2018). The results of the split-half analysis in this study also supported the results of Cronbach's alpha and McDonald's Omega. The Cronbach Alpha coefficient was found to be compatible with the original scale and since McDonald's Omega and Split-half results were not presented for the original study, no comparison could be made in this context (Seçer, 2018; Campo-Arias et al., 2021). These results confirmed that the scale was highly reliable for the Turkish sample.

The literature particularly emphasized that an additivity analysis is required if interpretations are to be made on the total score obtained from the scales. The results of the Tukey Additivity analysis conducted in this study revealed that interpretations can be made on the total score obtained from the scale. As additivity analysis was not performed for the original scale, the results could not be compared in this regard (Jonhson and Christensen, 2014; Karagöz, 2016; Özdamar, 2016; Kartal and Bardakçı, 2018; Seçer, 2018; Campo-Arias et al., 2021).

In order to obtain accurate results in the scales, there should be no response bias (Karagöz, 2016; Seçer, 2018). As a result of the response bias analysis carried out within the scope of this study, it was determined that all participants filled in the scale in line with their own opinions and no bias would affect the results of the scale. As the response bias was not analyzed for the original scale, no comparison could be made in this regard (Johnson and Christensen, 2014; Karagöz, 2016; Özdamar, 2016; Kartal and Bardakçı, 2018; Campo-Arias et al., 2021).

The item-total score analyzes in this study showed that the items in the scale were highly correlated with the whole scale. These results revealed that the items adequately measured the construct intended to be measured and the scale was highly reliable. As the item-total score correlation analysis of the original scale and its sub-dimensions were not performed, no comparison could be made in this regard (Jonhson and Christensen, 2014; Karagöz, 2016; Özdamar, 2016; Kartal and Bardakçı, 2018; Seçer, 2018; Campo-Arias et al., 2021).

### Conclusion and Recommendations

The results of this study revealed that the scale is a valid and reliable measurement tool for the Turkish sample. The scale is confirmed to be a valid and reliable tool that can be used to evaluate the current mental state/problems of Turkish individuals. It is suggested to use the scale in both healthy and clinical samples and to plan further studies with cross-cultural comparisons.

Current trends such as increasing population, globalization, urbanization, and climate change are expected to increase the number and severity of new global pandemics in the future. Perceived Stress Scale can be used as a reference to take measures against anxiety, worry, perceived threat, and stressors and to evaluate the current mental state/problems of nursing students.

### Limitations of the Study

The fact that the study was carried out in a single university and with the participation of nursing students can be stated as the limitations of the study. It is possible to say that these limitations may affect the generalization of the results of the study.

### Acknowledgments

We thank all those who participated in this study.

**Ethics Committee Approval:** As the research subject covers the COVID-19 pandemic, first, an online application was made to the Ministry of Health Scientific Research Platform, and the necessary permission was obtained. In order to adapt the COVID-19 Pandemic-Related Perceived Stress Scale into Turkish, necessary permission was obtained from Adalberto Campo Arias (2022) who developed the scale via e-mail. Ethical Approval approval was received from the Bursa Uludag University Faculty of Health Sciences Research and Publication Ethics Committee (2022-02/ Decision No: 10). The title, purpose, and confidentiality principles of the research were explained to the participants, thereafter the participants were explained that the collected data would be reported anonymously and that their names would be kept confidential.

**Peer-review:** External referee evaluation.

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### What did the study add to the literature?

- Although the pace of the pandemic has slowed down, what course the COVID-19 pandemic will follow on a global scale is not clear.
- Current trends such as increasing population, globalization, urbanization, and climate change are expected to increase the number and severity of new global pandemics in the future.
- COVID-19 Pandemic-Related Perceived Stress Scale can be used as a reference to take measures against anxiety, worry, perceived threats, and stressors and to evaluate the current mental state/problems of nursing students.

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