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COVID-19 kaygı ölçeğinin geçerlik ve güvenirlik çalışması

A study on validity and reliability of COVID-19 anxiety scale

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ÖZ

Bu çalışmada, Türk halkının yeni koronavirüse yönelik kaygı düzeyini belirlemek amacıyla COVID-19 Kaygı Ölçeği geliştirme çalışması yapılmıştır. Çalışmanın verileri 1 Mayıs-15 Haziran 2020 tarihleri arasında sosyal ağlar aracılığı ile Türkiye'nin 70 ilinden iki aşamalı olarak toplam 1075 kişiden toplanmıştır. Açımlayıcı faktör analizi için 415 kişiden, doğrulayıcı faktör analizi için 649 kişiden veri toplanmıştır. İlk örneklemden elde edilen veriler üzerinde bir dizi açımlayıcı faktör analizi yapılmıştır. Açımlayıcı faktör analizleri sonucunda 17 maddeden oluşan ölçekten 9 madde çıkarılarak "aşırı-tepki" ve "aşırı koruma-hijyen" olmak üzere iki boyuttan ve sekiz maddeden oluşan bir yapı ortaya konmuştur. COVID-19 Kaygı Ölçeği'nin açımlayıcı faktör analizi ile ortaya konan yapısının uygunluğu ikinci örneklem verisine uygulanan doğrulayıcı faktör analizi ile test edilmiştir. Doğrulayıcı faktör analizi bulguları COVID-19 Kaygı Ölçeği'nin iki faktörlü yapısının model veri uyumunun mükemmel düzeyde sağlandığını göstermektedir. Bir diğer geçerlik kanıtı olarak COVID-19 Kaygı Ölçeği'nin cinsiyet gruplarında ölçme değişmezliği incelenmiş ve metrik değişmezlik sağlanmıştır. Buna göre faktör varyansları ve yapıları cinsiyet grupları arasında karşılaştırılabilmektedir. Ölçeğin yakınsak geçerliği faktör yükleri, birleşik güvenirlik ve çıkarılan ortalama varyans değerleri aracılığı ile incelenmiştir. Tüm değerler yakınsak geçerlik için belirlenen kritik değerleri sağlamaktadır. Faktörler arası korelasyon, faktörlerin açıkladığı ortalama varyanstan düşük olduğundan ölçeğin ayırt edici geçerliği de sağlanmıştır. Ölçeğin güvenirliği cronbach alfa ve birleşik güvenirlik ile incelenmiştir. Her iki güvenirlik katsayısı da COVID-19 kaygı Ölçeği'nin iyi düzeyde güvenilir olduğunu göstermektedir.

Anahtar Sözcükler: COVID-19, kaygı, aşırı-tepki, aşırı koruma-hijyen

ABSTRACT

This study is aimed to develop the anxiety scale toward novel corona virus in Turkish public. The online questionnaire surveyed 1075 individuals from the general population of 70 provinces of Turkey who completed the questionnaire via social networks from May 1 to June 15, 2020. Two different samples were used in this study. In first step, 415 data were collected in second step 649 data was obtained for confirmatory factor analysis. A series of exploratory factor analyses were conducted on data obtained from the first sample. As a result of the exploratory factor analysis, 9 items were removed from the scale consisting of 17 items. The final COVID-19 Anxiety Scale consisting of two factors, which are Overreaction and Overprotection- Hygiene, and eight items, have been found as capable to measure the anxiety towards COVID-19. The construct validity of the COVID-19 Anxiety Scale, revealed by exploratory factor analysis, was tested with the confirmatory factor analysis applied to the second sample data. Accordingly, it has been revealed that the two-factor construct of the COVID-19 Anxiety Scale ensures a perfectly model-data fit. Another validity study is the determination of measurement invariance in gender groups of the COVID-19 Anxiety Scale. The results show that metric invariance was provided. Thus, factor variances and structural relationships between groups are comparable. The convergent validity of the scale was examined through item loadings, composite reliability, and average variance extracted values. All of them provide critical values for convergent validity. Since the correlation between the factors was lower than the average variance extracted by the factors, the discriminate validity of the scale was also provided. The reliability of the scale was examined with Cronbach's alpha and composite reliability. Both reliability coefficients show that the COVID-19 Anxiety Scale is reliable at a good level.

Keywords: COVID-19, anxiety, overreaction, overprotection- hygiene

INTRODUCTION

The novel Coronavirus (COVID-19) were reported in Wuhan, China, and the rapid effuse of the virus has become a global health threat in December 2019 (Wang, Horby, Hayden & Gao, 2020). Symptoms of coronavirus infection include; fever, cough, sore throat, myalgia, chills, nausea and vomiting (Wang, et al., 2020). In addition to the physical effects, COVID-19 has critical effects on people's mental health (Bai et al., 2020).

Health crises like the COVID-19 pandemic lead to psychological changes. During the virus epidemic, a wide variety of psychological consequences have been seen at the individual, community, national and international levels (Zhang,2020). As personal, people are more lprobably to experience a fear of getting sick or dying, feeling desperate, and being stereotyped by others (Hall & Chapman,1995). The pandemic has a detrimental effect on the mental health of the population, which can lead to psychological crises (Zhang, 2020).

Outbreak and spread of COVID-19 has caused confusion, anxiety and fear among people as it is a novel disease with highly devastating effects globally. Especially with the confirmation of China on 20 January that the COVID-19 is transmitted from person to person and with the social media entries stating that some healthcare personnel in Wuhan were infected the level of anxiety of the public started to increase and that led to an important level of medical mask and alcohol shortage in the country (Xinhuanet, 2020).

Anxiety and nervousness in a society affect everyone greatly. Recent evidence shows that individuals in isolation and quarantine experience significant levels of anxiety, anger, confusion, and stress (Brooks et al., 2020). All studies examining psychological disorders during the COVID-19 outbreak reported that individuals showed various signs of mental trauma such as depression, stress, mood swings, irritability, insomnia, and attention deficit (Rubin & Wessely, 2020). Studies have also shown that frequent exposure to the media can cause anxiety and hopelessness (Neria & Sullivan, 2011). Studies conducted in China, the first country affected by the spread of the virus, show that people's fear of the unknown nature of the virus can lead to mental disorders. COVID-19 can affect the mental health of healthcare professionals, families, patients and children - in short, every individual at various levels of society due to the rate at which the virus spreads and the resulting high mortality rate (Rubin & Wessely, 2020).

As a reflection of anxiety, an increase in hygiene behavior is expected. One of the most important steps to prevent the transmission and spread of infections is compliance with hygiene rules. Hygiene is one of the most effective ways to prevent the transmission and spread of microorganisms that cause infection in the community (Stevenson, 2009). Hygiene behaviors are a set of practices and behaviors related to preventing the transmission of infections and are very important in combating a highly contagious infection such as Covid 19 (Brooks, et al., 2020). Good hygiene practices can reduce the risk of contracting and spreading infection and thus improve quality of life (Brooks, 2020). As a result; Covid-19 pandemic affects physical health as well as mental health and increases disease anxiety in particular for coronavirus (Brooks, et al., 2020).

The lack of a definitive treatment method in the fight against the new Covid 19, the rapid spread of false information on social media, the emergence of stigma and discrimination, the economic and social effects of the pandemic increases the level of anxiety of the society (World Health Organization, 2020). Similar situations appeared in Turkey on 11 March 2020 with the emergence of the first case. People experienced extreme levels of fear and panic. For this reason, the public flocked to pharmacies in the same night with the occurrence of the first case in Turkey to get medicines with active ingredients such as hydroxychloroquine sulphate, etc. that were tried in the treatment process of COVID-19 and the state recalled such drugs from pharmacies to prevent misuse thereof. This study is particularly relevant for identifying distinct factors of anxiety that can be used for evaluating COVID-19 anxiety. For this purpose, the validity and reliability study of the COVID-19 anxiety scale is conducted.

METHODS

Participants

This research is conducted with the 1075 individuals via online questionary from 70 cities in Turkey. Table 1 shows demographic distribution of the participants. Two different samples were used in this study. In first step, 415 data were collected for exploratory factor analysis (EFA). In second step 649 data were collected for confirmatory factor analysis (CFA).

Table 1
Demographic Distribution of the Participants

		Sample 1		Sample 2	
		f	%	f	%
Gender	Female	245	59.0	355	54.7
	Male	170	41.0	294	45.3
Marital Status	Married	157	37.8	254	39.1
	Singe	258	62.2	395	60.9
Age Status	18 to 65 Years Old	344	82.9	585	90.1
	Above 65 Years Old	71	17.1	64	9.9
Participants Living	Urban	376	90.6	588	90.6
	Rural	39	9.4	61	9.4
Occupation Status	Occupied	176	42.4	270	41.6
	Not Occupied	58	14.0	93	14.3
	Student	181	43.6	286	44.1

Data Collection

The data of this study were collected through an online Corona Virus Pandemic Questionnaire using Google forms. Data for the first sample were collected between May 1 and May 10, and the second sample between June 5 and June 15. Individuals agreeing to participate were asked to complete the online self-reported questionnaire through social media.

COVID-19 Anxiety Scale

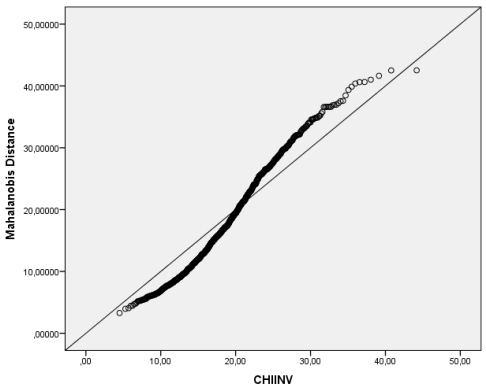
The Covid-19 Anxiety Scale has been developed similarly to the Likert (1932) scaling approach to measure the level of trait anxiety about novel coronavirus infection. Trait anxiety is an individual's predisposition to anxiety experience. This can also be referred as the tendency to perceive the situations the person is in as stressful or interpret them as stress. In development of the scale items, the relevant literature was examined and 17 items were drafted independent of - culture using the coronavirus anxiety items included in the semi-structured questionnaire developed by Roy, Tripathy, Kumar Kar, Sharma, Verma, Kaushal (2020) to measure awareness, attitude, anxiety and mental health needs against the novel coronavirus. Opinions of 2 psychologists, 1 public health expert and 2 measurement and evaluation experts were obtained to verify the item pool of the scale, and the necessary corrections were made on the items and the categories were “Always (5)”, “Often (4)”, “Sometimes (3)”, “ Occasionally (2) ”and“ Never (1) ”5-point Likert type, 17 scale items thought to measure the state of anxiety about Covid-19 formed the pilot form of the scale.

Data Analysis

Within the scope of the validity study of the Covid 19-Anxiety Scale, EFA was used first to reveal the factor construct of the scale. First of all, EFA assumptions were tested. Firstly, the assumptions of the factor analysis which are missing data, outliers, normality, multicollinearity, and singularity examined for the first sample (Tabachnick & Fidel, 2007). The items of the scale

transformed to the standard z score for testing univariate outliers, and 15 observations with all standard scores outside the ±4 z score range were excluded from the data set. Multivariate outliers were examined through Mahalanobis Distance (MU). Due to their MU values exceed the critical $\chi 2$= 40.79 values (α = 0.001 and df= 17) the five observations were removed from the data set. The skewness and kurtosis cofficients are calculated fot testing univariate normality. Except for "item-5", skewness coefficients of all items are between the range -0.774 and 1.991 and do not exceed ±3 (Chou & Bentler, 1995), kurtosis coefficients are in the range of -1.239 and 1.564 and not over ±10 (Kline, 2005). Alpar (2011) suggests that for providing multivariate normality assumption, the scatter plot drawn by the inverse cumulative chi-square values and the squared Mahalanobis distance (m_i^2) have to be linear (see figure 1). Binary correlations between the items were calculated for testing the multicollinearity problems in the data, and there were no correlations exceed the critical value of r = 0.85 (Kline, 2005). However, when the correlation matrix consisting of simple linear correlation coefficients between items and item total correlations were examined, it was observed that the correlations of three items (item 3 - item 4 - item 5) with most items were below 0.20, and item total correlations were 0.015, 0.10 and 0.048, respectively. Since item total correlations were below .30 (Nunnaly & Bersntein, 1994), factor analysis was performed after removing these items from the data set. Consequently, 20 of 415 data and 3 of 14 items were removed after testing factor analysis assumptions. Comrey and Lee (1992) suggested that 300 people was an effective sample size for factor analysis, while Kline (2005) stated that 200 people was sufficient. The suitability of the data set of the COVID-19 Anxiety Scale for EFA was examined using Kaiser-Meyer-Olkin (KMO) and Bartlett tests. In factor analysis studies in social sciences, it is considered sufficient to have a KMO value of 0.60 and above (Kline, 2005). In this study, principal component analysis is applied for factor extraction and, Equamax, one of the oblique rotation methods, has been preferred as the rotation method. Then the accuracy of this construct was tested with CFA. Confirmatory factor analysis was performed based on the weighted least squares (WLS) estimation method with the asymptomatic covariance matrix calculated from the Pearson correlation matrix (Joreskog 1999). Examining the limit values of goodness of fit indexes in the literature, it is reported that the ratio of $\chi 2$ / df should be less than 3 (Kline, 2011); CFI, GFI, TLI and IFI values in the 0.90-1.00 range (Bentler and Bonnet, 1980; Tucker and Lewis, 1973); and for RMSEA should be between 0 and 0.08 (Hooper, Coughlan, & Mullen, 2008). Another study conducted to test validity of the Covid-19 Anxiety Scale was the determination of measurement invariance in gender groups. In this study, measurement invariance was tested in gender groups with multiple group confirmatory factor analysis. Cronbach-alpha cofficient is used for testing internal consistency reliability of the scale. Indicator reliability and convergent validity were examined by average variance extracted (AVE) and composite reliability (CR). EFA were done with SPSS 20.0, CFA and measurement invariance was tested with Mplus 7.3.

Figure 1
Scree Plot



Research Ethics

All the rules stated in the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed in the entire process from the planning, implementation, data collection to the analysis of the data. None of the actions specified under the second section of the Directive, "Scientific Research and Publication Ethics Actions" have been carried out.

During the writing process of this study, scientific, ethical and citation rules were followed; no falsification was made on the collected data and this study was not sent to any other academic media for evaluation.

All participants gave their informed consent to participate in the study, and it was approved by the local ethics committee of the Yozgat Bozok University Declaration.

Ethical committee permission information

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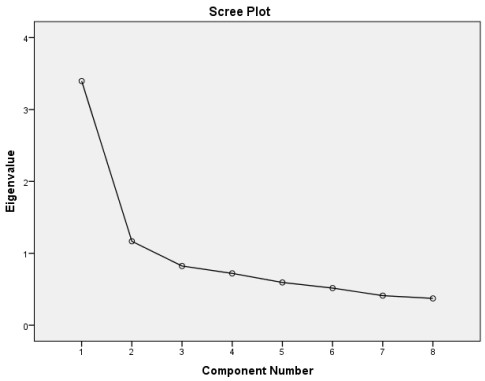
FINDINGS

Exploratory Factor Analysis

KMO is around 0.90, and Bartlett test is significant at the 0.01 level (χ^2 = 2776.592; df = 91, p = 0.000) in this study. These test results illustrate that the data matrix of the COVID-19 Anxiety Scale consisting of 14 items was suitable for factor analysis. The factor analysis was repeated by removing 6 items with a factor load value below 0.40, loaded under more than one factor and the difference between load values was less than 0.10 from the scale. As a result of the repeated factor analysis, 2 factors with an eigenvalue above 1.00 were observed. The eigenvalue of the first factor is 3.396, and the contribution of this factor to the total variance is 42.45%. The eigenvalue of the second factor is 1.167 and its contribution to the total variance is 14.59%. Also, Figure 2 shows that the items stay under two factors. The factor loadings of the remaining 8 items were found to vary between 0.573 and 0.733, without being subjected to rotation. After applying the Equamax oblique rotation technique, it was observed that the factor loads varied between 0.709 and 0.800.

Figure 2
Eigen values based on the factors



As a result of the factor analysis repeated with oblique rotation, the eigenvalue of the first of the two factors with an eigenvalue above 1.00 was 2.708 and the variance explained was 33.85%; the eigenvalue of the second factor is 1.855 and the variance explained is 23.18%. These two factors explain 57% of the total variance. The factors were named by examining the content of the items collected under two factors. In the first factor, there are 5 items with factor loads

ranging from 0.593 to 0.800, and this factor was named as "Overreaction" because these items measure the overreaction state caused by anxiety caused by Covid-19. Anxiety is a feeling of uneasiness and worry, usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as menacing (Iacobacci, 2017). In the second factor, there are 3 items with factor loads ranging from 0.709 to 0.777, and this factor was named as "Overprotection-Hygiene" because these items measure hygiene-based safety behaviors that emerge with anxiety towards Covid-19. As a reflection of anxiety, an increase in hygiene behavior is expected (Brooks, et al., 2020).

There is a moderate positive (r = .45) significant (p <.01) relationship between these two factors. As a result of EFA, it was revealed that the "Anxiety Scale for Covid-19" created a two-factor construct consisting of 8 items in total.

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was applied to a sample of 649 people in order to verify the two-factor structure of the COVID-19 Anxiety Scale, that consists of 8 items, which was determined as a result of the exploratory factor analysis. First, the assumptions of the second sample were tested and CFA was applied to the remaining 622 people. Table 2 shows CFA results regarding the two-factor construct of the scale.

Table 2
Factor Analysis Findings of Covid-19 Anxiety Scale

Items	Item loadings of EFA		Item loadings of CFA			
	Over-reaction	Over-protection-Hygiene	Over-reaction	Over-protection-Hygiene	M	Sd.
From the last week, i feel paranoid about contacting the novel Corona Virus infection	**0.800**		0.69		2.05	1.08
From the last week, I have not been falling asleep because of worrying about the corona virus pandemic.	**0.798**		0.71		1.64	0.93
From the last week, I am afraid of corona virus posts on social media.	**0.695**	0.210	0.74		1.99	1.04
From the last week, I feel i need the stock the necessary materials for the home.	**0.651**	0.344	0.50		2.10	1.05
From the last week, I'm afraid to find out that someone around me is sick.	**0.593**	0.144	0.65		2.97	1.26
From the last week, I feel the need to use disinfectants.	0.289	**0.777**		0.81	2.90	1.26
From the last week, I feel that I always need to wash my hands.	0.299	**0.742**		0.82	3.54	1.16
From the last week, I need to wear a mask, except for compulsory situations.		**0.709**		0.61	2.56	1.51

Model-Fit Indexes							
χ^2	df	χ^2/df	GFI	CFI	RMSEA	IFI	TLI
55.94	19	2.94	0.98	0.99	0.057	0.99	0.98

Table 2 shows the standardized factor load and goodness of fit indexes obtained through the confirmatory factor analysis of the two-factor construct of the COVID-19 Anxiety Scale. Contribution of items and indicators to related factors is determined by standardized factor loads. Thereby, the factor loads of the items in the "Overreaction" factor were found to be 0.50 to

0.74; and the load values of the items in the "Overprotection-Hygiene" factor vary between 0.61 and 0.82, and these values are higher than the recommended load value of 0.4 (Hair, Black, Babin, Anderson & Tatham, 2014). The goodness of fit indexes in table 2 shows that $\chi 2$ / df is 2.94, CFI, GFI, TLI and IFI values are 0.99, 0.98, 0.99, 0.98 respectively and, RMSEA is 0.057.Accordingly, it has been revealed that the two-factor construct of the Covid-19 Anxiety Scale ensures model data fit, in other words, the two-factor model confirms the construct at a good level.

As seen in Table 3, item-subtest correlations are between 0.437-0.645 for the first factor and 0.518-0.658 for the second factor. The item-test correlation coefficients were between 0.431 and 0.641. All correlations are positive, significant ($p < 0.001$) and over 0.20 (Kalaycı, 2010). These are thought of as discriminant validity coefficients. Therefore, it was determined that each of the items affected the entire scale and this effect was at similar levels.

Table 3
Item-Total Correlation of Covid-19 Anxiety Scale

Factors	Items	Item-Subscale Correlation	Item-Test Correlation	Alpha If Item Deleted
Overreaction	From the last week, i feel paranoid about contacting the novel Corona Virus infection	.574	.589	.800
	From the last week, I have not been falling asleep because of worrying about the corona virus pandemic.	.600	.558	.806
	From the last week, I am afraid of corona virus posts on social media.	.645	.590	.801
	From the last week, I feel i need the stock the necessary materials for the home.	.437	.431	.820
	From the last week, I'm afraid to find out that someone around me is sick.	.569	.567	.803
Overprotection-Hygiene	From the last week, I feel the need to use disinfectants.	.628	.641	.792
	From the last week, I feel that I always need to wash my hands.	.658	.633	.794
	From the last week, I need to wear a mask, except for compulsory situations.	.518	.451	.826

Convergent Validity

Factor loadings of the indicators must examine to set the convergent validity, the factor loading of the indicator, composite reliability (CR) and the average variance extracted (AVE). Convergent validity was indicated by an item factor loading ≥ 0.5 and $p < .05$ (Hair, Black, Babin, &Anderson, 2009), AVE ≥ 0.5, and CR ≥ 0.7 (Fornell & Larcker, 1981). All item loadings which are shown in table 2 are over 0.5. Table 6 shows that the overreaction and overprotection sub-dimentions of the COVID-19 Anxiety Scale and the AVE values of the whole scale are 0.44, 0.57 and 0.49, respectively. The fact that the average variance extracted by the factors is less than 0.5, means that the average of the factor loads is less than 0.70 (Hair, Hult, Ringle, Sarsted, 2014). According to Fornell and Larcker's (1981) study, convergent validity of the construct is still sufficient if the average variance is below 0.5 and the composite reliability is above 0.6. As seen in Table 6, the smallest value of the composite reliability is 0.79. Therefore, it can be observed that the convergent validity of the scale is also ensured.

Discriminant Validity

The empirical difference between the real and the constructed structed can be determined with discriminant validity. It can also detect the difference in overlapping structures with discriminant validity. (Hair, et al.,2014). With using the Fornell & Larcker critrion, the discriminant validity could be evaluated. Also that, it is possible to compare the square root of the mean variance with the correlation of latent structures. (Hair, et al. 2014). According to Table 4, it is seen that the square root of the AVE inferred by each factor is higher than the relationships between factors. Therefore, it was revealed that the discriminant validity of the scale was also provided.

Table 4
Square root of the AVE with the correlation of latent constructs

	Overreaction	Overprotection- Hygiene
Overreaction	$\sqrt{AVE} = 0.7550$	0.529**
Overprotection- Hygiene	0.529	$\sqrt{AVE} = 0.6633$

Measurement Invariance

Table 5 includes the findings of the multi group confirmatory factor analysis (MG-CFA). Sokolov (2019) stated that CFI and SRMR values of measurement invariance with MG-CFA should be taken into account, and to ensure metric invariance and scaler invariance as relative goodness of fit cut-off values it should be as ΔCFI <-0.01 and ΔSRMR <0.01. According to Table 5, the scaler invariance where metric invariance is ensured is very close to the limit value. It is supposed to factor loads between groups are equal in metric invariance. Therefore, factor variance and structural relations can be compared considering groups. According to the results, it is possible to say that the factor structure of the COVID-19 Anxiety Scale is similar for gender groups.

Table 5
MG-CFA Results

	Model	χ^2	df	p	CFI	SRMR
Covid-19 Anxiety Scale	Configural	130.668	38	0.000	0.958	0.041
	Metric	145.073	44	0.000	0.955	0.049
	Scaler	183.187	50	0.000	0.940	0.060
	Metric-Configural	14.405	6	0.025	0.003	0.008
	Scaler- Configural	52.519	12	0.000	-0.018	0.019
	Scaler-Metric	38.114	6	0.000	-0.015	0.011

Reliability Findings

Internal consistency reliability of the Anxiety Scale for Covid-19 has been examined with Cronbach Alpha and composite reliability. When Table 6 is examined, the cronbach alpha value of the scale was calculated as 0.78 for the overreaction factor, 0.76 for the Overprotection-Hygiene factor, and 0.83 for the whole anxiety scale. Composite reliabilities are 0.79 for Overreaction and Overprotection- Hygiene factors, and 0.88 for the entire scale. As the lower limit for Cronbach alpha and composite reliability is between 0.60-0.70 the scale reveals to be reliable (Hair, Hult, Ringle, Sarstedt, 2014).

Table 6
Cronbach Alpha, AVE and Composite Reliability

		Cronbach Alpha	AVE	CR
Factors	Overreaction	0.78	0.44	0.79
	Overprotection- Hygiene	0.76	0.57	0.79
Scale	Anxiety	0.83	0.49	0.88

CONCLUSION

The goals of the research were to develop the COVID-19 Anxiety Scale, and to investigate its factor structure. For these purposes, considering the 5-point Likert scale of the items, an exploratory factor analysis with ordinal data was used. Seventeen items were written to develop the COVID-19 Anxiety Scale. Eigth of them were distributed into two factors. The first factor has 5 items, and named as "Overreaction". These items measure the overreaction state caused by anxiety caused by Covid-19. In the second Factor, has 3 items, and named as "Overprotection-Hygiene" because these items measure hygiene-based safety behaviors that emerge with anxiety towards Covid-19 (Brooks, et al., 2020). As a consequence of the validity and reliability studies, the scale consisting of two factors and eight items has been found as capable to measure the anxiety towards COVID-19.

Limitations of the Study and Suggestions

The limitations of this study is that the developed scale was not compared with another scale measuring anxiety. Accordingly, it is recommended to test criterion-related validity in the next study. In addition, further validity studies of the scale can be conducted by analyzing the differential item functioning in different demographic groups.

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Conflicts of interest

The authors declare none conflict of interest.

Statement of Contribution Rate

The authors of this research article contributed equally to all research processes.

Statement of Publication Ethics

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GENİŞLETİLMİŞ ÖZ

Giriş

Çin'in Wuhan kentinde görülen Yeni Koronavirüs'ün (COVID-19) neden olduğu olağandışı zatürre vakalarının ardından Aralık 2019'da COVID 19 küresel bir sağlık tehdidi haline gelmiştir (Wang, Horby, Hayden ve Gao, 2020).

Koronavirüs enfeksiyonunun yaygın semptomları ateş, titreme, öksürük, boğaz ağrısı, miyalji, bulantı ve kusmadır (Wang ve diğerleri, 2020). Aynı zamanda, COVID-19'un insanların ruh sağlığı üzerinde ciddi etkileri de vardır (Bai ve diğerleri, 2020). Pandemiler, bireysel ve toplumsal çeşitli psikolojik sonuçlar doğurmaktadır (Zhang, 2020). Bireysel düzeyde, insanların hastalanma veya ölme korkusu yaşadıkları, çaresiz hissetme gibi duygulara kapıldıkları görülmektedir (Hall & Chapman, 1995). COVID-19 salgını sırasında yapılan çalışmalarda, bireylerin depresyon, stres, duygu durum dalgalanmaları, sinirlilik, uykusuzluk ve dikkat eksikliği gibi çeşitli zihinsel travma belirtileri bulgulanmıştır (Rubin & Wessely, 2020). Araştırmalarda sıklıkla medya araçlarına maruz kalmanın endişe ve umutsuzluğa neden olabileceği belirtilmiştir (Neria & Sullivan, 2011). Virüsün yayılmasından etkilenen ilk ülke olan Çin'de yapılan araştırmalar, insanların virüsün bilinmeyen doğasından korkmasının ruhsal bozukluklara yol açabileceğini göstermektedir (Rubin & Wessely, 2020).

Enfeksiyonların bulaşmasını ve yayılmasını önlemenin en önemli adımlarından biri hijyen kurallarına uymaktır (Stevenson, 2009). Hijyen davranışları, enfeksiyonların bulaşmasını önlemeyle ilgili bir dizi uygulama ve davranıştır ve COVID-19 gibi oldukça bulaşıcı bir enfeksiyonla mücadelede çok önemlidir (Brooks, et al., 2020). İyi hijyen uygulamaları enfeksiyona yakalanma ve enfeksiyon yayma riskini azaltabilir ve böylece yaşam kalitesini artırabilir (Brooks, 2020). Kaygının bir yansıması olarak, hijyen davranışında bir artış beklenmektedir.

Yeni COVID-19 ile mücadelede kesin bir tedavi yönteminin bulunmaması, sosyal medyada yanlış bilgilerin hızla yayılması, damgalanma ve ayrımcılığın ortaya çıkması, pandeminin ekonomik ve sosyal etkileri toplumun kaygı düzeyini artırmaktadır (Dünya Sağlık Örgütü, 2020). Türkiye'de de 11 Mart 2020 tarihinde ilk vakanın ortaya çıkmasıyla halkın kaygı düzeyi artmış ve bu kaygı ile insanlar eczanelere akın ederek COVID-19'un tedavi sürecinde denenen hidroksiklorokin sülfat gibi etken maddeler içeren ilaçları stoklama eğilimi göstermişlerdir. Benzer şekilde Çin'in 20 Ocak'ta COVID-19'un kişiden kişiye bulaştığını teyit etmesi ve Wuhan'daki bazı sağlık personelinin enfekte olduğunu belirten sosyal medya haberleri ile halkın kaygı düzeyi artmış ve bu durum tıbbi maske, el dezenfektanı kıtlığının yaşanmasına neden olmuştur (Xinhuanet, 2020).

Bu çalışma, özellikle COVID-19 anksiyetesini değerlendirmek için kullanılabilecek farklı anksiyete boyutlarını tanımlamakla ilgilidir. Bu amaçla COVID-19 anksiyete ölçeğinin geçerlik ve güvenilirlik çalışması yapılmıştır.

Yöntem

Bu araştırmanın verileri iki aşamalı olarak 1 Mayıs – 15 Haziran 2020 tarihleri arasında Türkiye'nin 70 ilinden toplam 1075 kişinin katılım gösterdiği çevrimiçi anket yoluyla toplanmıştır. İlk örneklem 415, ikinci örneklem için 649 kişiden oluşmaktadır. Çalışmanın verileri Korona Virüs Salgını Anketi aracılığıyla toplanmıştır. Ölçek maddelerinin geliştirilmesinde, ilgili literatür incelenmiş ve Roy, Tripathy, Kumar Kar, Sharma, Verma, Kaushal (2020) tarafından geliştirilen yarı yapılandırılmış ankette yer alan koronavirüs anksiyete maddeleri kullanılarak 17 madde kültürden bağımsız olarak hazırlanmıştır. COVID-19 Kaygı Ölçeği'nin geçerlik çalışması kapsamında öncelikle ölçeğin faktör yapısını ortaya koymak amacıyla açımlayıcı faktör analizi (AFA) uygulanmıştır. Ardından bu yapının doğruluğu doğrulayıcı faktör analizi (DFA) ile test edilmiştir. Ölçeğin iç tutarlılık güvenilirliği Cronbach-alpha, gösterge güvenirliği ve yakınsak geçerliği ortalama varyans çıkarımı (AVE) ve bileşik

güvenirlik (CR) analizleri ile incelenmiştir. COVID-19'a Yönelik Kaygı Ölçeği'nin geçerliğini test etmek için yapılan bir diğer çalışma cinsiyet gruplarında ölçme değişmezliğinin belirlenmesidir. Bu çalışmada, çoklu grup doğrulayıcı faktör analizi ile cinsiyet gruplarında ölçme değişmezliği test edilmiştir. AFA SPSS 20.0, DFA ve ölçme değişmezliği Mplus 7.3 ile test edilmiştir.

Bulgular

Açımlayıcı faktör analizi sonucunda 17 maddelik taslak formdan kalan 8 maddeden oluşan iki boyutlu bir yapı gözlenmiştir. İlk faktörde faktör yükleri 0.593 ile 0.800 arasında değişen ve COVID-19 kaynaklı kaygı ile ortaya çıkan aşırı tepki eğilimini ölçen5 madde bulunmaktadır. "Aşırı Tepki" olarak isimlendirilen bu faktör toplam varyansın %33.85'ini açıklamaktadır.İkinci faktörde faktör yükleri 0.709 ile 0.777 arasında değişen ve COVID-19'a karşı kaygı ile ortaya çıkan hijyene dayalı güvenlik davranışlarını ölçen 3 madde bulunmaktadır. "Aşırı korunma-Hijyen" olarak isimlendirilen bu faktör toplam varyansın %23.18'ini açıklamaktadır. Bu iki faktör toplam varyansın %57'sini açıklamaktadır. Ayrıca faktörler arasında pozitif yönde orta düzeyde r=.45 anlamlı (p<.01) bir ilişki bulunmaktadır. AFA sonucunda "COVID-19 Kaygı Ölçeği'nin toplam 8 maddeden oluşan iki faktörlü bir yapı oluşturduğu ortaya konmuştur.

COVID-19 Anksiyete Ölçeği'nin doğrulayıcı faktör analizi sonucunda standartlaştırılmış faktör yükleri, "Aşırı tepki" boyutunda 0,50 ile 0,74; "Aşırı koruma-Hijyen" boyutunda 0.61 ile 0.82 arasında değişmekte olup, bu değerler önerilen 0.4 olan yük değerinden yüksektir (Hair, Black, Babin, Anderson ve Tatham, 2014). Uyum iyiliği indeksleri incelendiğinde $\chi 2$ / sd oranının 2.94<3.0 (Kline, 2011); CFI =0.98 ve TLI= 0.99 0.90-1.00 aralığındaki (Bentler ve Bonnet, 1980; Tucker ve Lewis, 1973); ve RMSEA değeri 0.057<0,08 arasında olduğu görülmektedir (Hooper, Coughlan ve Mullen, 2008). Buna göre Covid-19 Anksiyete Ölçeğinin iki faktörlü yapısının model veri uyumunu sağladığı ortaya konmuştur. Cinsiyet gruplarında yapılan ölçme değişmezliği çalışması sonucu metrik değişmezlik sağlanmıştır. Ölçeğin cronbach alpha değeri aşırı tepki alt boyutu için 0.78, aşırı korunma- hijyen alt boyutu için 0.76, ve ölçeğin tamamı için 0.83 olarak hesaplanmıştır. Birleşik güvenirlikler ise aşırı tepki ve aşırı korunma-hijyen alt boyutları için 0.79, ölçeğin tamamı için ise 0.88'dir. Cronbach alfa ve birleşik güvenirlik için alt sınır 0.60-0.70 arasında olduğundan ölçeğin güvenilir olduğu ortaya konmuştur (Hair, ve ark., 2014).

Sonuç

Bu çalışmada Türk halkının COVID-19'a yönelik kaygı düzeyi ölçmeye yönelik COVID-19 Kaygı Ölçeği geliştirme çalışması yapılmıştır. Geçerlik ve güvenirlik analizleri sonucunda COVID_19 salgınına yönelik kaygı durumunu ortaya koyan sekiz maddelik iki faktörlü 5 kategorili Likert türü bir ölçek geliştirilmiştir. Bu ölçekte COVID-19'a yönelik kaygı "aşırı tepki" ve "aşırı korunma-hijyen" davranışları ile tanımlanmıştır. Geçerlik ve güvenirlik çalışmaları doğrultusunda iki faktör ve sekiz maddeden oluşan ölçeğin COVID-19'a yönelik kaygıyı ölçebilir bir yapıda olduğu sonucuna ulaşılmıştır.