

## Reliability and Validity Study of Turkish Form of the Psychological Distress Scale

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### Abstract

*Statement of Problem:* Traumatic events are conceptualized as environmental stressors and affect large numbers of people throughout the world. Psychological problems may arise after being exposed to a stressful event. It is important to have reliable instruments with which to address traumatic events' long term consequences.

*Purpose of the Study:* The purpose of this study is to adapt the Psychological Distress Scale (PDS) into Turkish by examining the results of reliability and validity analyses results of Turkish form of the PDS.

*Method:* This study involved 1144 adults and young people. The self-report PDS was translated into Turkish and named as Psikolojik Yoğun Stres Ölçeği (PYSÖ). Data was collected within two months of the Marmara Earthquake, which occurred in the Marmara region of Turkey in August 1999. Outcome variables also included the measures of state-trait anxiety and Impact of Event. Correlation coefficient, T-test, analyses of variance, Factor analysis, Cronbach's alpha, item-total correlation, and standard error of measurement techniques were used to analyze the data.

*Findings and Results:* In the preliminary analyses, alpha was found to be .79 for the original English PDS forms. Following the translation and back-translation process, for transliterational equivalence adequate correlation values obtained between English and Turkish forms. For criterion-related validity, to examine the construct validity of the PYSÖ, statistically significant correlation values obtained between PYSÖ and Turkish form of State-Trait Anxiety Inventory-STAI. Results suggested that the constructs were relevant to each other. Statistically significant relationships with other similar measures provided evidence for the concurrent validity. For predictive validity, hypotheses testing method was used. Results showed that PYSÖ mean scores were significantly different for gender, experiencing area, removing time from disaster area, having lost a close one, and being a mother. Analysis of variance results showed that age,

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education level, job, and area of residence were also significant factors in the mean scores. According to factor analysis results, PYSÖ had two dimensions but could also be used as a one-dimensional general scale. In order to test reliability, Cronbach's alpha and item-total correlation coefficients techniques were used to assess the internal consistency. The Cronbach's alpha score for the PYSÖ was .83. This was also very similar with Turkish form of the Impact of Events Scale's alpha scores which were obtained from the same groups. These results showed that translated Turkish forms of scale were easily understandable by Turkish groups. Item-total correlation was ranging from .79 to .82 for total group and subgroups. The standard error of measurement technique was also used for reliability analyses and was found to be 2 points at .01 level.

*Recommendations:* PYSÖ can be used to evaluate psychological distress in psychometric assessment process of related studies. Further study is recommended in order to assess the reliability and validity of PYSÖ with different populations and in different stressful events.

**Keywords:** Psychological distress scale, validity, reliability

Reliability and validity studies are topics of major interest for education researches. Reliable and valid Turkish instruments provide opportunities in order to collect reliable and valid data for researchers. Because of the limited equivalent Turkish measurements, researchers need to work on validation of measurements which are originally developed in different languages. Especially in traumatic event exposure, studies there have had very limited measures to investigate psychological effects of traumatic events. Turkey suffered a high magnitude earthquake in August 1999 and thousands of people lost their lives in the Marmara region. Numbers of people were affected physiologically and psychologically from this disaster. These kinds of events impact large numbers of people not only in Turkey, but also throughout the world. Only in the United States, it has been estimated that as many as two million adults suffer injury or property damage each year due to such events (Solomon, 1989). According to 2008 World Health Organization, in recent years statistics there have increased in accident and injury in high, middle, and low income countries (World Health Organization [WHO], 2008). Studies have indicated that these kinds of events have negative impacts on mental health (Freedy & Hobfoll, 1995).

Hobfoll (1988, 1989, 1998) has suggested in Conservation of Resource (COR) theory that extreme events result in widespread loss of resources which, in turn, may lead to stress. As a result of resource loss, stress may occur. These kinds of events that happen to a community are termed traumatic or stressful events and conceptualized as environmental stressors (Hobfoll, 1995, 2001).

Psychological problems may arise after a stressful event exposure. Initial reactions to an unexpected traumatic event may include surprise, helplessness, shock, anger, and confusion, although many of these reactions are resolved in most survivors within a few months (Freedy, Kilpatrick & Resnick, 1992). Post-Traumatic

Stress Disorder (PTSD) symptoms, higher distress levels, anxiety disorders, somatization, and depression have been generally reported as long term mental health consequences from traumatic events (Green, 1990; Solomon, 1989). People who experience high levels of trauma are likely to experience psychological distress. Psychological distress is a state of not only depression but also anxiety. Depressed individuals tend to be anxious while anxious individuals tend to be depressed in a psychological, distressed situation (Mirowsky & Ross, 1989). Different methods are available to assess mental health problems after a traumatic event exposure. Questionnaires and scales have very useful roles in the psychometric assessment process. In order to create a scale, based on individual claims, modified items from these two types of psychological discomfort situations are listed as mood and malaise. There have been some well-known, structured, and standardized instruments originally developed in this area.

One of the very widely used devices for assessing post-traumatic stress is 17 Post-Traumatic Stress Disorder (17 PTSD). PTSD is assessed utilizing the frequency of experiencing 17 PTSD symptoms derived from the Diagnostic and Statistical Manual (American Psychiatric Association [APA], 1987). The Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1990) is specifically designed to yield both continuous (i.e., severity) and dichotomous (i.e., diagnostic) information exclusively for PTSD. Symptom Checklist-90 Revised (SCL-90R) (Derogotis, 1983) is a 90-item self-report inventory designed to assess general psychological distress. General levels of distress can also be measured using instruments such as the 28-item version of the General Health Questionnaire (Goldberg, 1972). The Impact of Events Scale (IES) (Horowitz, Wilner & Alvarez, 1979) is probably the most widely used self-report measure in the field of traumatic stress. It is a 15-item scale assessing subjective distress after a stressful life event. It has two subscales of Intrusion and Avoidance. This Scale was translated into Turkish as "Olayın Etkisi Ölçeği" (OEÖ) and used in several studies after the Marmara Earthquake of 17 August 1999 (Karagüven & Erkin, 2000; Karagüven & Erkin, 2001).

More recent examples of these types of instruments include a 23-item Psychological Distress Manifestations Measure Scale developed by Paulin, Lemoine, Poirer and Lambert (2000) and a 15-item psychological distress scale developed by Patterson (2005).

Despite all of these types of measures, it is still necessary to have a simple and short reliable instrument to determine the consequences of a stressful event exposure. Psychological Distress Scale (PDS) was developed by Freedy, Kilpatrick, Resnick, and Saunders (1994). This 9-item scale has the advantage of being easy to administer and inexpensive to use. An easily scored instrument can be administered alone or together with other measures. The aim of the present study was to examine the results of reliability and validity studies for the Turkish form of PDS in order to introduce a valid and reliable equivalent Turkish instrument for Turkish researchers.

## Method

### *Sample and Procedure*

Two separate sample groups were studied: undergraduate sample and community sample. For the transliteral equivalence study, the undergraduate sample consisted of 100 bilingual university students from English Language Departments of the following two different universities: Boğaziçi and Marmara in Istanbul. The scale was translated into Turkish by bilingual lecturers in two different universities and expert opinion was obtained for the Turkish items. Turkish form of PDS was entitled "Psikolojik Yoğun Stres Ölçeği" (PYSÖ). Undergraduate participants were administered two different test batteries in group settings on two occasions respectively within 2 weeks: first, the English batteries of PDS; and second, translated Turkish batteries of PDS. The community group consisted of 1403 residents from tent cities in earthquake area and Anatolian side of Istanbul. The sample size was different due to the missing values. The number of subjects varied from 1403 to 1144. Correlation coefficient method was used in this study. Data were collected within two months after the Marmara earthquake. Of the data, 70% was gathered from Istanbul and 30% from the disaster area (tent cities). The sample was determined with two big tent cities in disaster area and Anatolian side in Istanbul. Participation was voluntary and individuals were recruited without regard to age or gender. In the community sample, average age was 24 ( $X=24.11$ ,  $S=9.09$ ,  $min.=15$ ,  $max.=55$ ). Of the participants, 60% were male. Of the female participants, 24% were mothers. Across the sample, 1% was illiterate, 5% was primary school graduated, 14% was secondary school graduated, 66% was high school graduated, 10% was university graduated, and 4% had a higher degree of the sample (see table1). All participants were informed about consent.

### *Measures*

*Questionnaire.* Demographic and specific characteristics were of participants determined by a 19-item questionnaire.

*Psychological distress scale.* Psychological Distress Scale (PDS) (Freedy et. al., 1994) was a 9-item symptom checklist, originally developed in English. Items assessed intrapsychic and interpersonal complaints such as intrusive and frightening thoughts, irritability, depressed effect, sleep difficulty, hopelessness, tachycardia, temper outburst, worrying, and feeling critical of others. Participants reported on complaint intensity during the past weeks. The average item response was used as an index of current psychological distress (0 = not at all, 1 = a little bit, 2 = quite a bit). The original form has high alpha values. For a group of adult sample ( $N=299$ ), Coefficient alpha was found as .82 (Freedy et al., 1994).

*State-trait anxiety inventory.* STAI was developed by Spielberger, Gorsuch, and Lusben (1970). The Turkish form of STAI was studied by Öner and Le Compte (1985) and entitled as "Durumluk-Sürekli Kaygı Envanteri" (DSKE). This inventory is a well validated and widely-used Turkish measure to evaluate state and trait anxiety (Öner, 2006). The inventory consists of two forms, each being 20 items in length. First 20 items assess state anxiety and second 20 items assess trait anxiety.

**Table 1****Demographic Variables of Sample**

Variables		N	%
Area	Istanbul	1015	72,3
	Earthquake Area	382	27,2
Missing		6	,4
Total		1403	100,0
Gender	Women	562	40,1
	Men	817	58,2
Missing		24	1,7
Total		1403	100,0
Age	18-28	1033	73,6
	29-38	149	10,6
	39 +	119	8,5
Missing		102	7,3
Total		1403	100,0
Job	Student in high school	198	14,1
	Student in Univ.	796	56,7
	Lecturer in Univ.	73	5,2
	Teacher in high school	88	6,1
	Others	194	14
Missing		54	3,9
Total		1403	100,0
Edu. Level	Illiterate	10	,7
	Primary school	65	4,6
	Secondary school	196	14,0
	High school	892	63,6
	University	135	9,6
	Master and PhD	63	4,5
	Total	1361	97,0
Missing		42	3,0
Total		1403	100,0

Item remainder correlations were higher than .30: .34-.72 for trait anxiety and .42-.35 for state anxiety. Test retest reliability was also studied. Test retest reliability coefficients ranged between .76 and .86 for trait anxiety, and .26 and .68 for state anxiety (Öner & Le Compte, 1985, pp.11-12). Participants rated the degree to which they felt a given way over the previous week and in general. Ratings were made on a 4-point Likert scale, from 1=not at all to 4=very much so for the state form and the trait from 1=not at all to 4=very much so for the trait form. Both state and trait anxiety were used in the present study.

**Impact of events scale.** This scale was developed by Horowitz et al. (1979) and is a 15-item scale assessing subjective distress after a stressful life event. It has two subscales of Intrusion and Avoidance. This Scale was translated into Turkish as "Olayın Etkisi Ölçeği" (OEÖ) and used in several studies after the 17 August 1999 Marmara Earthquake (Karagüven & Erktin, 2000; Karagüven & Erktin, 2001). Respondents were asked to rate the items on a 4-point scale according to how often each had occurred in the past 7 days. The 4 points on the scale are as follows: 0 (not at all), 1 (rarely), 3 (sometimes), and 5 (often).

## Results

At the beginning of the study, for the transliteral equivalence, the original English forms were administered to 100 bilingual university students. Alpha found .79 for this group. Secondly, PYSÖ forms were administered to the same group and the correlation values were .78 ( $P \leq .01$ ) for total score. For the items, correlations were ranging from .64 ( $P \leq .01$ ) to .76 ( $P \leq .01$ ) as shown in Table 2. From these high and statistically significant correlation values it can be concluded that the Turkish and the English forms of the scale were significantly related and similar to each other.

**Table 2**

### *Correlation Coefficients Between Turkish and English Items of the PDS*

Items	N=99
1.	.699**
2.	.702**
3.	.640**
4.	.668**
5.	.762**
6.	.644**
7.	.691**
8.	.715**
9.	.742**

\*\*  $P \leq .01$

## Validity

For criterion-related validity, to examine the concurrent validity of the PYSÖ, the related construct of DSKE (Öner, 1985) was administered along with the PYSÖ. The correlation between PYSÖ and DSKE was statistically significant for both subscales: State Anxiety ( $r = .33$ ,  $P \leq .01$ ) and Trait Anxiety ( $r = .40$ ,  $P \leq .01$ ), suggesting that the constructs were relevant to each other as can be seen in Table 3. Significant relationship with other measures provided evidence for the concurrent validity of the scale.

**Table 3**

### *Correlation Coefficients Between Turkish Forms of PDS and STAI*

	N	Trait Anxiety (r)	State Anxiety (r)
PDS	124 Earthquake area	.407**	.331**
	439 Istanbul	.335**	.323**
	564 Total	.352**	.309**

\*\*  $P \leq .01$

For distinctive validity, hypotheses testing method was used. T-test results showed that there were statistically significant differences for gender ( $t=10.99$ ,  $sd=4.19$ ,  $P < .001$ ), between people who experienced the event in the most affected area, and those who experienced the event in a less affected area ( $t=-6.34$ ,  $sd=4.16$ ,  $P < .001$ ), between people who left the disaster area immediately after the event and

those who did not ( $t=-4.25$ ,  $sd=4.28$ ,  $P<.001$ ), between people who lost their close ones and those who did not ( $t=-6.12$ ,  $sd=4.29$ ,  $P<.001$ ), and between women who were mothers and those who were not ( $t=-7.11$ ,  $sd=4$ ,  $P<.001$ ). The analyses of variance results showed that age ( $F_{2,1082}=17.732$ ,  $P<.000$ ), education level ( $F_{5,1129}=16,285$ ,  $P<.000$ ), job ( $F_{5,1112}=28.796$ ,  $P<.000$ ), and residence area at present ( $F_{9,1123}=18.118$ ,  $P<.000$ ), were statistically significant.

For the construct validity, the explanatory factor analysis method was used. Principal component analysis conducted for extraction and Varimax rotation with Kaiser normalization was used to extract the factors from the items. According to the results of the preliminary factor rotated component matrix, factor loading of item 6 was (9,462E-02) less than .10 in the 2. factor. Therefore, item number 6 (tachycardia) was eliminated in the second factor analyses. Two factors, the eigenvalues of which are greater than 1.00, accounting 58.39% of the total variance were extracted. Results of factor analyses are shown in Table 4.

As seen in Table 4, items with factor loadings from .61 to .78 were loaded on one of the two factors. Factor 1 explained 32.7% of the variance and contained 5 items. This factor was entitled "Worry." Factor 2 explained 25.5% of the variance and consisting of 3 items. This factor was entitled "Emotionality." Because of the higher total variance (58.39%), the scale could also have only one general factor. Additionally, before rotated, Factor 1 showed high loadings (component matrix: .58-.71) even before item 6 (tachycardia) was eliminated (component matrix: .56-.72). Therefore, the scale could be used as a nine-item and one-factor general scale.

**Table 4**

***Rotated Factor Loadings for the PYSÖ, Communalities ( $h^2$ ), Numbers, Means and Standard Deviations***

	Factor 1	Factor 2	$h^2$	N	M	Sd.
8. Worrying	<b>.781</b>	.137	.630	1186	2.20	.67
1. Intrusive and frightening thoughts	<b>.756</b>	.203	.614	1180	2.01	.72
5. Hopelessness	<b>.697</b>	.171	.515	1181	1.79	.73
3. Depressed effect	<b>.660</b>	.245	.496	1180	2.21	.73
4. Sleep difficulty	<b>.611</b>	.338	.488	1185	2.04	.80
7. Temper outburst	.177	<b>.853</b>	.759	1177	1.70	.75
2. Irritability	.253	<b>.670</b>	.791	1183	1.85	.71
9. Feeling critical of others	.217	<b>.669</b>	.495	1158	1.79	.78

Note: Factor loadings which are greater than .400 are in **bold**.

***Reliability***

For reliability studies of the Turkish version of the PDS, internal consistency coefficient and standard error of measurement techniques were used. Cronbach's (1951) alpha measures, means, standard deviations and item-total correlation coefficient values were calculated for internal consistency coefficient. Cronbach's alpha of the PYSÖ were .82 and .83 as shown in Table 5. This compared with alpha value of .78 for the English version. Alpha was .82 for the original English form in a

study with 229 adults (Freedy et al., 1994, s.264) Therefore, it can be said that the internal consistency reliability of the PYSÖ was found to be very similar to the original PDS. As can be seen in Table 6, the item-total correlation values ranged from .78 to .82 for total group and subgroups.

**Table 5**

*Alpha Measures, Means, and Standard Deviations of PYSÖ*

Groups	Total Test (n=9)			
	N	Alpha	Mean	S.D.
Istanbul	805	.82	16.61	4.15
Earthquake Area	339	.82	18.39	4.41
Total	1144	.83	17.14	4.30

**Table 6**

*Item-Total Correlations Coefficients of PYSÖ*

Items	Earthquake Area	Istanbul City	Total Scores
	N=339	N=805	N=1144
1	.78	.80	.80
2	.80	.80	.81
3	.79	.81	.81
4	.79	.80	.80
5	.80	.81	.81
6	.80	.82	.82
7	.80	.81	.81
8	.79	.80	.80
9	.81	.82	.82

Standard error of measurement technique was also used for reliability analyses. It was found as 2 points as seen in Table 7 for PYSÖ. Thus, the difference between an individual's score should be 2 points to be significant at .01 level. This means that a score can change approximately 2 points.

**Table 7**

*Standard Error of Measurement Scores of PYSÖ*

Sample Groups	N	Standard Error Scores
Total	1144	2.05
Istanbul City	805	1.98
Earthquake Area	339	2.11

### Conclusions and Recommendations

Traumatic events such as natural disasters, terrorism, and accidents impact large numbers of people, not only in Turkey but also in other countries. There are very few Turkish instruments to assess post traumatic stress disorder. The aim of this study

was to adapt the Psychological Distress Scale to Turkish. This can be useful for further research in this field. Firstly, the existing English forms were administered to a group of bilingual university students from English Language Departments. The alpha was .79 for this sample. This alpha value was very close to the original English form's alpha .82. (Freedly et al., 1994). This means that the English items were understandable for Turkish university students. Secondly, the scale was translated into Turkish and entitled as PYSÖ. Thirdly, for transliterational equivalence Turkish forms of the scale were given to the same groups of bilingual university students within two weeks respectively. High correlation values showed that the English and Turkish forms were very similar to each other. Fourthly, in order to examine the content related construct validity of the PYSÖ, the related and well-validated DSKE was administered along with the PDS. Significant relationship with these measures provided evidence for the concurrent validity of the scale. Fifth, for the predictive validity, a hypotheses testing method was used. Mean scores of PYSÖ showed significant differences for a group of independent variables. According to t-test and variance analyses results, PYSÖ was distinctive for some factors such as age, gender, education level, job, being a mother, experiencing the event in the most affected area, leaving the disaster area immediately, having lost close ones, and being resident in the disaster area at the present time of the study. Sixthly, for the construct validity factor analysis was conducted. It was found that PYSÖ could be used as a two-factor scale as well as a one-factor general scale. Seventh, in terms of internal consistency, satisfactory alpha values showed that the translated Turkish forms of the scale were easily understandable by Turkish groups. Eighth, at the end of the item-total correlation analyses, the correlation values ranged from .78 to .82. Finally, standard error of measurement technique was also used for reliability analyses. Individuals' total scores should be 2 points different. Consequently, it can be concluded that the Turkish form of the Scale has adequate reliability and validity values for use in related research. PYSÖ can be used to evaluate psychological distress in psychometric assessment process.

The present study has several strengths and limitations. Its strengths include the sample size and the use of standardized measures and procedures. The weaknesses were typical of many published studies. The use of retrospective measurement entailed the possibility of inaccuracy of participants' memory of events, due to the time frame between the event and data collection (2 months). Another limitation of the methodology was the use of different measurement methods. Many of the items included in the questionnaire were objective situations or actions. Conversely, some of these scales were largely comprised of subjective ratings of subjective experiences. Replication with different subjects is needed. Replication attempts should involve different stressful events and different populations.

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## Psikolojik Yoğun Stres Ölçeği Türkçe Formunun Geçerlik ve Güvenirlik Çalışması

### (Özet)

**Problem Durumu:** İnsanlar yaşamları süresince strese neden olan deprem gibi doğal afetlere, kaza ve terör olaylarına maruz kalabilmektedirler. Bu tür olayların sıklığı ve etkilediği kişi sayısının fazla olması etkilerinin belirlenmesine yönelik çalışmalara önem kazandırmaktadır. Ancak bu alanda yapılacak çalışmalarda kullanılacak geçerli ve güvenilir Türkçe ölçme araçlarının sayısı oldukça sınırlıdır. Araştırmalarda kullanılan ölçme araçlarının yeterli geçerlik ve güvenilirliğe sahip olması ulaşılan bulguların güvenilirliği ile yakından ilgilidir.

**Amaç:** Bu çalışmanın amacı İngilizce olarak geliştirilmiş olan Psikolojik Yoğun Stres Ölçeği’nin (PYSÖ) Türkçe formunu tanıtmak ve geçerlik ve güvenilirliğine yönelik bulguları değerlendirerek Türkçe’ye kazandırmaktır.

**Yöntem:** Çalışmada ilişkisel tarama yöntemi kullanılmıştır. Önce ölçeğin Türkçe eşdeğerlik çalışması tamamlanmış daha sonra Marmara

Depreminden sonraki ilk iki ay içinde İstanbul'dan ve deprem bölgesinde çadır kentlerden toplanan veriler üzerinden istatistik analizleri yapılmıştır. Çalışmanın genelinde 1403 kişiye ulaşılmış ancak geçerlik ve güvenilirlik çalışmaları 1144 kişiden toplanan sağlıklı verilerle gerçekleştirilmiştir. Eşdeğerlik sınaması için Boğaziçi ve Marmara Üniversiteleri İngilizce Öğretmenliği son sınıf öğrencilerinden oluşan 100 kişilik bir gruptan yaklaşık 2 hafta arayla uygulamadan elde edilen veriler kullanılmıştır. Daha sonra geçerlik ve güvenilirlik çalışmasına geçilmiştir. 18-55 yaş arası, yetişkinlerden oluşan çalışma grubunun %60'ını erkekler, %40'ını kadınlar teşkil etmektedir. Grubun yaklaşık %63'ü lise, %14'ü orta okul, %9'u üniversite mezunudur. İlave olarak grupta %4 dolayında ilköğretim ve yine aynı oranda lisansüstü eğitimi yapmış ve %0,7 oranında okuma-yazma bilenler yer almıştır. Örneklem; deprem bölgesinden iki büyük çadır kent ve İstanbul'da Anadolu yakası ile sınırlı tutulmuştur. Katılımcılara konuyla ilgili bilgi verilmiş ve katılım gönüllü olmuştur. Çalışmada demografik verileri toplamak için açık ve kapalı uçlu sorulardan oluşan 19 maddelik bir anket formu kullanılmıştır. PYSÖ 9 maddeden oluşan bir belirti tarama listesidir. Yaşanan bir travmadan sonraki 2 ay içinde travmanın etkisini belirlemeye yönelik olarak geliştirilmiştir. Listedeki maddeler bireyin işsel durumunu ve bireyler arası iletişime yönelik yakınmalarını değerlendirmek amacıyla düzenlenmiştir. Bu şikayetler; "Korkunç şeyler düşünmek", "Sinirlilik", "Aşırı üzüntü", "Uyku bozukluğu", "Umutsuzluk", "Kalp çarpıntısı", "Çabuk öfkelenme", "Endişe duyma" ve "Başkalarına karşı sabırsız olmak" ifadeleri ile değerlendirilir. Katılımcı, son günlerde bu şikayetleri hangi yoğunlukta yaşadığını ifade ederek testi doldurur. Şikayetlerini 3 dereceli bir ölçek üzerinde, envanterin başında yer alan yönergeye göre, 0 ile 2 arasında puanlama yaparak bildirir. Puanlamada 0= Hiç, 1=Biraz, 2=Oldukça sık, şeklinde değerlendirilir. Puanlama sonucu 0 ile 18 arasında bir değere ulaşılır. Durumluk Sürekli Kaygı Envanteri (DSKE) toplam 40 sorudan oluşmuştur, 1-4 arasında değer alan 4 dereceli bir ölçektir. İlk 20 madde Durumluk Kaygıyı değerlendirmeye yöneliktir. Her madde Hiç (1), Biraz (2), Çok (3) ve Tamamıyla (4) seçeneklerinden bir tanesinin işaretlenmesi şeklinde uygulanır. İkinci 20 madde ise Sürekli Kaygıyı değerlendirmektedir. Sürekli kaygı ölçeğinin uygulanması sırasında Hemen Hiçbir Zaman (1), Bazen (2), Çok zaman (3) ve Hemen Her Zaman (4) şıklarından bir tanesinin işaretlenmesi gerekir. Olayın Etkisi Ölçeği (OEÖ) 15 madde ve 2 alt boyuttan oluşan bir ölçektir. Alt ölçeklerden birincisi "katılım", ikincisi "kaçınma" boyutuna aittir. 4 dereceli bir ölçektir. Katılımcının okuyarak son günlerde bu ifadeleri ne sıklıkla yaşadığını değerlendirmesi istenir. Uygulama Hiç (0), Nadiren (1), Bazen (3) ve Sıklıkla (5) şıklarından bir tanesinin işaretlenmesi şeklinde gerçekleşir.

*Bulgular:* İngilizce formun iyi İngilizce bilen gruplara uygulanmasından elde edilen yüksek alfa .79 değeri İngilizce formun Türk öğrenciler tarafından anlaşılır olduğunu göstermiştir. Çeviri işleminden sonra aynı gruba yaklaşık 15 gün sonra Türkçe form uygulanmış ve .64 ve .78 arasında elde edilen yüksek korelasyon değerleri bu iki form arasında benzerlik olduğunu göstermiştir. PYSÖ puanları travma sonrası ortaya

çıkan yoğun stresin göstergesidir. Travma sonrası stresin bir ürünü olarak kaygının ortaya çıktığı bilinmektedir. Kavramsal (uyum) geçerlik testi için geçerliği ve güvenilirliği yüksek ve kullanımı yaygın olan bir kaygı ölçeğinden yararlanılmıştır. DSKE ve PYSÖ' nün aynı gruplara uygulanmasından ulaşılan puanlar arasında .31 ile .41 arasında korelasyonlar belirlenmiştir. Ölçeğin ayırt ediciliğini sınamak amacıyla yapılan hipotez testinde, t-test ve varyans analizi yapılmış ve sonuçta; ölçekten elde edilen puan ortalamalarının yaş, cinsiyet, eğitim düzeyi, meslek ve depremde kaybı olmak gibi demografik değişkenlere bağlı olarak genellikle .001 düzeyinde anlamlı farklılıklar gösterdiği tespit edilmiştir. Yapı geçerliği için açıklayıcı faktör analizi yapılmıştır. İlk analiz sonucunda 6. maddenin (6. Kalp çarpıntısı) 2. faktördeki yükü .10'un altında (9,462E-02) tespit edilmiştir. Bu nedenle 6. madde çıkarılarak faktör analizi ikinci kez tekrar yapılmıştır. Sonuçta toplam varyansın %58.39'unu açıklayan iki faktör tespit edilmiştir. Birinci faktör varyansın %32.7'sini açıklamış ve 5 maddeden oluşmuştur. Bu maddeler "8.Endişe duyma", "1.Korkunç şeyler düşünmek", "5.Umutsuzluk", "3.Aşırı üzüntü" ve "4.Uyku bozukluğu" şeklinde sıralanmış ve ölçeğin "Üzüntü" boyutu olarak adlandırılmıştır. İkinci grup 3 maddeden oluşmuş ve bu maddeler; "7.Çabuk öfkelenme", "2.Sinirlilik ve "9.Başkalarına karşı sabırsız olmak" şeklinde sıralanmıştır. İkinci boyuttaki ifadeler öfke, sinirlilik ve sabırsızlık şeklinde duyguları kapsayan "Heyecan" boyutu olarak adlandırılmıştır. Diğer yönden toplam varyansın (%58.39) yüksek olması ve 1. faktörün döndürmeden önceki faktör yüklerinin yüksek olması (.58-.71) hatta 6.madde çıkarılmadan önce bile faktör yüklerinin yüksek olması (.56-.72) nedeniyle ölçeğin 9 maddelik ve tek boyutlu genel bir ölçek olarak da kullanılabileceği belirlenmiştir. Faktör analizi sonucu bütün maddelerin aynı değişkeni ölçtüğü söylenebilir.

Güvenirlilik alfa (.82 ve .83) değerleri ve madde-toplam puan korelasyonlarına (.78 ile .82) bakılarak, iç tutarlık sınaması şeklinde test edilmiştir. Orijinal İngilizce formun alfa değeri Amerika Birleşik Devletlerinde depreme maruz kalan 229 kişilik bir örneklem grubu için .82 düzeyindedir. Bu çalışmada da aynı alfa değeri elde edilmiştir. Güvenirlilik sınaması için ayrıca değişik örneklem gruplarında Ölçmenin Standart Hatası hesaplanmış ve 1.98 ile 2.11 arasında değişen değerler elde edilmiştir.

*Sonuç ve Tartışma:* Bu makalede travmanın psikolojik etkisini değerlendirmeye yönelik olarak kullanılan bir psikolojik yoğun stres ölçeğinin Türkçe formunun psikometrik özellikleri incelenmiştir. Eğitim araştırmalarında geçerlik ve güvenilirlik sınamasına yönelik çalışmalara yaygın olarak rastlanmaktadır. Ancak bu çalışmalar içinde ağır travma sonrası stresi değerlendirmeye yönelik olarak kullanılabilecek Türkçe ölçeklere ait çalışmaların sayısının oldukça sınırlı olduğu gözlenmektedir. Doğal afet ve kaza gibi stres veren olayların sık yaşandığı ülkemizde, travmaya maruz kalan bireylerin yardıma ihtiyacı olup olmadığını belirlemek amacıyla bu tür ölçeklere ihtiyaç duyulduğu bir gerçektir. Bu

ölçeğin konuyla ilgili alanda kullanımının yaygın olabileceği düşünülmüştür.

Türkiye’de kullanımı çok yaygın olmayan ölçeğin orijinal formu İngilizce olarak geliştirilmiştir. Orijinal form Marmara ve Boğaziçi Üniversitelerinde, yaklaşık 100 kişilik bir gruba uygulanmıştır. Analizler sonucu .79 düzeyinde yeterli alfa değeri elde edilmiştir. Travma sonrası olayın etkisini değerlendirmeye yönelik olarak geliştirilmiş olan 15 maddelik OEÖ ile aynı grup için yazar tarafından yapılan uygulamadan elde edilen alfa değerleri tüm test ve “kaçınma” ve “katılım” alt testlerde .79 ve .89 düzeyinde bulunmuştur. Bu değerler her iki ölçeğinde İngilizce formunun Türk öğrenciler için uygulanabilir olduğunu göstermiştir.

PYSÖ’nin Türkçe ve İngilizce Formları Puanları Arasındaki Korelasyon ölçeğin Türkçe ve İngilizce formları arasında paralellik olduğunu gösterecek şekilde .77 dir. Ölçeğinin Türkçe formunun uygulanmasından elde edilen puan bir olay sonrası ortaya çıkan stresin göstergesidir. Elde edilen ölçümlerin doğruluğu kavramsal (uyum) geçerliği ve yapı geçerliği yöntemleriyle sınanmıştır. Stres ve kaygı bir arada bulunduğundan, geçerlik sınaması için, kaygıyla ilgili çalışmalarda yaygın olarak kullanılan ve tatminkar psikometrik değerlere sahip olan DSKE kullanılmıştır. DSKE ile PYSÖ puanları arasında oldukça yüksek korelasyonlar bulunmuştur. PSYÖ’nin ayırt ediciliğini test etmek için t-test analizi yapılmış ve sonuçta; depremden çok etkilenen bölgede (çadır kentlerde) yaşayanlar ile daha az hissedilen bölgede (İstanbul, Anadolu yakasında) yaşayanlar, olaydan sonra bölgeden hemen ayrılanlar ile ayrılmayanlar, olayda bir yakınına kaybedenler ile kaybetmeyenler ve çocuk sahibi olan kadınlar ile olmayanlar arasında ayırt edici olduğu belirlenmiştir. Varyans analizi sonucunda ise yaş, eğitim düzeyi ve halen deprem bölgesinde yaşıyor olmak gibi faktörlerin puan ortalamaları üzerinde anlamlı farklılığa neden olduğu ulaşılmış önemli bulgulardandır. Ölçeğin ayırt ediciliği yüksektir. Yapı geçerliğini sınamak için yapılan faktör analizi sonucunda ölçeğin “üzüntü” ve “heyecan” olarak adlandırabilecek iki boyuttan oluştuğu belirlenmiştir. Ancak aynı zamanda bütün maddelerin aynı değişkeni ölçtüğü ve maddelere verilen cevapların genel bir ölçek puanı olara toplanabileceği görülmüştür. PYSÖ puanı yaklaşık olarak 2 puan hata farkı gösterebilmektedir. Sonuç olarak ölçek Türkçe’ye kazandırılmış ve yeterli psikometrik değerlere ulaşılmıştır.

**Öneriler:** PYSÖ çalışmalarda psikolojik yoğun stresi değerlendirmek amacıyla kullanılabilir. Benzer çalışmaların tekrarı gereklidir. Tekrarlar değişik stres verici durumlarda ve farklı çalışma grupları ile gerçekleştirilmelidir.

**Anahtar Sözcükler:** Psikolojik yoğun stres ölçeği, geçerlik, güvenilirlik