The Postpartum Depression Screening Scale: Its Reliability and Validity for the Turkish Population

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Abstract

Objective: The aim of this study was to determine the reliability and validity of the Postpartum Depression Screening Scale (PDSS) for the Turkish population.

Method: The research was conducted in the province of Ankara between 15 June 2003 and 15 February 2004. The study sample included 445 women in their 2nd-13th postpartum week. Data were collected with a sociodemographic form, PDSS, Beck Depression Inventory (BDI), and Edinburgh Postpartum Depression Scale (EPDS).

Results: The internal consistency coefficient (Cronbach's alpha) of PDSS was 0.94, its test-retest reliability was r = 0.86 and the coefficient of the two-halves test was r = 0.91. Factor analysis of the scale revealed that it was composed of 6 factors with Eigenvalues > 1, accounting for 54.69% of the total variance. All items of the Turkish PDSS had a factor load ranging from 0.34 to 0.77 and they all belonged to 1 factor. There was a strong relationship between PDSS, and BDI (r = 0.71) and EPDS (r = 0.71). Item-to-total correlation coefficients of the Turkish PDSS ranged from 0.35 to 0.68 and item-to-total correlation coefficients of its subscales ranged from 0.31 and 0.71, and they were sufficiently discriminative.

Conclusion: The research suggests that the validity and reliability of the Turkish PDSS are satisfactory, and that it can be used in Turkey.

Key Words: Postpartum depression, Postpartum Depression Screening Scale, screening, reliability, validity

INTRODUCTION

While most women adapt easily to the physiological, psychological, and social changes brought about by pregnancy and delivery, some women experience mental health problems of mild, moderate, or severe intensity (Bashiri and Spielvogel, 1999; Dennis, 2004; Gülseren, 1999). Major depression is the mental disorder most frequently seen in women and it affects gradually more women, especially at the ages of delivery (Georgiopoulos et al., 1999).

The reported frequency of postpartum depression varies according to study, depending on the instruments and methods used, sample size, and local variations of the studies. In America and Europe the frequency of postpartum depression was reported to be 3.5%-17.5% in studies that used standardized diagnostic methods (Evins and Theofrastous, 1997; Bashiri and Spielvogel, 1999) and 3%-42% in studies that used self-report measures (Georgiopoulos et al., 1999; Chaudron et al., 2001; Chandran et al., 2002; Cantwell and Cox, 2003; Dennis, 2004). Turkish studies that used self-report scales report that the frequency of postpartum depression varies between 21.2% and 54.2% (Büyükkoca, 2001; Inandı et al., 2002; Bugdaycı et al., 2004; Ekuklu et al., 2004).

Postpartum depression is very important for mother and baby, as well as for other members of the family, because it jeopardizes healthy life, quality and security of life (Beck, 2001; McIntosh et al., 2001; Cantwell and Cox, 2003). Postpartum depression might have adverse

effects on a woman's self-esteem, capabilities, roles, and responsibilities about her family and husband, her children's lives, care and development (Beck, 1999; Jennings et al., 1999; Britton et al., 2001; Diego et al., 2005); therefore, early diagnosis and treatment of postpartum depression is crucial. Nontheless, because it's time consuming to perform clinical interviews with all women and because women do not seek treatment due to the fear of social stigmatization early diagnosis of postpartum depression is impeded (Rezaki et al., 1995; Özmen and Sağduyu, 1997; Albers, 2000).

It is reported that follow-up during the postnatal period offers an important opportunity and a cost effective method of screening for the symptoms of postnatal depression (Özmen and Sağduyu, 1997; Maley, 2002). Although a regular examination is conducted in the sixth postpartum week and home visitations are made during the postpartum period in Turkey, there is no screening for postpartum depression. Treatment is sought only by women whose depressive symptoms are recognized by themselves or by their families; however, screening for the symptoms of postpartum depression could be accomplished with standardized screening instruments during home visitations by midwives and nurses who work in primary healthcare (Edebohls and Ecklund, 2002; Kennedy et al., 2002). After screening, women who are diagnosed with postpartum depression can be referred for further examination and treatment.

In general, the diagnosis of postpartum depression requires a clinical interview. There are also standardized self-report measures to assess a women's mental health. These measures that aim to assess the symptoms of depression can provide information about the severity of psychological distress and show that a woman has postpartum depression (Rivieres-Pigeon et al., 2004; Austin and Priest, 2005). The Postpartum Depression Screening Scale (PDSS) is a scale developed for this purpose (Beck and Gable, 2000) and is suggested as an effective instrument for screening postpartum depression ; therefore, this study aimed to translate PDSS into Turkish and to examine the reliability and validity of the Turkish version of the scale.

METHOD

Participants

The study was conducted with 445 women selected through random sampling. Women ≥ 18 years of age that were between postpartum weeks 2 and 13, had healthy babies, and had at least a primary school education were included in the study. A primary school education was an inclusion criterion because self-report measures were used. Women who had twins or babies with health problems were not included in the study. The study was conducted with women that brought their healthy babies for check-up and vaccinations to 1 of 4 different primary healthcare centers chosen for the study. According to the infant check-up and vaccination records of the healthcare centers in which the study was conducted, the annual number of 0-3-month-old infants followed-up was 3192. Mean age of women included in the study was 26.18 ± 5.21 years (range: 18-43 years), most (41%) graduated from primary school, mean postpartum week during the study was 9.95 ± 3.38 (range: week 2-13), and mean number of living children per mother was 1.66 ± 0.75 (range: 1-5). Detailed information about the women in the sample is presented in Table I.

Data were gathered at 4 primary healthcare centers in Ankara that follow-up healthy children. These sites were chosen because they serve people with different levels of education and sociocultural characteristics.

MATERIALS

Data for the study were gathered using a demographic information form, PDSS, BDI, and EPDS. The demographic form collected data about the mother's age, education level, occupational status, obstetrics history, marital status, income level, whether the pregnancy was planned or not, depression status before and during the most recent pregnancy, and the baby's birth date.

Postpartum Depression Screening Scale

PDSS is a self-report scale with 35 items and 7 factors (each factor has 5 items), scored with a 5-point Likert scale (1-5). Each item defines the mother's feelings after the birth of her baby. On each item of the scale a woman is asked to rate the situation that best describes her feelings during the last 2 weeks on a scale of 1 (strongly disagree) to 5 (strongly agree) and to circle her answer. Total score ranges from 35 to 175 (Beck and Gable, 2000).

The validity and reliability of the original PDSS was examined in a study that included 525 women in their 2nd to 6th postpartum week. Construct validity of the scale was calculated by confirmatory factor analysis and item response theory technique. Reliability of the scale was determined by calculating item analysis and alpha internal consistency reliability. The alpha internal consistency reliability of each factor is as follows: Sleeping/Eating Disturbances, 0.83; Anxiety/Insecurity, 0.83;

Table I. Participants' demographic data (n = 445).

Informative Variables	n (%)
Level of Education	
Primary School	183 (41.1)
Secondary School	57 (12.8)
High School	128 (28.8)
University and Master's Degree	77 (17.3)
Occupational Status	
Paid worker	73 (16.4)
Housewife	372 (83.6)
Income Level Reported by Women	
Low	120 (27.0)
Middle	312 (70.1)
High	13 (2.9)
Marital Status	
Married by civil marriage	427 (96.0)
Married without civil marriage	16 (3.6)
Separated from husband	2 (0.4)
Planned Pregnancy	
Yes	292 (65.6)
No	153 (34.4)
Wanted Pregnancy	
Yes	341 (76.6)
No	104 (23.4)
History of Depression Before Most Recent Pregnancy	
Yes	90 (20.2)
No	355 (79.8)
History of Depression During Most Recent Pregnancy	
Yes	128 (28.8)
No	317 (71.2)

	Mean	Standard Deviation	Range
Age (years)	26.18	5.21	18-43
Obstetric History			
Number of pregnancies	2.04	1.19	1-8
Number of live births	1.67	0.76	1-5
Number of live children	1.66	0.75	1-5
Number of Postpartum Weeks	9.95	3.38	2-13

Emotional Lability, 0.89; Cognitive Impairment, 0.91; Loss of Self, 0.94; Guilt/Shame, 0.89; Contemplating Harming Oneself, 0.93 (Beck and Gable, 2000).

Further validity analysis of the scale was conducted with 150 women who were, on average, in their of 6th postpartum week. It was reported that in that study in which a DSM-IV clinical interview was taken as the standard, when the cutoff point for depression was 80, its

Table II. Factor reliability of PDSS (n = 445).

Factor/Item		Item-Factor Total Test Correlation Coefficients (r)	Factor Alpha Value If Item Deleted	Factor Alpha Value	Factor Loadings
Emotional Lability/Loss of Self				.89	
Felt really overwhelmed	(9)	.68	.88		.69
Felt like my emotions were on a roller coaster	(17)	.71	.88		.69
Had difficulty focusing on a task	(32)	.69	.88		.66
Have been very irritable	(24)	.69	.88		.62
Felt full of anger ready to explode	(31)	.62	.88		.60
Felt as though I had become a stranger to myself	(12)	.65	.88		.59
Felt all alone	(2)	.54	.89		.57
Was scared that I would never be happy again	(10)	.59	.88		.53
Could not concentrate on anything	(4)	.53	.89		.52
Was afraid that I would never be my normal self again	(19)	.58	.89		.52
Did not know who I was anymore	(5)	.52	.89		.51
Contemplating Harming Oneself				.87	
Wanted to hurt myself	(21)	.66	.85		.77
Just wanted to leave this world	(35)	.63	.85		.72
Thought I was going crazy	(18)	.67	.85		.68
Have thought that death seemed like		.59	.86		.65
the only way out of this					
living nightmare	(14)	.63	.85		.57
Felt like I was losing my mind	(11)	.54	.86		.57
Started thinking that I would be better off dead	(7)	.57	.86		.56
Felt like I had to hide what I was thinking or					
feeling towards baby	(27)	.59	.86		.55
Felt like I was not normal	(26)	.46	.86		.55
Felt that my baby would be better off without me	(28)	56	.86		.54
Felt guilty because 1 could not feel as much love for					
my baby as I should	(20)	.44	.86		.34
Did not feel real	(33)				

sensitivity was 0.94, specificity was 0.98, positive estimation value was 0.90, and negative estimation value was 0.99. When the cutoff point of PDSS for minor or major depression was 60, it was reported that its sensitivity was 0.91, specificity was 0.72, positive estimation value was 0.59, and negative estimation value was 0.95. Additionally, a high correlation was reported between PDSS and BDI ($r = 0.81$, $P < 0.0001$) and between PDSS and EPDS ($r = 0.79$, $P < 0.0001$) (Beck and Gable, 2001).

Group translation and expert opinion methods were

Table II. Continued

Factor/Item		Item-Factor Total Test Correlation Coefficients (r)	Factor Alpha Value If Item Deleted	Factor Alpha Value	Factor Loadings
Sleeping Disturbances				.71	
Tossed and turned for a long time at night trying to fall asleep	(22}	.56	.62		.71
Woke up on my own in the middle of the night and had					
trouble getting back to sleep	(15)	.54	.63		.63
Felt like I was jumping out of my skin	(16)				
Had trouble sleeping even when my baby was asleep	{1}	.46	.68		.63
		.45	.69		.56
Guilt				.76	
Felt like so many mothers were better than me	(13)	.61	.65		.71
Felt like a failure as a mother	(6)	.60	.66		.71
Fell like I was not the mother I wanted to be	(34)	.55	.71		.68
Eating Disturbances				.63	
Lost my appetite	(8)	.48	.46		.55
Knew I should eat but could not	(29)	.37	.62		.52
Cried a lot for no real reason	(3)	.46	.50		.50
Anxiety				.58	
Felt like I had to keep moving or pacing	(30)	.31	.59		.60
Got anxious over even the littlest things that		.41	.44		.55
concerned my baby	(23)				
Had a difficult time making even a simple decision	(25)	.45	.39		.46

used for the adaptation of original scale into Turkish. First, the original form of the scale was independently translated into Turkish by 3 academics with an advanced level of English and a single translation text was composed after comparing the translations. Then, in order to examine the face validity of the translated items, opinions were taken from 1 linguist, 11 academics, and from 5 members of the nursing department and 6 members of the psychology department, all with an advanced level English. In light of these opinions the Turkish version of the scale was constructed by choosing the items that were reported to best represent the original items.

Beck Depression Inventory

BDI was developed by Beck et al. (1979) and adapted to Turkish by Hisli (1988). BDI is a self-report scale with 21 items that measure the emotional, somatic, cognitive, and motivational symptoms seen in depression. The aim of the scale is not to diagnose depression, but to objectively determine the severity of depressive symptoms. Correlation coefficients between the English and Turkish versions of the scale were calculated as 0.81 and 0.73 (language validity), split half reliability was 0.74, and criterion-related validity with MMPI-D was 0.63. BDI scores ≥ 17 were reported to discriminate depression that might require treatment with more than 90% accuracy. The score of each item ranges from 0 to 3 and the depression score is obtained by adding the score of each item. The highest score obtainable is 63 (Savaşır and Şahin, 1997).

Edinburgh Postpartum Depression Scale

EPDS was developed by Cox et al. (1987) and aims to screen for the risk of postpartum depression in wom-

Table III. Pearson's correlation coefficients between total score and factor scores of PDSS, and BDI and EPDS (n = 445).

	1	2	3	4	5	6	7	8	9
(1) PDSS-Total	-								
(2) PDSS Factor 1	.90*	-							
(3) PDSS Factor 2	.85*	.66*	-						
(4) PDSS Factor 3	.71*	.57*	.48*	-					
(5) PDSS Factor 4	.69*	.54*	.57*	.44*	-				
(6) PDSS Factor 5	.66*	.55*	.43*	.67*	.36*	-			
(7) PDSS Factor 6	.68*	.60*	.45*	.39*	.42*	.41*	-		
(8) BDI Total	.71*	.68*	.60*	.48*	.43*	.46*	.49*	-	
(9) EPDS Total	.71*	.69*	.55*	.52*	.42*	.44*	.51*	.69*	-

*P < 0.0001.
PDSS: Postpartum Depression Screening Scale; BDI: Beck Depression Inventory; EPDS: Edinburgh Postpartum Depression Scale.

en, not to diagnose depression. EPDS is a 10-item self-report measure with a 4-point Likert scale. Questions with 4 answer choices are scored between 0 and 3. The minimum score of the scale is 0, while the maximum is 30. While items 1, 2, and 4 are scored as 0-10, the items are scored reversely. EPDS was adapted to Turkish by Engindeniz (1996). The reliability and validity study of the scale conducted by Engindeniz (1996) indicated an internal consistency coefficient of 0.79. With a cutoff point of 12/13, its sensitivity was found to be 0.84, specificity 0.88, positive estimate value 0.69, and negative estimation 0.94. The correlation between EPDS and the General Health Scale was found to be r = 0.7 (P < 0.0001) and its validity was accepted. The cutoff point of EPDS was calculated to be 13 and women with scores ≥ 13 are regarded as at risk.

PROCEDURE

Permission was obtained from Western Psychological Services in order to translate PDSS into Turkish and to reproduce the scale. Permission was obtained from the Turkish Ministry of Health and Hacettepe University Ihsan Doğramacı Children's Hospital to collect data. The protocol of the present study was approved by the Ethics Board of Hacettepe University Medical School, Surgical and Pharmacological Applications. Additionally, verbal consent was received from the participants after they were informed about the study. Scales were randomly administered in order to remove the effect of ordering.

Data were collected by 2 PhD nurses experienced in the use of the scales; 1 from the gynecology nursing department and the other from the public health nursing department. Demographic forms for all women in the sample were administered by face-to-face interview. Then, information was provided to them about completing PDSS, BDI, and EPDS, and the women completed the scales. It took about 5 minutes to complete the demographic form and 20-30 minutes to complete PDSS, BDI, and EPDS. In all, 100 women that said they would be able to return the form when they come for their child's next vaccination were given the retest form of PDSS in order to complete it 15 days later; 90 returned forms were analyzed.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) v.11.5. The effects of educational level and the location of the healthcare center where they participated in the study on mean total PDSS score were examined by analysis of variance (ANOVA). Tukey's honestly significant difference test (Tukey's HSD) was conducted in order to determine which level of education had an effect on mean total

PDSS score. Internal consistency (Cronbach's Alpha), test-retest reliability, and split half reliability analyses were conducted to examine the reliability of the scale. The construct validity of the scale was examined by the extraction method, principal component analysis, and rotation method: Varimax with Kaiser normalization. In addition, item selection was conducted by factor analysis and discriminant power was determined by item-total test correlation coefficients. Pearson's correlation analysis was applied to examine the relationship between PDSS, and BDI and EPDS.

RESULTS

The effects of educational level and the location of the healthcare center where the women participated in the study on mean total PDSS score was examined by ANOVA. In the analysis conducted according to the level of primary school, middle school, high school, and university or above the differences between the groups were statistically significant (F(3;441) = 3.68, P < 0.01). According to Tukey's HSD test, which was conducted to determine which education levels had an effect on mean total PDSS score, the difference between women with a primary school education (mean: 67.73 ± 27.98, n = 183,) and those with a university or above education (mean: 56.75 ± 18.20, n = 77) was significant (mean difference: 10.98 ± 3.37, P < 0.01). ANOVA, which was conducted to determine mean total score differences among women that participated in the study at different healthcare centers, revealed that there wasn't a significant difference between the groups (F(3;441) = 0.98, P > 0.05).

Reliability Results

Reliability of the Turkish PDSS was examined by internal consistency (Cronbach's alpha), test-retest, and split half reliability analyses. The internal consistency coefficient of PDSS was 0.94. Internal consistency coefficients of PDSS factors were as follows: Emotional Lability/Loss of Self: 0.89; Contemplating Harming Oneself: 0.87; Sleeping Disturbances: 0.71; Guilt: 0.76; Eating Disturbance: 0.63; Anxiety: 0.58 (Table II).

The test-retest internal consistency coefficient of the Turkish PDSS was 0.97 and the internal consistency coefficients of the test-retest factors were 0.94, 0.94, 0.71, 0.89, 0.68 and 0.65, respectively.

The test-retest stability coefficients of the Turkish PDSS were as follows: For total score, r = 0.86 (P <

0.0001) and for the factors, r = 0.81, 0.80, 0.57, 0.66, 0.63, and 0.72 (P < 0.0001), respectively. The split half reliability of the Turkish PDSS was r = 0.91 (P < 0.0001).

Validity Results

The validity of the Turkish PDSS was examined by exploratory factor analysis (construct validity), criterion-related validity, and item-total test correlation coefficients (item validity).

Factor Analysis (construct validity): Extraction Method

In order to examine the construct validity of the Turkish PDSS, principal component analysis, rotation method: Varimax with Kaiser normalization, which depends on the scores obtained from 35 items that loaded on the 7 factors of the original scale, was applied. The results of this analysis revealed 6 factors that have Eigen values > 1 (ranging from 1.15 to 11.46) (Table 6). Contribution of these factors to total variance was 54.69% and explained 15.52%, 14.83%, 7.19%, 6.72%, 5.23%, and 5.01% of the variance, respectively. Factors in the new construct were given the same names as in the original factor from which they received the most items. Accordingly, the Turkish PDSS factors follow. The first factor is composed of 11 items from the original scale's Emotional Lability (4 items), Loss of Self (3 items), Anxiety/Insecurity (2 items), and Cognitive Impairment (2 items) factors. Because this factor received most of its items from the original scale's Emotional Lability and Loss of Self factors, it is called, Emotional Lability/Loss of Self. The second factor is composed of 11 items from the original scale's Contemplating Harming Oneself (5 items), Guilt/Shame (2 items), Loss of Self (2 items), and Cognitive Impairment (2 items) factors. This factor is called Contemplating Harming Oneself because more of the items are from the Contemplating Harming Oneself factor and because it is thought that other items are about self-harm. The third factor is composed of 4 items from the original's Sleeping/Eating Disturbances factor, which are about sleeping (3 items), and from an item on the original's Anxiety/Insecurity factor. Items loaded on this factor are about sleeping; therefore, it is called Sleeping Disturbances. The fourth factor is called Guilt because it is composed of 3 items from the original scale's Guilt/Shame factor, which are about guilt-related to the mother's role. The fifth factor is composed of 2 items about eating disturbance from

the original's Sleeping/Eating Disturbance factor and 1 item from its Emotional Lability factor. This factor is called Eating Disturbance because most of the items are about eating disturbance. The sixth factor is composed of 3 items from the original's Anxiety/Insecurity (2 items) and Cognitive Impairment (1 item) factors. This factor is called Anxiety because most of its items are from the original's Anxiety/Insecurity factor, which are about anxiety (Table II).

Factor Analysis and Item Selection

According to Erkuş (2003), when selecting items it is appropriate to include those with positive factor loadings > 0.32. Principal components analysis applied to the Turkish version of PDSS revealed that all items belong to factors with loadings ranging from 0.34 to 0.77 (Table II).

Criterion Related Validity

In order to investigate the criterion-related validity of the Turkish PDSS, correlations between PDSS, and BDI and EPDS were examined. It was found that there was a significant association between PDSS and BDI (r = 0.71, P < 0.0001), and between PDSS and EPDS (r = 0.71, P < 0.0001) (Table III).

Item Validity: Item-Total Test Correlation Coefficients

Discriminant power of the items on the Turkish PDSS was determined by item-total test correlation coefficients. According to this method, if scores from an item and those from the whole scale have positive and sufficiently high correlations, that item is accepted as discriminant (Erkuş, 2003). It was found that item-total test correlation coefficients of the Turkish PDSS range from 0.35 to 0.68 and item-total factor correlation coefficients range from 0.31 to 0.71 (Table II).

DISCUSSION

In this study, which examined the reliability and validity of the Turkish PDSS, it was found that compared to the results of the Turkish Demographic Health Survey 2003 (TNSA, 2003), women in this study had higher levels of education. Both studies' results were similar in that a small portion of women had paid work (14.7% in TNSA vs.16.4% in the present study) and almost all of them were married (95.0% in TNSA vs. 96.0% in the present study) (Hancıoğlu and Ergöçmen, 2004). Additionally, in the present study 27.0%

of the women reported low-level income. Similar findings were reported in another study conducted in Ankara (Karaçam and Ançel, 2005). Other studies report that women's level of education, work status, and income level are related to depression (Çalışkan et al., 2005; Dindar and Erdoğan, 2005; Şirin and Gözüyeşil, 2005).

Similar to findings in this study, TNSA 2003 reported that 1/3 of both the current pregnancies and children that were born in the last 5years were not planned, and that 20% were unwanted pregnancies (Ünalan and Yavuz, 2004). It is known that unplanned and unwanted pregnancy is related to depression during pregnancy (Karaçam and Ançel, 2005) and in the postpartum period (Robbins et al., 2005).

In the present study 20.2% of the participants reported a history of depression before pregnancy and 28.8% reported a history of depression during pregnancy. Women with a history of mental health disorders experience postpartum depression more often than those without such a history (Dindar and Erdoğan, 2005).

The findings of the present study indicated that mean total PDSS score of the women with a primary school education was significantly higher than that of women with a university (or above) education. Because this difference does not exist among all levels of education, no further statistics were applied in the present study; however, in future research, this study might be replicated with a sample composed of an equal number of women from all education levels.

The reliability of the Turkish PDSS was examined by internal consistency coefficients, test-retest stability coefficients, and split half reliability, and was found to be adequate. The internal consistency coefficient obtained in this study (Cronbach's alpha = 0.94) is similar to that obtained in the study by Beck and Gable (2003), which examined the validity and reliability of the Spanish PDSS (Cronbach's alpha = 0.95).

Erkuş (2003) suggests the lower limit of the internal consistency coefficient is 0.70. Internal consistency coefficients of the Turkish PDSS subscales ranged from 0.58 to 0.89 (Table II). It was reported that the internal consistency coefficients of the original scale's subscales range from 0.83 to 0.94 (Beck and Gable, 2000) and those of the Spanish version ranged from 0.76 to 0.90 (Beck and Gable, 2003). According to these findings it can be said that the internal consistency coefficients

of the Turkish PDSS subscales are slightly lower than those of the original scale, but still adequate. Moreover, lower internal consistency coefficients of the 5th and 6th factors on the Turkish version (0.63 and 0.58, respectively) might have been the result of the small number of items in these factors.

Erkuş (2003) suggests that exploratory factor analysis should be conducted when a scale developed in consideration of cultural characteristics is adapted to another culture. For this reason, exploratory factor analysis was conducted in the present study. According to this analysis, the Turkish PDSS is composed of 6 factors and all of the items on the scale pertain to a factor with ≥ 0.34 positive loading. Erkuş (2003) stated that the contribution of an item to a factor should be 0.32 or higher. Accordingly, it is suitable to include all items of the original scale in the Turkish version of PDSS.

According to our exploratory factor analysis, the factor structure of the Turkish PDSS is different than that of the original scale. In all, 4 items from the Emotional Lability factor and 3 items from the Loss of Self factor of the original scale loaded in 1 factor of the Turkish PDSS. Additionally, 2 items from the original's Anxiety/Insecurity factor, which are related to loneliness, and 2 items from the Cognitive Impairment factor, which are related to attention, loaded on the factor called Emotional Lability/Loss of Self on the Turkish PDSS.

Moreover, all items of the original scale's Contemplating Harming Oneself factor loaded on 1 factor, but 2 items each from the original's Guilt/Shame, Loss of Self, and Cognitive Impairment factors also loaded on this factor on the Turkish version of PDSS. It is noteworthy that the items that loaded on the Contemplating Harming Oneself factor of the Turkish PDSS are reflective of more intense emotions.

In all, 3 items from the Sleeping/Eating Disturbances factor of the original scale, which are about sleep, and 2 items from the same factor, which are about eating, loaded on different factors on the Turkish version of the scale. Moreover, the original item, "felt like I was jumping out of my skin", from the Anxiety/Insecurity factor was associated with sleep in the present study and loaded on the Sleep Disturbance factor.

The item, "cried a lot for no real reason", from the Emotional Lability factor of the original scale was associated with the lack of appetite and loaded on the Eat-

ing Disturbances factor of the Turkish version. In total, 3 items of the original's Guilt/Shame factor, which are about guilt, loaded on 1 factor on the Turkish version of the scale, and 2 items of the original's Anxiety/Insecurity factor, which are related to anxiety, and 1 item of the original's Cognitive Impairment factor loaded on 1 factor on the Turkish PDSS.

Hovardaoğlu (2000) suggested that construct validity is adequate if the correlations between scales are significant in criterion-related validity. The analysis conducted to examine the criterion-related validity of the Turkish PDSS revealed a strong association between PDSS, and BDI and EPDS (Table III). Beck and Gable (2001) also reported similar results. In another study, Hanna et al. (2004) reported a significant relation between PDSS and EPDS. These results can be considered evidence of the criterion-related validity of PDSS.

Erkuş (2003) suggested that in addition to statistical significance, practical significance should be considered when interpreting the significance of positive correlation coefficients of the items. According to Erkuş (2003), Ebel (1965) reported that items with positive loadings ≥ 0.40 are very good discriminators, those 0.30-0.40 are good discriminators, those 0.20-0.30 should be revised, and those with positive loadings < 0.20 should be removed from the scale. It was seen that item-total test correlation coefficients ranged from 0.31 to 0.71 (Table II); thus, it is possible to say that according to item-total test correlation coefficients, only items 3 and 30 are good discriminators, and the remaining items are very good discriminators; according to item-total factor correlation coefficients, only items 23 and 28 are good discriminators, and the remaining items are very good discriminators.

In the present study test-retest data were gathered only from 20.2% (n = 90) of the participants, representing a limitation of the study. Test-retest findings of the study cannot represent all of the participants.

To conclude, the internal consistency coefficient, test-retest stability coefficient, split-half test reliability, exploratory factor analysis, criterion-related validity, and item-total test correlation coefficient analyses suggest that the validity and reliability of the Turkish PDSS is adequate and can be used in Turkey. In a future study it is planned to determine cut-off points for minor and major depression, sensitivity, and selectivity, as well as positive and negative estimation powers of the Turkish version of PDSS.

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