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#### **ARTICLE**

# Validity and reliability of the Turkish version of the *DSM-5* Dissociative Symptoms Severity Scale-Child Form

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#### **ABSTRACT**

The goal of this study was to assess the validity and reliability of the Turkish version of the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) Dissociative Symptoms Severity Scale-Child Form. The scale was prepared by translating and then back-translating the DSM-5 Dissociative Symptoms Severity Scale. The study groups included one group of 30 patients diagnosed with posttraumatic stress disorder who were treated in a child and adolescent psychiatry unit and another group of 83 healthy volunteers from middle and high schools in the community. For assessment, the Adolescent Dissociative Experiences Scale (ADES) was used in addition to the DSM-5 Dissociative Symptoms Severity Scale. Regarding the reliability of the DSM-5 Dissociative Symptoms Severity Scale, Cronbach's alpha was .824 and item-total score correlation coefficients were between .464 and .648. The test-retest correlation coefficient was calculated to be r = .784. In terms of construct validity, one factor accounted for 45.2% of the variance. Furthermore, in terms of concurrent validity, the scale showed a high correlation with the ADES. In conclusion, the Turkish version of the DSM-5 Dissociative Symptoms Severity Scale-Child Form is a valid and reliable tool for both clinical practice and research.

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#### **KEYWORDS**

Dissociative Symptoms Severity Scale; reliability; validity

Children often cannot protect themselves from physical, sexual, or psychological abuse. When they are exposed to these types of traumas, using dissociation as a defense mechanism might help distance them from the physical and psychological impacts of trauma, which can include pain, anger, fear, and mourning. Everything related to the trauma, including traumatic emotions, thinking, and perceptions, is removed from the consciousness in an encapsulated form and buried so deeply that it is beyond access via the normal memory

process. Therefore, dissociation serves as a defense against physical and psychic pain. When children are repeatedly traumatized, the use of this defense mechanism can be abnormal or excessive, which results in dissociative disorders (Zoroğlu, Tüzün, Öztürk, & Şar, 2000).

In a study conducted using a community sample, the Adolescent Dissociative Experiences Scale (ADES) was used to assess a group of adolescents, and 4.9% of the group reported having experienced prominent dissociative symptoms (Martínez-Taboas, Canino, Wang, García, & Bravo, 2006). In another study conducted in Sweden that used the Dissociation Questionnaire to assess a clinical sample, 50% of the adolescents and 2.3% of the nonclinical group had scores of 2.5 and higher, which was the cutoff point for the scale (Nilsson & Svedin, 2006b). In a study conducted in Turkey that performed clinical interviews in a clinical group, 45.2% of the group was diagnosed with a dissociative disorder (Sar, Önder, Kılınçaslan, Zoroğlu, & Alyanak, 2014). Although the typical onset of dissociative disorders occurs in childhood, 3% are diagnosed before 12 years of age and 8% are diagnosed during adolescence between 12 and 19 years of age (Kluft, 1984). It is of vital importance to diagnose the disorder formally at an early age because early treatment results in better outcomes; if the disorder is left undiagnosed and untreated, significantly more severe psychopathologies can occur. Suicide attempts, self-harming behavior, and substance abuse are commonly seen in the course of dissociative disorders (Karadağ et al., 2005; Kluft, 1984; Zoroglu et al., 2003).

Although the most common method used to evaluate dissociative disorders is the clinical interview, there are other tools to assess the presence of dissociation, such as the Child Dissociative Checklist, ADES, and Dissociation Questionnaire (Diseth & Christie, 2005). Assessments of the validity and reliability of the Turkish versions of the Child Dissociative Checklist and ADES have been conducted (Zoroglu, Sar, Tuzun, Tutkun, & Savas, 2002; Zoroglu, Tuzun, Öztürk, & Sar, 2002). The Child Dissociative Checklist is not a self-report and should be completed by an observer who knows the child very well (Zoroglu, Tuzun, et al. 2002). The ADES is a Likert-type self-report scale with 30 items that assess dissociative symptoms in children between 11 and 17 years of age. The items are rated by the adolescent on an 11-point Likert scale ranging from 0 = never to 10 = always, with no midpoint scores. Some validity studies on the ADES have reported the use of a different number of responses (Keck Seeley, Perosa, & Perosa, 2004). In their study, Keck Seeley et al. (2004) suggested that using a Likert scale with a smaller response range that included individual descriptors would improve the accuracy of symptom reporting for adolescents. Although it is common to use the scale as described, this method might create a disadvantage for the use of this scale, leading to the use of the 10answer-choice version in most research.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), which is among the most commonly utilized diagnostic classification systems for psychiatric illnesses and disorders and is renewed periodically, was recently published by the American Psychiatric Association (2013). For the publication of the DSM-5 diagnostic criteria in 2013, new scales and tools were required for the determination of disorder severities and for assessment in both field studies and psychiatric services, which created a need for new assessment tools based on the DSM-5 criteria for many psychiatric disorders (Practice, n.d.).

The *DSM*–5 Dissociative Symptoms Severity Scale–Child Form is used to assess the severity of dissociative symptoms in children and adolescents between 11 and 17 years old. This scale was designed to be utilized during the first assessment and at follow-up visits with individuals diagnosed with dissociative disorder (Practice, n.d.).

This study aimed to assess the validity and reliability of the Turkish version of the *DSM*–5 Dissociative Symptoms Severity Scale–Child Form.

#### Method

# **Translation process**

To carry out the translation of the *DSM*–5 Dissociative Symptoms Severity Scale–Child Form into Turkish, written consent was obtained from HYB Yayincilik and Boylam Psikiyatri Enstitüsü, who hold the publication and translation rights to the *DSM*–5 Source Book and Handbook for scale studies. The translation was carried out by three specialists in child and adolescent psychiatry. Once the text was standardized and agreed on, it was translated back into English. The translated text was compared to the original and checked to confirm that it met the warranted criteria for the inclusion of expected concepts. When the necessary approval was obtained, the scale text was finalized.

#### Sample

The study subjects consisted of healthy volunteers and patients seen in the Celal Bayar University Child Psychiatry Outpatient Unit. With the publication of the *DSM-5*, a dissociative subtype was added under the category of posttraumatic stress disorder (PTSD; American Psychiatric Association, 2013). In another field study, dissociative symptoms were defined in 14.4% of cases diagnosed with PTSD (Stein et al., 2013). With respect to these findings, and bearing in mind the high co-occurrence of dissociative symptoms and trauma, we decided to include cases diagnosed with PTSD following sexual abuse. This identified sample formed the clinical group of



individuals with a high risk of psychiatric symptoms, which consisted of 30 adolescents between 11 and 17 years old who had been seen in the Celal Bayar University Medical School Child Psychiatry Outpatient Unit for the diagnosis of PTSD based on DSM-5 criteria. Diagnoses in the patient group were made using a semistructured clinical interview based on the DSM-5 diagnostic classification system. Inclusion criteria included being 11-17 years of age, meeting the criteria for PTSD according to the DSM-5, and having a high enough level of intellectual functioning to follow the study instructions. Exclusion criteria included having a physical or neurological disorder that would require continuous treatment. The community sample that represented the low psychiatric risk group was obtained from schools in the area. For the sample size to be large enough, the number of volunteers in the study group needed to be 5- to 10-fold greater than the number of items on the scale, based on research statistics. As the scale contained eight items, we planned to include a minimum of 80 controls. Inclusion criteria for the control group included being between 11 and 17 years of age, not meeting any criteria for a psychiatric or a physical disorder, and having enough intellectual capacity to follow the study instructions.

Ethical approval was given by the Celal Bayar University Medical School Clinical Research Evaluation Committee.

#### Assessment tools

The DSM-5 Dissociative Symptoms Severity Scale-Child Form is an 8-item scale that determines the severity of dissociative symptoms in children and adolescents between 11 and 17 years old. The scale was designed to be used in the first assessment and for follow-up of children and adolescents with dissociative disorder (or with severe clinical dissociative symptoms). For each item, the individual is asked to rate the severity of the dissociative disorder symptoms in the past 7 days. Each item on the measure is rated on a 5-point scale (0 = not at all, 1 = once or twice, 2 = almost every day, 3 = about once a)day, and 4 = more than once a day). The total score ranges from 0 to 32, with higher scores reflecting the presence of more severe dissociative disorder symptoms. The clinician is asked to review the score for each item on the measure during the clinical interview and indicate the raw score for each item in the section provided for clinician use. Raw scores on the eight items should be summed to obtain a total raw score. In addition, the clinician is asked to calculate and use the average total score. The average total score reduces the overall score to a 5-point scale, which allows the clinician to think of the severity of the child's brief dissociative experiences in terms of none (0), mild (1), moderate (2), severe (3), or extreme (4). The average total score is calculated by dividing the raw total score by the number of items in the measure (i.e., 8). Use of the average total score was found to be reliable,

easy, and clinically useful to clinicians in the DSM-5 field trials. If three or more items are left unanswered, the total score on the measure should not be calculated. Therefore, the child should be encouraged to complete all of the items on the measure (Practice, n.d.).

The ADES was developed by Armstrong et al. to determine the dissociative symptoms of children between 11 and 17 years of age. The scale contains 30 sentences that assess the presence of dissociative experiences. The items are rated by the adolescent on an 11-point Likert scale ranging from 0 = never to 10 = always, with no midpoint scores. Within the scale, dissociative experiences are categorized into four main domains: dissociative amnesia, absorption, depersonalization/derealization, and being under the influence. The scale was adapted into Turkish by Zoroglu et al. (Zoroglu, Sar, et al., 2002).

# Statistical analysis

To show that there were no differences between study groups regarding sociodemographic and clinical characteristics, we used analysis of variance to compare numerical variables and the chi-square test to analyze categorical variables.

Cronbach's alpha internal reliability analysis was performed, and itemtotal score correlation coefficients were measured to determine the reliability of the scale. The DSM-5 Dissociative Symptoms Severity Scale was used to reassess 37 healthy volunteers 2 weeks after the initial assessment, and testretest reliability was determined by calculating the correlation coefficient for the two consecutive applications.

To determine the construct validity of the scale, we performed an explanatory factor analysis w on data derived from all study groups. To control the congruity of the sample for the explanatory factor analysis, we used the Kaiser-Meier-Olkin and Bartlett tests. The explanatory factor analysis was carried out by applying varimax rotation based on the main compounds method, and factors with eigenvalues equal to or greater than 1 were included. Among the factor constructs, items with factor loadings of 0.4 and above were included in the analysis. The explanatory factor construct was compared to the original dimension structure of the scale. The discriminative strength of distinguishing community and clinical samples was shown by the receiver-operating characteristic (ROC) curve. Measures of area under the ROC curve equal to and above 0.9 indicate good discriminative strength, whereas measures between 0.8 and 0.9 are regarded as acceptable.

In addition, the correlation between the DSM-5 Dissociative Symptoms Severity Scale-Child Form and the ADES was measured to determine concurrent validity. To measure the compatibility of the scales, we calculated kappa coefficients. Kappa values less than or equal to 0.20 indicate poor concordance, 0.21-0.40 concordance below medium, 0.41-0.60 medium concordance, 0.61–0.80 good concordance, and 0.81–1.00 very good concordance.



#### Results

The study included 30 patients seen in the Celal Bayar University Child Psychiatry Unit who had PTSD and 83 healthy volunteers. The sociodemographic and clinical features of the study groups are shown in Table 1.

There were significant differences between the patient and control groups regarding age (T = 2.044, p = .049), gender ( $\chi^2 = 28.818$ , p < .0001), mother's educational status ( $\chi^2 = 89.990$ , p < .0001), father's educational status  $(\chi^2 = 88.689, p < .0001)$ , academic status  $(\chi^2 = 44.211, p < .0001)$ , DSM-5 Dissociative Symptoms Severity Scale-Child Form total score (T = -2.550, p = .012), and ADES total score (T = -4.962, p < .0001).

# Reliability analyses

Cronbach's alpha coefficient was determined to be .824 in the reliability analyses of the DSM-5 Dissociative Symptoms Severity Scale-Child Form. Cronbach's alpha coefficients for each item are shown in Table 2. Item-total score correlation coefficients were found to be between .464 and .648

Table 1. Sociodemographic data for the study groups.

Characteristic	PTSD group $(N = 30)$	Healthy volunteers $(N = 83)$
Age*	14.96 ± 2.45	15.90 ± 0.86
Gender*	14.90 ± 2.43	13.90 ± 0.00
Female	20 (06 70/)	22 (20 00/)
Male	29 (96.7%)	33 (39.8%)
111-11-2	1 (3.3%)	50 (60.2%)
Academic status*	46 (52 201)	02 (4000()
In school	16 (53.3%)	83 (100%)
Not in school	14 (46.7%)	0 (0%)
Mother's educational status*		
Primary and secondary school	27 (90%)	2 (2.4%)
High school	3 (10%)	21 (25.3%)
College	0	60 (72.3%)
Father's educational status*		
Primary and secondary school	27 (90%)	2 (2.4%)
High school	0 (0%)	11 (13.3%)
College	3 (10%)	70 (84.3%)
Duration of the disorder		
New diagnosis	1 (3.3%)	
1–6 months	24 (80%)	
More than 6 months	5 (16.7%)	
Medications used	,	
Antidepressants	25 (83.3%)	
Antipsychotics	6 (20%)	
Benzodiazepines	0 (0%)	
Scores on the assessment scales*	` ,	
DSM-5 Dissociative Symptoms Severity Scale-Child Form*	12.36 ± 6.26	$8.67 \pm 6.97$
Adolescent Dissociative Experiences Scale*	122.30 ± 52.61	65.96 ± 53.52

Notes: PTSD = posttraumatic stress disorder; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

<sup>\*</sup> p < .05

(see Table 2). Data for 37 of the volunteers were included in the test-retest evaluation, and the correlation between the assessments, which were 2 weeks apart, was found to be  $r = .784 \ (p < .0001)$ .

# Validity analyses

To determine the construct validity, we used an explanatory factor analysis to assess the DSM-5 Dissociative Symptoms Severity Scale-Child Form. Before the explanatory factor analysis, a Kaiser-Meyer-Olkin analysis was used to assess whether the sample was congruent, and the results showed a coefficient value of 0.824. Using the Bartlett test, we calculated the chi-square value to be 281,047 (p < .0001). These results indicate that the sample group was congruent with the factor analysis.

In the factor analysis, the two factors with eigenvalues greater than 1 were affirmed (see Table 2). The eigenfactor value of the first factor was 3,620, and it explained 45.2% of the variance. All items loaded on the first factor. Factor loadings were found to be between 0.566 and 0.773. The eigenfactor value of the second factor was 1,162, and it explained 14.5% of the variance. Because essentially all of the items loaded on the first factor, and the second factor explained only a small portion of the variance, the scale was considered to be a single-factor scale.

In the analysis of the concurrent validity of the DSM-5 Dissociative Symptoms Severity Scale-Child Form and the ADES, the correlation coefficient was found to be r = .687 (p < .0001). Even though the correlation between the two scales was statistically significant, the level of significance was not very high. The kappa coefficient was calculated to assess diagnostic compatibility between the two scales. The rate of diagnostic concordance between the two scales was 81.4%, with a kappa coefficient of 0.487 (p < .0001; see Table 3). In the ROC analysis of the DSM-5 Dissociative Symptoms Severity Scale-Child Form that included the healthy group and the group diagnosed with ADES (the ones scoring above ADES cutoff scores), the area under the ROC curve was measured as 0.846.

Table 2. Item-total score correlation coefficients, Cronbach's alpha coefficients, and factor loadings for items on the DSM-5 Dissociative Symptoms Severity Scale-Child Form.

ltem	Item-total score correlation coefficient	Cronbach's α	Factor 1
Dissociative 1	.548	.803	0.672
Dissociative 2	.648	.790	0.773
Dissociative 3	.546	.803	0.663
Dissociative 4	.519	.807	0.659
Dissociative 5	.540	.805	0.681
Dissociative 6	.516	.809	0.626
Dissociative 7	.596	.796	0.722
Dissociative 8	.464	.814	0.566

Notes: DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Table 3. Concordance between the DSM-5 Dissociative Symptoms Severity Scale and Adolescent Dissociative Experiences Scale with kappa coefficient.

	DSM-5 Dissociative Symptoms Severity Scale		Total
	Diagnosis –	Diagnosis +	
Adolescent Dissociative Experiences Scale			
Diagnosis –	76 (83.5%)	6 (27.3%)	82 (72.6%)
Diagnosis +	15 (16.5%)	16 (72.7%)	31 (27.4%)
Total	91 (100%)	22 (100%)	113 (100%)

Notes: Concordance level = 81.4%.  $\kappa$  = 0.487. DSM-5 = Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

#### Discussion

This study examined the validity and reliability of the Turkish version of the DSM-5 Dissociative Symptoms Severity Scale-Child Form and showed that the Turkish version is acceptable. Studies of the validity and reliability of this scale have not yet been carried out in other countries, making this study the first of its kind in the literature.

The ADES is a self-report form used in evaluating dissociative disorders in children, that has Turkish validity and reliability. Cronbach's alpha coefficient for the ADES in its Turkish validity and reliability study was calculated as .93 for all participants, .90 for the PTSD group, and .80 for the dissociative disorder group. The test-retest reliability coefficient of the Turkish version was .91 (Zoroglu, Sar, et al., 2002). In our study, Cronbach's alpha for the DSM-5 Dissociative Symptoms Severity Scale-Child Form was .824, which indicates a high level of consistency. Item-total score correlation coefficients were also found to be medium and high. These results indicate that each item separately and within the scale as a whole is congruent and complementary, indicating that the construct is reliable. The correlation between the two assessments from the test-retest evaluation was found to be r = .784, a statistically significant correlation. As mentioned before, the test-retest coefficient for the Turkish version of the ADES was .91. The value measured in our study was relatively smaller compared to what was found for the ADES. Studies conducted in other countries with the ADES reported test-retest reliability coefficients of .835 in the Czech Republic, .99 in Korea, and .71 in Sweden (Nilsson & Svedin, 2006a; Shin, Jeong, & Chung, 2009; Soukup, Papezova, Kubena, & Mikolajova, 2010). Values equal to or greater than .70 generally indicate reliability and stability of the scale in the face of change. As indicated by both the internal consistency coefficient and test-retest reliability coefficient, the Turkish version of the DSM-5 Dissociative Symptoms Severity Scale-Child Form is a reliable tool.

In the concurrent validity analysis, the correlation between the DSM-5 Dissociative Symptoms Severity Scale-Child Form and the ADES was determined to be r = .687, a large correlation. The concurrent validity of the scale provides evidence of the scale's validity for use.

An explanatory factor analysis was used to assess the *DSM*–5 Dissociative Symptoms Severity Scale, and it identified a single factor for the scale. The conceptualization of dissociative symptoms as a single-factor construct contributes to the high specificity of the scale for the cluster of dissociative symptoms. By using the scale in this way, clinicians may obtain clear information without any confounding factors regarding the severity of dissociative symptoms. Furthermore, using this scale for follow-ups might help clinicians monitor the severity of dissociative disorders.

Both the construct and concurrent validity indicate the validity of the Turkish version of the *DSM*–5 Dissociative Symptoms Severity Scale–Child Form.

# Limitations of the study

The primary and major limitation of this study is that the clinical sample consisted of individuals who were diagnosed with PTSD, not dissociative disorder. Another limitation is the relatively small number of subjects and specifically the fact that the patient group comprised individuals in the symptomatic phase of the disorder. Another limitation is the lack of a structured clinical interview for the control group to determine any potential disorder diagnoses. In addition, the significant differences between the patient and control groups regarding age, gender, education, and parental education must be taken into consideration when evaluating the differences obtained in the comparative analyses of the items of the scale. In the directing of the study aims, all statistical analyses could be accomplished without excluding any subjects with the given sample size. A strength of this study is that the sample size might be representative of patients in clinical practice. Using the methodology used in this study, we proved the clinical utility of the Turkish version of the DSM-5 Dissociative Symptoms Severity Scale-Child Form.

#### Conclusion

In conclusion, these findings indicate that the Turkish version of the *DSM*–5 Dissociative Symptoms Severity Scale–Child Form can be used as a valid and reliable tool both in clinical practice and for research purposes.

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