Psychometric Properties of the Turkish Version of the Screening Instrument for Borderline Personality Disorder

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ABSTRACT

Patients with borderline personality disorder are a population for whom mental health professionals have difficulty in both diagnosing and providing treatment services. This study aimed to investigate the psychometric properties of the Screening Instrument for Borderline Personality Disorder (SI-Bord) in a Turkish sample. Participants were invited to study via online methods between August 2020 and October 2020. Data were collected from 661 participants ranging between the ages of 18 and 67 (Mean = 35.99). This study demonstrated that the Turkish version of SI-Bord is a valid and reliable measure to evaluate borderline personality disorder, which is encountered in clinical practice both as a comorbid disorder and as a unique diagnosis requiring a differential diagnosis. **[*Psychiatr Ann.* 2022;52(9):380-387.]**

Although the term 'borderline' was first defined by Stern in 1938, studies on borderline personality organization were mostly done by Kernberg.[1] Kernberg defines borderline personality organization as identity dispersal, use of primitive defense mechanisms, self-weakness, and inability to evaluate reality.[2] Borderline personality disorder (BPD), which was classified as a disease in the Diagnostic and Statistical Manual of Mental Disorders (DSM), Third Edition in 1980 for the first time in the literature, is a clinical situation more common in women, begins in young adulthood, and shows continuity with variability in impulse control, interpersonal relationships, self-perception, and mood.[1] Impulse control problems, inconsistency in interpersonal relationships, intensity in mood, ambivalence, and sudden change can lead to self-harm and repetitive suicide attempts, addiction or inability to attach, loneliness, paranoid thought content, anger, severe dissociative symptoms, and a sense of emptiness in persons with BPD.[1,3] The prevalence of BPD in the community is thought to vary between 1.2% and 6%, but BPD constitutes 10% of the outpatient population and 20% of the inpatient population. Genetic, congenital, and environmental factors; domestic violence history; separation from parents; inappropriate parental behaviors; childhood traumatic experiences; and insufficient family support are included in the etiology of BPD.[1,4]

Patients with BPD are a population for whom mental health professionals have difficulty in both diagnosing and providing treatment services. Patients in this population encounter interpersonal and social problems and have inadequate coping mechanisms to solve these problems. Due to their

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Originally submitted October 30, 2021. Accepted for publication March 22, 2022.

Disclosure: The authors have no relevant financial relationships to disclose.

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doi:10.3928/00485713-20220715-03

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ambivalent attitudes in human relations, it is difficult for them to seek help even from experts in the field of mental health.[3] Because there are currently no biomarkers that can be used to diagnose personality disorders, scales or interview methods are used to diagnose and provide the appropriate approach.[5] BPD, which is specified as "emotional nonstationary personality disorder," is divided into two subgroups: impulsive type and borderline type. Each subgroup has its specific diagnostic criteria in the International Classification of Diseases, Tenth Revision diagnostic manual. According to the DSM-5 classification updated by the American Psychiatric Association, it is necessary to have five or more of nine criteria that manifest themselves in many areas from an early age to diagnose BPD.[6,7] In the International Classification of Diseases, Tenth Revision, it is known that the impulsive type of emotionally unstable personality disorder comprises only emotional instability and impulsivity. In this subtype, outbursts of violence or threatening behaviors are commonly seen. On the other hand, the borderline subtype consists of unstable interpersonal relationships, excessive fear of abandonment, identity disturbance, self-destructive behaviors, and chronic feelings of emptiness in addition to the impulsive subtype features.[7]

BPD also causes disruptions in the diagnosis and treatment process when encountered as an additional diagnosis in clinical pathologies. In addition, the high probability of being seen as comorbid with diseases such as mood disorder, anxiety disorder, substance use, eating disorder, and attention-deficit/hyperactivity disorder makes it important to make a diagnosis of BPD. On the other hand, when the literature was examined, it was seen that there were a limited number of scales for BPD in Turkish.[2,8] In clinical practice, we believe that this scale will help fill the gap in the BPD literature by assisting in the diagnosis process and organizing effective treatment of those with this personality disorder, which is frequently accompanied by other psychiatric disorders. Therefore, in this current study, the Screening Instrument for Borderline Personality Disorder (SI-Bord), developed by Lohanan et al.,[9] is intended to be used in Turkish and clinical use.

MATERIALS AND METHODS

Participants

Seven hundred forty-two volunteers participated in the study. Participants younger than 18 years; those diagnosed with schizophrenia, bipolar affective disorder, or alcohol or substance use disorder; and those with an alcohol intoxication history within 24 hours of participating in the study were excluded from the study. Six hundred sixty-one adults aged 18 to 67 years (Mean, M = 35.99, SD = 12.20), of whom 74.3% (n = 491) were women, were included in the data analysis. Participants who volunteered for the Zoom Structured Clinical Interview for DSM-5 Personality Disorders (SCID-5) interview and who had scores higher than 1 point in the Turkish version of SI-Bord were invited to the interview. Dr. Unsal, Dr. Yalım, and Dr. Par interviewed with 93 participants (n = 68 women, 73.1%).

Ethical Permission

Ethical permission was granted from the Middle East Technical University Human Research Ethical Review Board (protocol number 243 ODTU 2020) on August 4, 2020.

Procedure

The study was conducted jointly by the Gülhane Training and Research Hospital, Department of Psychiatry, and the Middle East Technical University Psychology Department. Participants consisted of volunteers who were invited to study via online methods between August 2020 and October 2020, who met the mentioned criteria, and whose consent was obtained. After relevant permissions were obtained from the corresponding author of SI-Bord, the scale was translated into Turkish, and the accuracy of the translations was requested from three psychiatrists. After the consistency of the scales translated into English was determined by experts who have command of both languages, the data collection phase was started.

This cross-sectional online study was twofold. First, participants were invited to the online survey prepared in Qualtrics with the aid of various social media platforms. Convenience sampling was used to recruit participants. The Sociodemographic Data Form, the Turkish version of SI-Bord, the Multidimensional Perceived Social Support Scale (MSPSS; Turkish form), the Perceived Stress Scale-10 (PSS-10; Turkish form), and the Patient Health Questionnaire-9 (PHQ-9; Turkish form) were given to the participants who volunteered. At the end of the survey, email addresses or mobile numbers of participants who were willing to attend the SCID-5 Zoom Interview were requested.

The DSM-5 Structured Clinical Interview for Personality Disorders was administered via an online interview to those with a score of 1 and above in the Turkish version of SI-Bord and who were accepted to participate in the second stage of the study. SCID-5 interviews were accomplished to be able to determine the cut-off score of the Turkish version of SI-Bord. When the initial interviews were recorded by the psychiatrist author (Dr. Unsal), they were shared to be coded by the other two psychiatrists (Dr. Yalım and Dr. Par). Those who scored zero were

Table 1

Demographic Data	
Variable	***n* (%)**
Gender	
Female	491 (74.3)
Relationship status	
Single	294 (44.5)
Married	298 (45.1)
Divorced	48 (7.3)
Widow	9 (1.4)
Cohabitation	5 (0.8)
In a relationship	7 (1.1)
Has children (*n* = 297)	297 (43.4)
Number of children	
1	133 (20.1)
2	126 (19.1)
3	21 (3.2)
6	1 (0.2)
Educational level	
Elementary school	1 (0.2)
Middle school	6 (0.9)
High school	45 (6.8)
College student	117 (17.7)
Undergraduate degree	326 (49.3)
Graduate student	98 (14.8)
Graduate degree	68 (10.3)

Table 1, continued

Demographic Data	
Variable	***n* (%)**
Job (*n* = 661)	
Officer	171 (25.9)
Student	130 (19.7)
Retired	79 (12)
Laborer	65 (9.8)
Unemployed	54 (4.2)
Housewife	28 (4.2)
Other	134 (20.2)
Monthly income	
Low (<2500TL)	199 (30.2)
Middle	331 (50.1)
High (>8000TL)	131 (19.7)
Has psychiatric diagnosis	150 (22.7)
Has psychiatric diagnosis in family	178 (26.9)
Cigarette user	222 (33.6)
Alcohol user	352 (53.7)
Substance user	38 (5)

accepted as the control group. At the end of the study, these two groups were compared in terms of perceived social support, perceived stress, and depressive symptoms. Analyses were conducted using IBM SPSS, Version 25.

Measures

Demographic form. The questionnaire was prepared by the researchers and administered to the participants to determine their sociodemographic characteristics such as age, gender, marital status, education level, working and economic status, physical and psychiatric disease history, smoking, alcohol, and substance use.

SI-Bord. The scale developed by Lohanan et al.[9] has been modified from Short-Bord, which evaluates BPD criteria in DSM-5 with five questions: (1) abandonment avoidance, (2) interpersonal relationship instability, (3) identity disturbance, (4) suicidal and self-harm behaviors, and (5) affective instability. SI-Bord has 4-point Likert scales, ranging from never (0) to very often (3), whereas the original version of the Short-Bord uses a true-false response. The total score ranges from 0 to 15. Higher scores represent more BPD symptoms or traits. The study sample yielded a Cronbach's alpha of 0.76.[9] Cronbach's alpha of the Turkish version of SI-Bord was found to be 0.70 in this study.

MSPSS. The MSPSS is a scale developed by Zimet et al.[10] in which the adequacy of social support received by family, friends, and significant others is subjectively evaluated. It consists of 12 items, each with a 7-point Likert type rating (1 = very strongly disagree, 7 = very strongly agree). Higher scores in the scale indicate higher perceived social support. The scale has three separate subscales for significant others, friends, and family.[10] The Turkish validity and reliability study of the scale was performed by Eker et al.[11] It was calculated that the Cronbach's alpha reliability coefficient was 0.89 for the whole scale and between 0.85 and 0.92 for the subscales.[11] Cronbach's alpha of the MSPSS was found to be 0.89 for the whole scale, 0.94 for significant others, 0.90 for family, and 0.89 for friends.

PSS-10. In the PSS-10,[12] participants answered how often they had

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Table 2

SI-Bord Inter-Item Total Correlation, Item Mean, Items' Factor Loadings and Cronbach's Alpha if Item Deleted

SI-Bord Item	Item-item correlation					Item-total correlation	Item Mean	Factor loading	Cronbach's Alpha if Item Deleted
	1	2	3	4	5				
1. Avoid abandonment	1					.67*	1.23±.92	.61	.72
2. Unstable relationship	.31*	1				.67*	.79±.85	.65	.70
3. Identity disturbance	.39*	.40*	1			.84*	.82±.96	.85	.60
4. Self harm	.20*	.26*	.33*	1		.49*	.10±.38	.57	.74
5. Mood change	.34*	.38*	.74*	.36*	1	.82*	.76±.90	.84	.62

**P < .001.*
SI-Bord = Screening instrument for borderline personality disorder.

experienced stressful feelings in the last week on a 5-point Likert scale (0 = never to 4 = very often). PSS-10 scores were obtained by reversing the scores on the four positive items; the items were 4, 5, 7, and 8. Total scores range from 0 to 40, with higher scores indicating greater overall distress.[12] The Turkish version of the scale was performed by Örücü et al. and the alpha coefficient for the Turkish version of PSS was found to be 0.84.[13] Cronbach's alpha of PSS-10 was found to be 0.90 in this study.

PHQ-9. The PHQ-9 was developed by Kroenke et al.[14] and translated into Turkish. The scale has nine questions for depression symptoms according to DSM-IV. On the scale, each question is scored between 0 (not at all) and 3 (nearly every day). Scores between 1 and 4 are rated as minimal, 5 and 9 as mild, 10 and 14 as moderate, 15 and 19 as moderately severe, and 20 and 27 as severe depression according to the original questionnaire. Cronbach's alpha coefficient was calculated as 0.84 for the whole scale and between 0.81 and 0.83 for each question separately.[14,15] Cronbach's alpha of PSS-10 was found to be 0.86 in this study.

SCID-5. SCID-5 was developed by First and includes a structured clinical interview and scoring system for the categorical and dimensional evaluation of personality disorders in DSM-5.[16] Bayad et al. performed the adaptation of the part of the scale structured for personality disorders to Turkish and the examination of psychometric properties.[17]

RESULTS

The mean age of the participants in the study was 35.99 ± 12.20. As a result of the evaluation, it was determined that 74.3% (n = 491) of the participants were female. Other descriptive data of participants are given in **Table 1**.

Principal Component Analysis

Principal component analysis (PCA) was performed to examine the factor structure of the Turkish version of SI-Bord. The Kaiser-Meyer-Olkin measure of sampling adequacy showed that the coefficient was 0.74, which is higher than its minimum required

Table 3

Concurrent Validity: Correlations Among SI-Bord, r-MSPSS, PSS, and PHQ-9

	PSS-10	MSPSS-Fa	MSPSS-Fr	MSPSS-SO	PHQ-9
SI-Bord	.43*	-.28*	-.22*	-.16*	.62*
PSS-10	1	-.12*	-.10*	.04	.41*
MSPSS-Fa		1	.44*	.32*	.32*
MSPSS-Fr			1	.30*	.25*
MSPSS-SO				1	.15*
PHQ-9					1

*P<.01.
SI-Bord = Screening instrument for borderline personality disorder, MSPSS = Multidimensional Scale of Perceived Social Support, SO = Significant Others, FA = Family, and FR = Friends, PSS = Perceived Stress Scale, PHQ-9 = Patient Health Questionnaire-9.

value of 0.60. Bartlett's test of sphericity was significant (df = 10, P<.001), indicating the suitability of the correlation matrix for factoring. Scree plot and eigenvalues revealed 1 factor with an eigenvalue of 2.53, which explained 50.54% of the total variance. Factor loadings of the item are demonstrated in **Table 2**.

Interrater Reliability

The intraclass correlation coefficient (ICC) was used to determine the rater's agreement, which is also called interrater reliability. The ICC value was greater than 0.9, which was acceptable. The internal consistency of the instrument was 0.74, determined by Cronbach's alpha, which was similar to the original article and found to be acceptable. The concurrent validity of SI-Bord was examined using Pearson's correlation coefficients between SI-Bord and with the subscales of MSPSS (family, friends, and significant others), T-PSS-10, and PHQ-9 and was significant **(Table 3)**.

Receiver Operating Characteristics Curves Analysis

The receiver operating characteristics (ROC) curve was analyzed to determine the cut-off score of SI-Bord **(Figure 1)**. The area under the ROC curve was 0.96 (95% CI, 0.930 to 0.997; SE = 0.017; P < .0001). Sensitivity and specificity, demonstrated in **Figure 1**, were determined using the SCID-5 results collected by the psychiatrists. According to sensitivity and specificity values, for cut-off scores greater than 6.5, sensitivity is 67% and specificity is 3%; for cut-off scores greater than 7.5, sensitivity is 46% and specificity is 1%. As the scale only permits precise scores, the cut-off score was determined to be greater than 7, the sensitivity and specificity of which ranged between 46% and 67% and between 1% and 3%, respectively.

DISCUSSION

This study demonstrated that the Turkish version of SI-Bord is a valid and reliable measure to evaluate BPD, which is encountered in clinical practice both as a comorbid disorder and as a unique diagnosis requiring a differential diagnosis. In the literature, it has been declared that the lifetime prevalence of BPD is approximately 6% and it is mostly seen in women.[18] However, this gender difference is considered to be attributable to the fact that women currently seek mental health services more often than men.[19] It was calculated that 74% of the participants are women in our study. Similar to the literature, this can be explained as women applying because of mental complaints and volunteering for mental health research at a rate higher than men.

Additionally, differential diagnosis of BPD is a difficult decision as it can be seen with various disorders, such as depression, bipolar affective disorder, attention-deficit/hyperactivity disorder, and post-traumatic stress disorder, or after self-mutilative behaviors and suicide attempts.[20] According to our ROC analysis, there is a 96% chance that the Turkish version of SI-Bord will correctly distinguish a BPD case from a non-BPD case, which is higher than the original SI-Bord.[9]

As the scale only permits precise scores, in our study the cut-off score was determined to be greater than 7, the sensitivity and specificity of which ranged between 46% and 67% and be-

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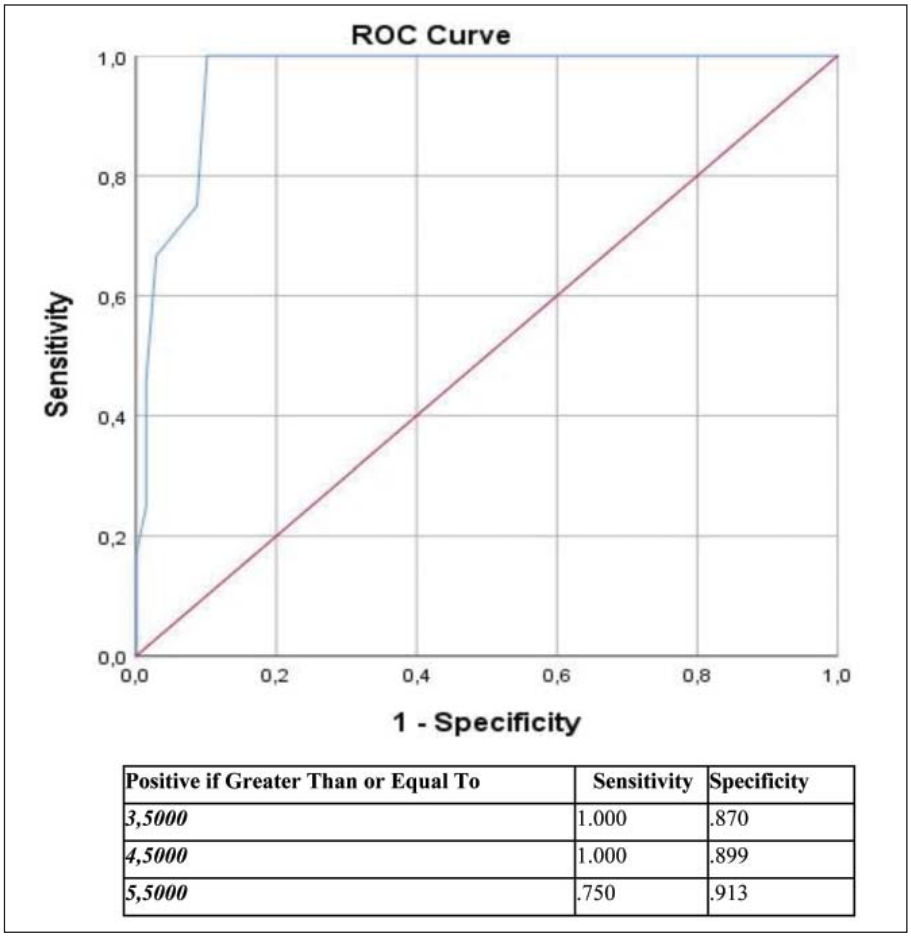
tween 1% and 3%, respectively. Overall, correct prediction of BPD was more than 55%, indicateing that more than half of the csaes of BPD can be predicted correctly with the aid of the Turkish version of SI-Bord; in addition, the risk of missing the diagnosis of less than 45% of BPD was taken into account in the process of determining the cut-off score. On the other hand, the risk of diagnosing BPD in those who do not have it was determined as 2%. Although the sensitivity of the Turkish version of SI-Bord was similar to the original one, its specificity was better (2% < 7%), indicating that the Turkish version of SI-Bord has better diagnostic quality. Therefore, the cut-off score, which was determined as 7, was found to be appropriate for the Turkish SI-Bord for clinical purposes. In addition, the reliability results showed that Cronbach's alpha of the Turkish version of SI-Bord was found to be 0.70 in this study and ICC results were higher than 0.90, making the instrument reliable.

In the study by Demirkol et al.,[21] perceived stress was shown to be a transdiagnostic factor between BPD and depressive symptoms and was associated with anger, hostility, and self-harm behaviors. In addition, the level of perceived stress and the number of suicidal attempts were higher in the BPD group than in the control group.[21] According to concurrent validity results, the Turkish version of SI-Bord had the highest positive correlation values with depression ($r = 0.62$) and perceived stress scores ($r = 0.43$), which are congruent with the literature. The Turkish version of SI-Bord was negatively correlated with the social support of family ($r = -0.28$), friends ($r = -0.22$), and significant others ($r = -0.16$), similar to the literature.[22]

PCA results demonstrated that the Turkish version of SI-Bord had a one-factor structure, and it is appropriate to conduct PCA to it in accordance with the Kaiser-Meyer-Olkin and Bartlett sphericity values. Therefore, the instrument has construct validity. On the other hand, in the interitem total correlation, correlation of items with SCID-5 diagnoses and factor loadings of PCA results showed that translation of item 4 ('I threaten to hurt myself or attempt to hurt myself or have attempted suicide;' in Turkish 'Kendime zarar vererek, zarar vereceğimi söyleyerek ya da intihar girişiminde bulunarak etrafımdakileri tehdit ederim.') had the lowest score among the other items. First, suicidal ideation and self-harm are taboo issues to discuss in public; therefore, people might distort their real ideas about self-harm and suicide because of social desirability. Moreover, according to the study by Fawzy et al., it was found that people with more moral and religious values had fewer suicidal thoughts and suicide attempts.[23] Similarly, item 4 might be hard to respond to without distortions in Turkish culture because it is forbidden by Muslim religious doctrine. However, we did not measure the social desirability and religiousness of the participants.



Positive if Greater Than or Equal To	Sensitivity	Specificity
3,5000	1.000	.870
4,5000	1.000	.899
5,5000	.750	.913

Figure 1. Receiver operating characteristics (ROC) curves.

There are few studies in the literature on the prevalence rates of personality disorders in the Turkish sample. In the study conducted by Sar et al.,[24] the BDP rate was 8.5% among Turkish university students, whereas in the study by Dereboy et al.,[25] this rate was found to be 10.2%. In our study, SCID-5 results revealed that 24 of the

participants (3.6%) can be diagnosed with BPD. Moreover, there were 103 participants (15.6%) in the current study have scored more than 7 points from the Turkish version of SI-Bord. These statistics seem congruent with the prevalence rates in the literature.

This study has several limitations, including a limited sample size; a nonclinical community sample, which is not a clinically diagnosed BPD sample; reaching a convenient sample by the aid of online methods with mostly self-report measures; the possible fluctuating mood swings of the participants; and a cross-sectional design. However, it is known that comorbidities such as depression and anxiety disorders are common in patients with BPD. Therefore, it could be possible to say that the results of the study may have been influenced when considering the emotional changes of people who have these comorbidities, which were not in the exclusion criteria.

In conclusion, the results demonstrated that the Turkish version of SI-Bord is a valid and reliable measurement tool for clinical purposes. However, the psychometric properties of the Turkish version of SI-Bord must be investigated in clinical BPD samples to prove its usefulness, as the diagnosis and the differential diagnosis of BPD is difficult to determine in clinical practice.

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