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Relationship of the Borderline Symptom List to DSM-IV Borderline Personality Disorder Criteria Assessed by Semi-Structured Interview

Catherine R. Glenn Anna Weinberg E. David Klonsky

Stony Brook University, Stony Brook, N.Y., USA

Key Words
Borderline symptom list · Borderline personality disorder · Assessment

Abstract
Background: Borderline personality disorder (BPD) is a debilitating mental illness that affects approximately 6% of the general population and 10–20% of psychiatric patients. The Borderline Symptom List (BSL) is a self-report questionnaire designed to comprehensively assess BPD symptomatology. ***Sampling and Methods:*** The present study examined the convergence of the BSL with DSM-IV BPD assessed by semi-structured interview. To ensure variability in BPD symptoms, participants were recruited from a large college sample if they generated either high or low scores on a BPD symptom screening questionnaire. The final sample included 59 participants who completed the BSL, the BPD questions from the Structured Interview for DSM-IV Personality (SIDP-IV), and self-report measures of depression and anxiety. ***Results:*** Ten participants (17%) met the full BPD criteria and 29 (49%) met 2 or more criteria. Results indicate strong convergence between the BSL and BPD assessed by semi-structured interview, even when controlling for measures of depression and anxiety. The shortened version of the BSL, the BSL-23, also correlated robustly with BPD assessed by semi-structured interview. ***Conclusions:*** Findings support the validity of the BSL (and BSL-23) as a self-report measure of BPD symptomatology. Future research should replicate results in other samples, including those drawn from psychiatric populations.

Introduction

Borderline personality disorder (BPD) is a debilitating mental illness typified by persistent emotional instability, unstable interpersonal relationships, identity confusion, and impulsive behaviors. In the general population, rates of BPD are approximately 1% and lifetime prevalence of the disorder is estimated to be 5.9% [1–3]. Between 10 and 20% of psychiatric patients are estimated to have BPD [3]. Approximately 10% of patients with BPD attempt suicide, a rate nearly 50 times greater than the general population [4]. Due to the disorder's severe and persistent symptoms, patients with BPD require more treatment services than other disordered groups [5, 6].

Validated structured and semi-structured interviews are considered the 'gold standard' for assessing BPD. Several such interviews have been developed to assess the DSM-IV personality disorders, including BPD, such as: the Structured Interview for DSM-IV Personality (SIDP-IV) [7], the Structured Clinical Interview for DSM-IV Axis II Personality Disorders [8], the Diagnostic Interview for DSM-IV Personality Disorders [9], the International Personality Disorder Examination [10], and the Personality Disorders Interview IV [11]. There are also several interviews designed specifically to assess BPD, including the Diagnostic Interview for BPD (revised) [12], the Borderline Personality Disorder Scale [13], the Borderline Personality Disorder Severity Index [14], and the Zanarini rating scale for BPD [15]. Although semi-structured interviews may be preferable, self-report measures are useful because they can take less time and effort to

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E. David Klonsky, PhD
Department of Psychology
Stony Brook University
Stony Brook, NY 11794-2500 (USA)
Tel. +1 631 632 7801, Fax +1 631 632 7876, E-Mail edklonsky@gmail.com

administer. Reliable and valid self-report measures of BPD symptomatology include the Borderline Syndrome Index [16], the McLean Screening Instrument for BPD (MSI-BPD) [17], and the Borderline Personality Inventory [18].

One of the newest self-report measures for BPD is the Borderline Symptom List (BSL) [19, 20]. The BSL was developed to assess in detail the wide range of experiences and complaints commonly reported by individuals with BPD. The BSL is composed of 95 items generated from patients' statements and clinical experts' reports about patients. The 95 items are summed to form a total BSL score, and are also divided into 7 subscales: self-perception, affect regulation, hostility, self-destruction, dysphoria, loneliness, and intrusions. Whereas other self-report measures of borderline personality disorder function mainly as diagnostic instruments, the BSL provides detailed information about clinically relevant symptoms and complaints, and this information is likely to be particularly useful in treatment contexts and treatment research. The first article in English on the BSL described the initial psychometric properties of the scale [21]. Results indicated that the total BSL demonstrated excellent test-retest reliability over a 1-week period (r = 0.84), and differentiated clinically diagnosed BPD patients from patients with axis I disorders and from healthy controls. In addition, the BSL demonstrated good sensitivity to changes achieved in treatment when administered following a 12-week intervention for BPD. Because of its good psychometric properties, numerous clinical studies of BPD incorporate the BSL into the study protocol [22–24]. A reliable and valid short-form of the BSL has also been developed [20].

Despite its promising psychometric properties, the BSL's convergence with a 'gold standard' semi-structured interview assessment of BPD has yet to be examined. Good convergence with a semi-structured interview would support the validity and utility of the BSL as a self-report measure of BPD symptomatology. Therefore, the purpose of the present study was to examine the relationship of the BSL to BPD criteria assessed by a valid semi-structured interview.

Method

Participants and Procedure

Participants were 59 young adults (16 male, 43 female) recruited from a college sample who scored either high or low on a screening measure for BPD (see 'Measures'). The mean age of the sample was 20.9 years (SD = 4.0) and the racial composition of the sample was 52% Caucasian, 17% Asian, 12% African-American, 12% Hispanic, and 7% other ethnicity. All participants gave informed consent and completed a battery of self-report measures and a semi-structured interview for course credit.

Measures

McLean Screening Instrument for BPD. The MSI-BPD [17] was used to recruit participants for the study. The McLean is a brief 10-item self-report screening measure of the DSM-IV criteria for BPD. Compared to a validated semi-structured interview, the MSI-BPD has demonstrated excellent sensitivity and specificity (both above 0.90) in young adults [17]. To ensure variability in BPD symptoms, approximately half of the participants (n = 32) were recruited if they scored higher than a 7 on the MSI-BPD, and the remaining participants (n = 27) were recruited if they scored a 1 or a 0 on the MSI-BPD. Previous research suggests that a cutoff score of 7 or higher on the MSI-BPD yields the best sensitivity and specificity (i.e. 0.81 and 0.85, respectively) for a BPD diagnosis [17]. In fact, sensitivity and specificity at this cutoff are even higher (i.e. 0.90 and 0.93, respectively) for younger adults (i.e. less than 25 years old) [17]. The low cutoff (i.e. 1 or 0) on the MSI-BPD was utilized in order to increase the range of BPD symptoms present in the overall sample. Recruited participants were administered the BSL, self-report measures of depression and anxiety, and a semi-structured interview assessing BPD.

Borderline Symptom List. The BSL is composed of 95 items that ask participants to rate how much they have suffered from each problem in the last week on a scale from 0 (not at all) to 4 (very much). Some sample items from the BSL subscales are: self-perception ('felt cut off from myself', 'paralyzed'), affect regulation ('overwhelmed by my feelings', 'experienced stressful inner tension'), hostility ('irritated', 'angry'), self-destruction ('longing for death', 'suicidal thoughts'), dysphoria ('unsatisfied', 'unbalanced'), loneliness ('isolated from others', 'believed that nobody could understand me'), and intrusions ('tortured by images', 'felt the presence of someone who was not really there'). The BSL was translated by its authors from German to English [21], and some minor revisions were made to the language in the instructions to increase readability. For example, the questionnaire instructions were changed from: (1) 'In the following table you will find a set of difficulties and problems which *possibly* describe you' to '… which *may* describe you', and (2) 'Please *work* through the questionnaire … and circle the appropriate answer' to 'Please *read* through the questionnaire … and circle the appropriate answer'. In addition, the Likert scale labels for 2 = rather, 3 = much, and 4 = very strong were changed to 2 = somewhat, 3 = a lot, and 4 = very much.

Structured Interview for DSM-IV Personality. The SIDP-IV [7] is a semi-structured interview that assesses each of the 10 DSM-IV personality disorders including BPD [25]. The BPD questions were administered to participants in the present study. Each BPD criterion is rated on a scale from 0–3, where 0 = criterion is not at all present, 1 = subthreshold criterion/some evidence of the trait, 2 = criterion has been present for most of the last 5 years, and 3 = strongly present – criterion is associated with subjective distress. Dimensional BPD scores are obtained by summing the 0–3 scores for each criterion. A BPD criterion is considered present if rated as a 2 or 3. Reliability and validity of the SIDP-IV have been verified in both non-treatment-seeking and patient populations [26, 27]. The principal investigator and 2 trained masters-level graduate students administered the interviews.

Depression Anxiety Stress Scales. The DASS-21 [28], a shortened version of the original 42-item measure [29], includes 7-item scales measuring both depression and anxiety. Participants indicate how much each statement applied to them over the past week on a 4-point Likert scale from 0 (did not apply to me at all) to 4 (applied to me very much, or most of the time). The DASS-21 has demonstrated excellent internal consistency (mean $\alpha = 0.90$), as well as good to excellent concurrent validity with other measures of depression and anxiety [30]. In addition, the DASS has been shown to better distinguish features of depression and anxiety than other existing measures (e.g. Beck Depression and Anxiety Inventories) [29]. Further research has illustrated the construct validity of the DASS-21 in both clinical and nonclinical samples [28, 30].

Results

Table 1 displays the means and standard deviations for all clinical measures: the BSL, SIDP-IV BPD, and DASS-21. The DASS-21 depression and anxiety scales ($\alpha = 0.92$ and 0.85), BSL ($\alpha = 0.98$), and SIDP-IV BPD ($\alpha = 0.88$) each demonstrated excellent internal consistency. In addition, all BSL subscales exhibited excellent internal consistency (α ranged from 0.74 for the BSL intrusions subscale to 0.94 for the BSL loneliness subscale). Of the 32 participants who screened positive for BPD on the MSI-BPD, 10 met full criteria for BPD on the SIDP-IV. As expected, the BSL exhibited substantial convergence with its shortened version, the BSL-23 ($r = 0.98$, $p < 0.001$), and a large association with the MSI-BPD ($r = 0.64$, $p < 0.001$).

We first examined the relationship of the BSL score to the dimensional SIDP-IV BPD score. There was a robust correlation between the BSL and SIDP-IV BPD ($r = 0.69$; the BSL-23 exhibited a similar correlation with the SIDP-IV, $r = 0.72$). In addition, all BSL subscales were significantly correlated with the SIDP-IV BPD (r values ranged from 0.52 to 0.70; table 2). Next, individuals meeting full criteria for BPD (n = 10) on the SIDP-IV (i.e. 5 or more criteria rated 2 or 3) were compared to those who did not have a BPD diagnosis (n = 49). BPD participants generated substantially higher scores on the BSL compared to non-BPD participants. Significant differences were found on the full scale [$t(57) = -3.91$, $p < 0.001$, $d = 1.38$], and on all subscales of the BSL: self-perception [$t(57) = -3.46$, $p < 0.005$, $d = 1.22$], affect regulation [$t(57) = -3.57$, $p < 0.005$, $d = 1.26$], self-destruction [$t(57) = -4.11$, $p < 0.001$, $d = 1.45$], dysphoria [$t(57) = -3.41$, $p < 0.005$, $d = 1.20$], loneliness [$t(57) = -3.32$, $p < 0.005$, $d = 1.17$], hostility

Table 1. Clinical measures for the total sample and sub-samples not/meeting full criteria for BPD on the SIDP-IV

Variable	Total sample (n = 59)	BPD (n = 10)	Non-BPD (n = 49)
DASS (depression)	4.47 ± 5.17	8.70 ± 5.64	3.61 ± 4.68
DASS (anxiety)	3.46 ± 4.00	6.50 ± 4.90	2.84 ± 3.53
Full BSL	0.73 ± 0.64	1.37 ± 0.72	0.60 ± 0.54
SIDP-IV BPD criteria	2.12 ± 2.28	6.0 ± 1.33	1.33 ± 1.48
SIDP-IV BPD dimensional	6.19 ± 5.59	15.20 ± 2.57	4.35 ± 4.02

Data presented as means ± SD.

Table 2. Correlations between the BSL subscales and ratings for each SIDP-IV BPD criterion

SIDP-IV BPD criteria	BSL scales							
	Full BSL	Self-perception	Affect regulation	Self-destruction	Dysphoria	Loneliness	Hostility	Intrusions
Sum of ratings for all criteria	0.69	0.62	0.70	0.60	0.52	0.67	0.69	0.54
Efforts to avoid abandonment	0.18	0.12	0.22	0.10	0.20	0.12	0.13	0.15
Unstable interpersonal relationships	0.48	0.39	0.52	0.35	0.36	0.47	0.60	0.34
Identity disturbance	0.56	0.52	0.51	0.51	0.48	0.54	0.51	0.33
Impulsive behaviors	0.45	0.38	0.48	0.41	0.27	0.48	0.38	0.38
Suicidal/self-harm behaviors	0.64	0.56	0.67	0.62	0.43	0.59	0.59	0.60
Affective instability	0.72	0.67	0.69	0.64	0.51	0.72	0.66	0.54
Emptiness	0.51	0.51	0.48	0.49	0.31	0.49	0.51	0.42
Inappropriate anger	0.52	0.46	0.50	0.43	0.46	0.52	0.60	0.38
Dissociation/paranoia	0.31	0.30	0.35	0.23	0.25	0.26	0.35	0.25

Correlations above 0.26, 0.34, and 0.46 are statistically significant at α levels of 0.05, 0.01, and 0.001, respectively.

[t(57) = –3.20, $p < 0.005$, d = 1.13], and intrusions [t(57) = –2.47, $p < 0.05$, d = 0.87].

After demonstrating a large relationship between the BSL and SIDP-IV BPD, we examined whether the BSL accounted for unique variance in SIDP-IV BPD scores over and above measures of depression and anxiety. We simultaneously entered BSL scores, DASS depression scores, and DASS anxiety scores as predictors of the SIDP-IV BPD dimensional score in a linear regression. The overall R^2 was 0.49 [$F(3, 58) = 17.75$, $p < 0.001$]; the standardized regression coefficients (β) were –0.10 for DASS depression, 0.18 for DASS anxiety, and 0.64 for BSL. Only the BSL (t = 2.54, p = 0.01), and not DASS depression (t = –0.41, p = 0.69) or anxiety (t = 1.10, p = 0.28), accounted for unique variance in SIDP-IV BPD scores; the BSL by itself accounted for 48.1% of the variance in SIDP-IV BPD scores. Finally, we examined correlations of BSL subscales to individual SIDP-IV BPD criteria (table 2). In general, the BSL total and subscale scores correlated positively with all BPD criteria except 'frantic efforts to avoid abandonment'. The BSL total and subscales scores correlated most highly with the 'affective instability' and 'suicide/self-harm' criteria.

Discussion

The BSL is one of the newest self-report instruments used to assess BPD symptomatology. The BSL is designed to assess the wide range of complaints and experiences commonly reported by patients with BPD. While initial results suggested the BSL has good psychometric properties [21], research had not examined the relationship of the BSL to semi-structured interview diagnoses of BPD.

Findings from this study indicate that the BSL is strongly associated with the presence of DSM-IV BPD symptoms as assessed by a valid semi-structured interview (i.e. the SIDP-IV). Participants meeting full criteria for BPD on the SIDP-IV generated substantially higher scores on the BSL. In addition, the BSL total and subscale scores exhibited robust correlations with the dimensional SIDP-IV BPD score. Finally, the BSL predicted SIDP-IV BPD scores over and above measures of depression and anxiety. This pattern of results supports the BSL as a valid and clinically useful measure of BPD symptomatology. The BSL could be useful in clinical settings to quickly assess a range of clinically relevant experiences and symptoms often reported by BPD patients. Given the BSL's validity and broad coverage, the measure is well-suited to purposes of clinical assessment as well as tracking change in treatment outcome studies. Results also support the validity of the shortened version of the BSL, the BSL-23, for assessing DSM-IV BPD symptoms.

Interestingly, the BSL affect-regulation and hostility subscales demonstrated the largest correlations with the SIDP-IV BPD criteria, suggesting that these subscales best capture the aspects of BPD emphasized in the DSM-IV. In general, the BSL full scale and subscales correlated positively with each of the DSM-IV criteria. BSL scores related most strongly to the 'affective instability', 'suicidal/self-harm behaviors', and 'identity disturbance' criteria; the BSL items cover these domains well with items such as: 'I found myself in emotional chaos', 'I thought of hurting myself', and 'I experienced parts of my body dissolving'. The only DSM-IV BPD criterion not related significantly to the BSL was 'frantic efforts to avoid abandonment', probably because the BSL does not include enough relevant items to adequately assess this symptom. In fact, it could perhaps be a weakness of the BSL that this particular BPD symptom is not sufficiently addressed. The specific areas of convergence and divergence between the BSL and DSM-IV BPD criteria warrant further study.

This study has several limitations and future research is needed. One limitation of the current study is the nature of the sample, which was drawn from a college population, and thus only had a small number of participants who met full criteria for BPD. Future research should replicate findings in other samples including those drawn from clinical populations, where there is a higher prevalence of BPD. Additionally, future studies using large samples should determine cutoff scores on the BSL that maximize sensitivity and specificity in identifying individuals with BPD. A second limitation is that this study did not assess personality disorders other than BPD. Future studies should verify that the BSL relates less to other personality disorders than to BPD, and thus confirm the BSL's discriminant validity. In addition, this study did not assess interrater reliability for the SIDP-IV, which would be important to add in future research. Lastly, it would be useful to compare the relationships of the BSL and other self-report measures of BPD to semi-structured interviews for DSM-IV BPD to determine which measures best assess different aspects of BPD.

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