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Borderline Personality Disorder Features in Nonclinical Young Adults: 2. Two-Year Outcome

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Abstract

Borderline personality disorder (BPD) is thought to develop by early adulthood, and it is characterized by lack of control of anger, intense and frequent mood changes, impulsive acts, disturbed interpersonal relationships, and life-threatening behaviors. We describe data from a 2-year follow-up study of nonclinical young adults who, at study entry, exhibited a significant number of BPD features. Individuals with borderline features were more likely to have academic difficulties over the succeeding 2 years, and these participants were more likely to meet lifetime criteria for a mood disorder and to experience interpersonal dysfunction than their peers at the 2-year follow-up assessment. These findings indicate that BPD features are associated with poorer outcome even within a nonclinical population.

Over the last 15 years, the interest in studying borderline personality disorder (BPD) has grown tremendously. The increase in the number of studies focusing on BPD can be traced back to the introduction of this diagnosis into the American diagnostic nomenclature in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–III;* American Psychiatric Association, 1980). BPD is now the most frequently diagnosed personality disorder in clinical settings, and more research is conducted on BPD than on any other personality disorder (Blashfield & McElroy, 1987; Widiger & Trull, 1993).

By far, the majority of studies on BPD have involved clinical samples. These studies have provided useful information regarding the treatment outcome and course of BPD (e.g., Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Heard, & Armstrong, 1993; Stone, 1990). A relatively neglected area of research, however, has been the assessment of the prevalence, nature, and outcome of BPD features in nonclinical (i.e., not currently seeking psychological services) young adults. It is important to conduct these studies of nonclinical young adults for several reasons. First, BPD appears to be relatively prevalent in nonclinical populations (Gunderson & Zanarini, 1987; Zimmerman & Coryell,.1989). Second, clinical participants diagnosed with BPD may be unrepresentative because the most severe or dysfunctional cases (those that have the most frequent or lengthy treatments) are those that are most likely to be sampled in clinical studies (Cohen & Cohen, 1984). Third, evidence suggests that nonclinical young adults with BPD features present a level of dysfunction across a number of spheres of functioning that is severe enough to warrant further study (Trull, 1995).

Trull (1995) reported two studies that involved the development of a psychometric strategy for identifying nonclinical young adults who exhibit significant BPD features. The implementation of this strategy results in the classification of young adults into B+

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(borderline features positive) and B− (borderline features negative) groups. B+ individuals are either subsyndromal (i.e., they do not meet five or more *DSM–IV* [*Diagnostic and Statistical Manual of Mental Disorders,* 4th ed.; American Psychiatric Association, 1994] BPD criteria) or they exhibit enough BPD features to warrant a diagnosis; the base rate of a BPD diagnosis among B+ individuals is estimated to be approximately 13% (Trull, 1995).

As reported by Trull (1995), the *Personality Assessment Inventory–Borderline Features Scale* (PAI-BOR; Morey, 1991) was administered to large groups of college undergraduates, and random samples of above-threshold (PAI-BOR score of 38 or more and at least 2 *SD*s above the mean score of a community sample; Morey, 1991) and below-threshold participants were brought into the laboratory for more extensive assessment. First, to ensure that PAI-BOR scores were not primarily a function of state-like conditions, the PAI-BOR was readministered to all those participating in the laboratory phase of these studies. Participants were categorized into B+ and B− groups if their scores were above or below threshold, respectively, at both screening and at retest. Second, these laboratory participants completed a number of inventories and interviews that assessed a range of features believed to be related to BPD in clinical samples: depression, personality traits, coping, Axis I disorders, and interpersonal problems. A number of comparisons were made between B+ and B− participants, and, in general, results supported the concurrent validity of this classification. Specifically, B+ participants in Trull's (1995) Study I were shown to exhibit higher levels of negative affectivity, depression, maladaptive personality traits, general psychopathology symptoms, and BPD symptoms. B+ participants in Trull's Study 2 endorsed more interpersonal problems, and they received more anxiety and mood disorder diagnoses than their B− counterparts. Across both studies, the absolute level of dysfunction exhibited in most of these domains approached that of study participants from clinical settings.

These initial studies (Trull, 1995) mark an important first step in identifying young adults with significant levels of borderline features who may go on to experience significant dysfunction in later years. Similar psychometric strategies have been developed for identifying and prospectively following individuals who appear likely, at a later point in time, to reach syndromal levels for particular mental disorders (Chapman & Chapman, 1985; Chapman, Chapman, Kwapil, Eckblad, & Zinser, 1994: Depue et al., 1981).

In this article, we report the results of a 2-year follow-up of participants in Trull's (1995) Study 1. Specifically, we focused on the 2-year outcome of both B+ and B− individuals. We predicted that B+ participants from the original study would, in general, exhibit more dysfunction and, therefore, a more negative outcome than their B− peers over the succeeding 2 years. We examined academic performance (given that all participants were college undergraduates at the initial assessment), including grade point average (GPA), semesters on academic probation, and being ineligible to re-enroll for academic reasons. An increasing number of studies are focusing on educational performance or attainment as an indicator of outcome because educational success is related to occupational achievement as well as to health and well-being (Kessler, Foster, Saunders, & Stang, 1995). In addition to academic outcome, lifetime Axis I disorders were assessed at follow-up, as was the degree of interpersonal dysfunction and distress.

Specific predictions were as follows, (a) B+ adults will experience more academic problems over the 2-year follow-up period as exhibited by lower GPA, more semesters on academic probation, and a higher likelihood of being refused readmission to the university because of academic problems. These patterns will hold even after controlling for gender and American College Test (ACT) scores (our estimate of academic potential), (b) B+ adults will be more likely to meet criteria for a lifetime anxiety disorder and a lifetime mood disorder at follow-

up. Because of the relatively high prevalence rate of substance abuse or dependence in the general population of college students (e.g., Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994), we did not expect that B+ young adults would exhibit significantly higher rates of lifetime substance use disorder at follow-up. (c) B+ status will predict a significant amount of the variance in negative academic outcome (i.e., lower GPA, semesters on probation, being ineligible to enroll) above and beyond that accounted for by gender, ACT scores, and lifetime anxiety, substance use, or mood disorder diagnosis, (d) B+ classification will predict a significant amount of the variance in follow-up interpersonal problems or distress scores above and beyond that accounted for by gender or any lifetime mental disorder diagnosis.

Method

A full description of the methods of the first wave of data collection and the selection of the original cohort appears in Trull (1995). Briefly, a two-stage screening process was used in a sample of approximately 1,700 college students to identify participants who scored above threshold (≥70 *T* or raw score ≥ 38) on the PAI-BOR (suggesting the presence of significant BPD features; B+ participants) and those who scored below threshold on the PAI-BOR (suggesting a relative absence of BPD features; B− participants). Initially, the screening sample was categorized into above-threshold and below-threshold groups. From these groups, potential participants were randomly selected and contacted about the study. Attempts were made to sample from the above-threshold group at an approximately 2:1 ratio because regression toward the mean of scores was expected at retest. Further, it was expected that this sampling strategy would result in an approximately equal number of B+ (above threshold at screening and laboratory session) and B− (below threshold on both testings) participants.

PAI-BOR items tap features of severe personality pathology that are characteristic of BPD and associated personality disorders (Morey, 1991). The PAI-BOR consists of 24 items that are rated on a 4-point scale, and possible total scores range from 0 to 72, This scale was developed using a construct validation strategy in which final item selection was guided by both the conceptual nature of the items as well as the items' psychometric properties. The PAI-BOR items tap four empirically derived factors or dimensions that underlie borderline phenomenology (Grinker, Werble, & Drye, 1968; Morey, 1988); affective instability, identity problems, negative relationships, and self-harm. It is important to note that these four factors overlap substantially with those identified as associated with the diagnosis of BPD by Morey's (1988) factor analysis of *DSM–III* and *DSM–III-R* (third revised ed., *Diagnostic and Statistical Manual of Mental Disorders*. American Psychiatric Association, 1994) personality disorder criteria. Studies on the psychometric properties of the PAI-BOR demonstrate that it has good internal consistency (α = .84, average interitem correlation = .18; Trull, 1995), high test–retest reliability over a 3- to 4-week time period (r = .86; Morey, 1991), and good convergent and discriminant validity in relation to clinical diagnoses and scores from measures of psychopathology symptoms and personality traits (Morey, 1991; Trull, 1995).

In the initial wave of the study, 54 B+ and 49 B− young adults participated in the laboratory assessment. The mean PAI-BOR score at study entry for the B+ and B− participants was 46.39 (SD = 6.84) and 23.98 (SD = 8.10), respectively. As expected, B+ participants exhibited significantly more features of *DSM– III–R* BPD (as assessed by a semistructured interview) at study entry *(*M = 2.85 vs. M = 0.59), and each *DSM–III–R* BPD criterion was more prevalent in the B+ sample (Trull, 1995). Trull also demonstrated the validity of this classification (B+ vs. B−) by examining the clinical correlates of this classification across a

number of domains relevant to BPD in clinical samples (e.g., depression, personality traits, coping, psychopathological distress, interpersonal distress).

Approximately 2 years later, attempts were made to reassess all B+ and B− participants who had given their consent to be contacted about participating in a follow-up study ($n = 88$). All the participants had been asked to provide their local addresses and phone numbers as well as those of their parents, a close friend, or closest relative. Two graduate research assistants who were unaware of participants' group status (B+ or B–) attempted to contact all potential participants over a 6-month period. Attempts were first made to contact the participants at the addresses they provided 2 years previously. Local phone books as well as assistance provided to our research team by the university registrar's office at the University of Missouri—Columbia aided in contacting the majority of those who consented to be recontacted at the 2-year follow-up. When contacted, these individuals were reminded of their participation in the first wave of the study that occurred 2 years previously, were given a brief description of the current study, and were then offered $50 to participate in a 4-hr assessment session. For those who were interested in participating, reminder letters were sent to their homes with the date, time, and place where the study was to be conducted.

In those cases where phone contact was not made (following 10 or more attempts), letters were sent to potential participants' local addresses. These letters contained the same information that was provided over the phone. In those cases in which no local address or phone number was obtained or there was no response to our attempts to contact the participant, letters were sent or phone calls were made to the parents or significant others that the participants provided at study entry. In these cases, we asked each parent or significant other for assistance in providing a means for contacting the participants.

At 2-year follow-up, of the 88 participants who at study entry consented to be recontacted, we were unable to locate 14, 2 refused to participate, and 6 were unable to arrange an appointment (due to scheduling conflicts or geographical distance from the site of the study). Finally, I participant's results were discarded because of the random nature of the participant's responses to the battery of assessment instruments.

Therefore, a total of 35 B+ (65%) and 30 B− individuals (61%) participated in the 2-year follow-up. Participants in the 2-year follow-up assessment did not differ significantly from attriters on initial laboratory session PAI-BOR scores, the number of *DSM–III–R* BPD criteria present, Brief Symptom Inventory–Global Severity Index (Derogatis, 1992) scores, Beck Depression Inventory (Beck, 1978) scores, NEO-Personality Inventory (NEO-PI; Costa & McCrae, 1985) domain scores, or the Positive and Negative Affect Schedule-Expanded Form (‘In general’ instructions; Watson & Clark, 1994) scores at study entry. Parallel analyses were also conducted within both the B+ and B– groups, separately. Results indicated that there were no significant differences between attriters and follow-up participants in the B+ group on any variables examined, whereas B− follow-up participants scored lower than B− attriters on NEO-PI extraversion, $t(46) = 2.68$, $p < .05$. Overall, these analyses suggest that participants in the 2-year follow-up were representative of participants at study entry.

The mean age of the participants at the time of the follow-up assessment was 21.02 years ($SD = 1.10$), and 52% of the follow-up sample was female. At the 2-year follow-up assessment, all participants completed a battery of self-report inventories and structured interviews that required approximately 4 hr of participation. We randomized the order of administration for the follow-up study's measures to control for possible order effects.

Academic Outcome

Each participant in the follow-up study gave us permission to access their complete academic records from the university registrar's office. This information included an up-to-date transcript, standardized test scores (e.g., ACT scores), and documentation regarding academic probation and expulsion. From this information, we calculated three academic outcome indices: (a) GPA over the follow-up period, (b) number of semesters on academic probation, and (c) whether or not the participant had been refused re-enrollment in the university for academic reasons (0 = *no,* 1 = *yes)* over the follow-up period.

Self-Report Measures

All participants completed a number of self-report inventories. Of primary relevance to this article was the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). The IIP items describe interpersonal problems that people experience in the general areas of sociability, assertiveness, responsibility, intimacy, control, and submissiveness. Each item is rated on a 0 to 4 scale (0 = *not at all;* 4 = *extremely)* as to how distressing the problem has been. The IIP has been shown to possess excellent psychometric properties, and the mean score across all 127 IIP items (i.e., total IIP score) is used as an estimate of the overall level of interpersonal problems and distress (Horowitz et al., 1988). Horowitz et al. reported that test–retest reliability for total IIP scores was $r = .98$ over a 10-week time interval, and IIP scores appeared sensitive to clinical changes as a result of treatment. In the present study, the internal consistency of the total IIP score was $\alpha = .98$ (average interitem correlation = .28).

Axis I Diagnoses

Lifetime *DSM–III–R* (American Psychiatric Association, 1987) Axis I diagnoses for each participant were assessed by the Computerized Diagnostic Interview Schedule–Revised (CDIS-R; Blouin, 1991). Because of the relatively low base rates for most individual *DSM–III–R* diagnoses, three higher order lifetime Axis I diagnostic categories were examined: (a) any anxiety disorder (panic, panic with agoraphobia, generalized anxiety, agoraphobia, social phobia, simple or specific phobia, or posttraumatic stress disorders), (b) any substance use disorder (alcohol or drug abuse or dependence), and (c) any mood disorder (major depression, bipolar, hypomanic, dysthymia, or cyclothymia disorder) . Each of these three higher-order diagnostic categories was rated as *present* (1) or *absent* (0). The CDIS-R was administered by a DOS-based personal computer. Previous studies have demonstrated comparable reliabilities for computer- and interviewer-administered versions of the DIS (Diagnostic Interview Schedule. Blouin, Perez, & Blouin, 1988; Griest et al., 1987) and have indicated that participants find the computer administration of this instrument easy to use (Blouin et al., 1988; Griest et al., 1987; Mathisen, Evans, & Meyers, 1987). Although the CDIS-R is not the standard for establishing *DSM* diagnoses, it was used in the present study because it can be completed quickly and does not require an additional interviewer who is unaware of all other data for each participant. As a result of a computer malfunction, 1 participant did not complete the anxiety disorders section of the CDIS-R.

Results

Table 1 presents a breakdown of scores on all measures by PAI-BOR classification. As can be seen, B+ participants had lower cumulative GPAs in the follow-up period than their B− peers. Furthermore, a higher percentage of B+ participants were deemed ineligible to enroll at some point in the follow-up period. Regarding Axis I psychopathology, a significantly greater percentage of B+ participants met lifetime *DSM–III–R* criteria for a mood disorder or a lifetime diagnosis of any DIS disorder at follow-up. In addition, in contrast to B+ participants, relatively little Axis I comorbidity was observed among B− participants.

Finally, B+ participants produced significantly higher scores (indicating more dysfunction) on the IIP at follow-up.

We first examined the ability of PAI-BOR classification at study entry to predict academic outcome over the 2-year follow-up period. Table 2 presents results from three hierarchical regression analyses aimed at determining whether PAI-BOR classification (B+ vs. B−) accounted for a significant amount of the variance in academic outcome over and above that accounted for by gender and ACT scores. Because the criterion "ineligible to enroll" was categorical, we used a hierarchical logistic regression analysis. Of interest is the significance of the last step of each regression model (i.e., when PAI-BOR classification is entered into the model). As can be seen, B+ or B− classification accounted for a significant amount of the variance in cumulative GPA since the time of study entry, $\Delta R^2 = .11$, F change (1, 52) = 7.49; $p < .01$, and a significant amount of the variance in ineligible to enroll, 0 = *no*, 1 = *yes*; χ^2 (1, $N = 59$) improvement = 8.85, $p < .01$, beyond what was accounted for by gender and ACT scores. However, PAI-BOR classification did not account for a significant amount of variance in the number of semesters on probation for academic reasons.

An additional index of outcome was a lifetime diagnosis of a mental disorder. As noted above, we assessed the presence or absence of any lifetime anxiety disorder, any lifetime substance use disorder, and any lifetime mood disorder at the 2-year follow-up assessment. Table 3 presents the hierarchical logistic regressions assessing the ability of B+ or B− classification to predict these three higher-order diagnoses above and beyond what could be accounted for by gender. PAI classification significantly predicted lifetime mood disorder, χ^2(1, $N = 65$) improvement = 12.62, $p < .001$, but not lifetime anxiety disorder, χ^2(1, $N = 64$) improvement = 0.76, *ns,* or lifetime substance use disorder, χ^2(1, $N = 65$) improvement = 3.06, *ns*.

Because it was conceivable that poorer academic outcome was at least partially the result of having an Axis I disorder (e.g., alcohol use disorder; Wechsler et al., 1994), we repeated the hierarchical regressions outlined in Table 2 that yielded significant results for PAI classification with the exception that the diagnostic variables of any lifetime anxiety, any lifetime substance use, and any lifetime mood disorder were controlled for by entering these variables into the model before PAI classification.

PAI classification predicted cumulative GPA, $\Delta R^2 = .11$, F(1, 50) change = 7.00, $p < .05$, and eligibility for re-enrollment, χ^2(1, $N = 58$) improvement = 9.29, $p < .01$, after controlling for gender, ACT scores, and any lifetime anxiety disorder. Similarly, B+ or B− status predicted cumulative GPA, $\Delta R^2 = .07$, F(l, 51) change = 4.84, $p < .05$, and eligibility for re-enrollment, χ^2(1, $N = 59$) improvement = 7.36, $p < .01$, after controlling for gender, ACT scores, and any lifetime substance use disorder. Finally, this same pattern held in the prediction of cumulative GPA, $\Delta R^2 = .07$, F(1, 51) change = 4.84, $p < .05$, and eligibility for re-enrollment, χ^2(1, $N = 59$) improvement = 5.36, $p < .05$, after controlling for gender, ACT scores, and any lifetime mood disorder.

Personality disorder in general, and BPD in particular, involves interpersonal dysfunction and conflict. Therefore, it is of interest to consider outcome in the interpersonal as well as the academic sphere. We assessed the ability of PAI classification to predict scores reflecting interpersonal dysfunction or distress 2 years later. In order to control for the effects of gender and Lifetime Axis I disorders on the criterion measures (i.e., IIP scores), these two variables were entered in the first two steps of a hierarchical regression analysis. We created a variable of any DIS Lifetime Diagnosis (0 = *absent;* 1 = *present)* to use as a control variable representing Axis I psychopathology. This variable was rated as present if the participant met diagnostic criteria for any of the anxiety, substance use, or mood

disorders listed in the Method section. Results indicated that PAI classification provided a significant increment in model fit, above and beyond gender and any DIS lifetime diagnosis, in predicting mean IIP item scores, $\Delta R^2 = .11$, $F(1, 60)$ change = 7.98, $p < .01$.

Discussion

Results from this 2-year follow-up study indicate that young adults who endorse features characteristic of BPD exhibit a poorer outcome across a range of variables than their peers who do not endorse these BPD characteristics. Further, these results document the enduring nature of the dysfunction associated with BPD features and suggest that these problems are not simply a function of comorbid Axis I disorders.

In general, these results are consistent with expectations based on follow-up studies of BPD patients and the clinical literature on BPD. Longitudinal studies of BPD patients indicate that they experience a relatively negative outcome with regard to completed suicide, Axis I disorders over the follow-up period, and levels of psychosocial functioning (Perry, 1993). Focusing first on Axis I disorders, BPD patients frequently experience episodes of mood disorders and often receive comorbid diagnoses of substance use disorders (American Psychiatric Association, 1994). Our results are consistent with these observations despite the fact that only a small percentage (13%) of B+ participants received a *DSM–III–R* (American Psychiatric Association, 1987) BPD diagnosis at study entry (Trull, 1995). At 2-year follow-up, a relatively high percentage of B+ participants received a lifetime substance use (37%) or lifetime mood disorder (37%) diagnosis. Although the prevalence rate for lifetime anxiety disorder diagnosis was higher among B+ participants, the strength of the association between PAI-BOR classification and this diagnostic category was less than that seen for the former two diagnostic categories. Even though we did not predict this finding at the outset of the study, the relatively small body of empirical literature on the relationship between BPD and anxiety disorders suggests a weaker link than that seen for mood or substance use disorders (Stein, Hollander, & Skodol, 1993).

As predicted, the prevalence of substance use disorders was substantial among both B+ and B− young adults. The difference between rates approached statistical significance, as did the relationship between PAI classification and the presence of any lifetime substance use disorder after controlling for gender. Because lifetime substance use disorders were assessed rather than only those that occurred over the 2-year follow-up period (and because we did not assess the Axis I diagnoses of this particular cohort at study entry), it is not possible to determine the direction of influence. That is, we could not assess whether B+ status was associated with the onset of these disorders in the follow-up period. However, it is important to note that the degree of association is not a function of item overlap. That is, the PAI-BOR scale, although it assesses impulsivity and self-destructive behaviors, does not contain items that specifically target substance use behaviors.

In addition to Axis I pathology, we examined a number of psychosocial outcome indices. Because our study participants were college students at study entry, we collected data related to academic performance, an important area of functioning for individuals whose primary role is that of a student. Assessing academic outcome in our study was advantageous for two reasons. First, many of the participants in our study did not work or worked for a limited number of hours per week. Therefore, we would have been able to assess the occupational functioning of only a small subset of our sample. In contrast, we were able to access academic outcome information for the majority of study participants. Second, the academic outcome indices we used did not rely on the self-report of the participants. Rather, these data were based on permanent records and, thus, were more objective in nature.

Although, to our knowledge, no longitudinal study of BPD patients has reported on the educational performance of participants, several studies have assessed BPD patients' occupational functioning (Perry, 1993). In general, the level of occupational functioning for BPD patients has been reported to be somewhat marginal but better than that for patients with psychotic disorders. The majority of BPD patients in these studies were employed full time at follow-up, but often in lower-level jobs (Perry, 1993). Direct comparisons between these studies and the present study are not possible because of the differences in outcome measures used, as well as variations in the follow-up time period. However, we would expect that the relatively poorer academic performance observed for our B+ participants may ultimately lead to limitations in occupational status and performance later in adulthood.

As for interpersonal functioning, B+ participants were found to endorse higher levels of interpersonal problems or distress than their B− peers. Again, this pattern held even after controlling for gender and Axis I disorder. Millon and Davis (1996) have commented on the paradoxical interpersonal conduct of BPD patients. On the one hand, BPD patients have excessive dependency needs that make them quite vulnerable to interpersonal loss or separation. Their devotion to self-sacrifice (in order to avoid abandonment) has a martyr-like quality. At the same time, however, BPD patients employ tactics of manipulation and threat in order to cope with the prospect of real or imagined abandonment. Thus, their interpersonal style often leads to rejection rather than support, and interpersonal relationships are desperately needed yet quite threatening to the BPD patient. Because of the pervasiveness and intensity of this interpersonal ambivalence across a number of spheres, individuals with borderline features would be expected to present with a broad range of interpersonal dysfunction and distress.

A unique aspect of this study was the inclusion of men in the B+ and B− groups such that the relationship between BPD features and outcomes could be evaluated while controlling for gender. Most studies examining BPD diagnoses or features predominantly focus on women participants. Given the clinical impression and existing clinical research suggesting that about 75% of those who are assigned a BPD diagnosis are women, this is not too surprising. However, several investigators have reported that nonclinical men endorse borderline features at rates comparable to or even exceeding those of nonclinical women (Henry & Cohen, 1983; Trull, 1995). It is not clear as to why nonclinical men, on average, exhibit more BPD features yet women are more likely to be represented in a BPD clinical sample. One intriguing possibility is that clinicians view BPD features as more congruent with male sex roles (or less congruent with female sex roles), increasing the probability that a woman who exhibits the same symptoms as a man will be assigned a BPD diagnosis (Henry & Cohen, 1983). Sprock (1996) recently presented data partially supporting this theory of “underdiagnosis” of BPD symptoms in men. In this study, undergraduates were asked to rate the degree of abnormality of each *DSM–III–R* personality disorder criterion under three instruction conditions: if exhibited by a man, if exhibited by a woman, or without gender specified (to provide baseline abnormality ratings). Each judge provided ratings under only one instruction condition. Results indicated that the mean ratings of abnormality were significantly lower for the BPD criteria of inappropriate, intense anger and recurrent suicidal threats in the male instruction condition versus the female or gender-unspecified instruction condition. These results should be considered preliminary and in need of replication by using clinician raters; however, they suggest the possibility of an ascertainment bias (Widiger & Spitzer, 1991).

The B+ sample in our study performed more poorly on nearly every measure of outcome. Why might this be? One possibility is that the PAI-BOR scale is simply a measure of nonspecific psychopathological distress and, therefore, is likely to be related to a wide range of negative outcome. Although this is a potentially straightforward explanation, several

findings do not support this interpretation. First, Morey (1991) reported that only a BPD patient group obtained a mean PAI-BOR score above clinical threshold (raw score ≥ 38), and other diagnostic groups (e.g., major depression, dysthymia, anxiety-related disorders, schizophrenia, schizoaffective disorder, mania, antisocial personality disorder, alcohol abuse or dependence, drug abuse) did not. If the PAI-BOR scale simply measured nonspecific distress, then clinical elevations would likely be obtained by members of several of these diagnostic groups. Second, factor analyses of the clinical scales of the PAI indicate that, in addition to a first factor characterized by marked subjective distress and affective disruption, the PAI-BOR scale is substantially related to two other PAI factors: (a) behavioral acting out, impulsivity, and poor judgment, and (b) egocentricity and exploitativeness in interpersonal relationships. Third, Trull (1995) reported that B+ or B− group differences on measures of depression, personality traits, coping, interpersonal distress, and Axis I psychopathology held even after controlling for both gender and trait negative affect. Similarly, in the present study we found that PAI-BOR and 2-year outcome relations remained even after controlling for Axis I pathology. If the PAI-BOR simply tapped generalized distress, then it seems unlikely that these results would have been obtained.

What then might be unique about the borderline construct that can account for these results? This question cannot be answered definitively with the data we have presented, but we offer several conjectures. BPD is characterized by problematic mood patterns (e.g., excessive and uncontrollable anger, affective lability), impulsivity (including self-destructive behavior), and identity issues that are likely to lead to a high degree and wide range of dysfunction—ranging from academic and occupational difficulties to disturbed interpersonal relationships. BPD features tend to be more chronic and pervasive than Axis I symptoms. Because of this, these features are more likely to influence interpersonal relationships and one's ability to meet role obligations as an employee, student, parent, friend, or significant other. Although some patients with psychotic disorders (e.g., chronic schizophrenia) present with even lower overall levels of functioning than do BPD patients, it may be the nature of the dysfunction that distinguishes BPD patients from those with chronic psychotic disorders. Specifically, we propose that domains of functioning that are heavily saturated with interpersonal components will be most discriminating in these cases. Patients with chronic psychotic disorders may demonstrate interpersonal deficits (e.g., impaired social skills), but patients with BPD are characterized by interpersonal conflict and distress often brought on by fears of rejection or abandonment. One limitation of the present study (due to the nature of the population sampled) was the failure to include participants who suffer from a range of psychotic symptomatology. This would have allowed for analyses that evaluated whether BPD features were significantly related to various outcome indices after controlling for psychotic symptoms. Clearly, more research is necessary to identify those forms of dysfunction that may be unique to BPD.

Several additional limitations of our study should be acknowledged. First, the number of participants in the follow-up assessment was modest; however, it is noteworthy that a number of significant results were obtained despite the limitations on statistical power. Second, participants were college students at study entry, and similar studies should be undertaken with community-based samples of young adults. Third, no control group with significant features of other, nonBPD personality disorders was available. This design would have allowed for additional analyses aimed at determining whether the findings were specific to individuals with BPD features as opposed to other personality disorder features. Fourth, because lifetime diagnoses were assessed (and only at follow-up), it was not possible to determine whether the onset of the Axis I disorders occurred prior to or during the follow-up period. Finally, future research might also examine other spheres of functioning (e.g., intimate relationships, occupational performance, etc.), as well as other potential moderators

of the PAI-BOR classification and outcome relationship (e.g., history of childhood sexual abuse).

In conclusion, young adults with BPD features were found to exhibit more dysfunction across a number of spheres over the succeeding 2 years than their peers. In general, these findings were consistent with theoretical and clinical expectations, and they indicate that BPD features are associated with more negative outcome even among nonclinical young adults. That BPD features can be identified even within a nonclinical population and that the variability is sufficient to be substantively predictive of a wide range of outcomes is consistent with a dimensional model of this important diagnostic construct. Finally, these findings also support the predictive validity of the PAI-BOR scale and suggest that this self-report measure of borderline features may be useful in future studies exploring the etiology and development of BPD.

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Table 1

Characteristics of B+ and B− Participants at 2-Year Follow-up

	B+		B−	
Variable	***M***	***SD***	***M***	***SD***
Age	20.97	1.07	21.07	1.14
Percent female	57		47	
ACT scores	24.66	4.30	26.33	4.36
Cumulative GPA over follow-up period**	2.34	0.77	2.91	0.62
Semesters on probation	1.17	1.15	0.63	1.19
Percent ineligible to enroll**	20		0	
Percent any lifetime anxiety disorder	24		13	
Percent any lifetime substance use disorder	37		20	
Percent any lifetime mood disorder***	37		3	
Percent any lifetime DIS disorder**	65		37	
Mean IIP item score**	0.94	0.56	0.56	0.31

Note. Total *N* varies from 59 to 65 for each variable; $n = 35$ for B+ (borderline features positive); $n = 30$ for B− (borderline features negative). ACT = American College Test; GPA = grade point average; DIS = Diagnostic Interview Schedule; IIP = Inventory of Interpersonal Problems.

** $p < .01$.

*** $p < .001$.

Table 2

Hierarchical Regressions Involving the Prediction of Academic Outcome From PAI-BOR Classification

	Criterion				
	Cumulative GPA		Semesters on probation		Ineligible to enroll
Step	ΔR^2	*F* change	ΔR^2	*F* change	χ^2 improvement
1. Gender	.00	0.26	.01	0.35	0.03
2. ACT scores	.13	7.85**	.06	3.54	0.83
3. PAI-BOR classification	.11	7.49**	.03	2.11	8.85**

Note. Data were missing for a small number of participants for each academic outcome variable. $N = 56$ for the analysis involving GPA; $N = 59$ for the other two analyses. PAI-BOR = Personality Assessment Inventory–Borderline Features Scale; GPA = grade point average: ACT = American College Test.

** $p < .01$.

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Table 3

Hierarchical Regressions Involving the Prediction of Lifetime DIS-III-R Diagnoses From PAI-BOR Classification

	Criterion		
Step	**Lifetime anxiety disorder**	**Lifetime substance use disorder**	**Lifetime mood disorder**
1. Gender	6.45*	2.59	0.17
2. PAI-BOR classification	0.76	3.06	12.62***

Note. Values are χ^2 improvements. $N = 64$ for the lifetime anxiety disorder analysis; $N = 65$ for the other two analyses. DIS–III–R = Diagnostic Interview Schedule, third ed., revised; PAI-BOR = Personality Assessment Inventory–Borderline Features Scale.

* $p < .05$.

*** $p < .001$.