DYSFUNCTIONAL BELIEFS AND PSYCHOPATHOLOGY IN BORDERLINE PERSONALITY DISORDER

Sunil S. Bhar, PhD, Gregory K. Brown, PhD, and Aaron T. Beck, MD

This study examined the factor structure of the Borderline Personality Disorder subscale of the Personality Beliefs Questionnaire (PBQ-BPD; Butler, Brown, Beck, & Grisham, 2002), and the relationships between the emergent factors and psychopathology. The sample comprised 184 patients diagnosed with borderline personality disorder (BPD). Exploratory factor analysis yielded three factors relating respectively to dependency, distrust, and the belief that one should act preemptively to avoid threat. Although the three factors were significantly associated with depression, only dependency and distrust significantly correlated with hopelessness. Distrust was the sole factor that correlated significantly with suicide ideation. These findings support the dimensional structure of the PBQ-BPD. Given its multidimensional structure, the scale can be used as a measure of belief profiles associated with BPD and as an aid to conceptualizing beliefs underlying a range of psychopathology associated with patients with BPD.

Borderline personality disorder (BPD) is a major health problem. The disorder is associated with considerable psychosocial impairment, a high degree of morbidity and a high burden on mental health resources. Patients with BPD constitute an estimated 15% to 20% of psychiatric inpatients (Gunderson & Zanarini, 1987), utilize greater amounts of mental health services than patients with other diagnoses such as depression (Bender et al., 2006) and commit suicide at a rate similar to patients with major depression and schizophrenia (10%; Black, Blum, Pfohl, & Hale, 2004; Zweig-Frank & Paris, 2002). Suicidal behavior is estimated to occur in up to 84% of patients with BPD (Black et al., 2004; Soloff, Lynch, & Kelly, 2002), with a mean of 3.4 lifetime attempts per patient (Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994).

Accordingly, various models of BPD have been developed in an effort to
improve effectiveness of treatment approaches for BPD (reviewed in Beck, Freeman, Davis, & Associates, 2004). From the perspective of cognitive theory, dysfunctional beliefs represent a central aspect of the phenomenology of BPD (Beck et al., 2004; Pretzer, 1990). These beliefs are said to influence how such individuals typically view themselves, others and the world, and thus to have an effect on the patient's interpersonal functioning, negative affect, self-harm, and suicidal behavior. A wide number of beliefs have been implicated as characteristic of BPD, such as the belief that one will always be alone, the belief that one cannot manage without the support of others, a distrust in other people, a poor sense of direction in life, and beliefs such as one is unlovable, bad, vulnerable, and lacking in personal discipline (Arntz, Dietzel, & Dreessen, 1999; Beck et al., 2004).

Beck and colleagues (Beck et al., 2004; Pretzer, 1990) have also hypothesized that the combination of paradoxical beliefs in BPD contributes to high levels of vigilance and instability in patients' mood and interpersonal behavior. The authors proposed that patients who feel helpless without the constant support of others, but who mistrust others would be prone to alternating between clinging to other people and pushing them away because of distrust. Anecdotal evidence has suggested that the presence of these contradictory beliefs place the patient in a "no win" situation where neither the desire for safety nor support is fulfilled. This unfulfillment results not only in unstable attachment patterns but can lead to a range of difficulties such as depression and hopelessness (Layden, Newman, Freeman, & Morse, 1993).

The identification of dysfunctional beliefs in BPD, particularly ones that function in an antagonistic relationship with each other therefore represents a critical step towards examining the cognitive underpinnings of the psychopathology in BPD. The Personality Beliefs Questionnaire (PBQ; Beck et al., 2001) is a 126-item self-report questionnaire and represents a promising instrument for measuring both dependent and distrust related beliefs in BPD. On the basis of the cognitive conceptualization of Beck, Freeman, and Associates (1990) the PBQ was developed to measure beliefs specific to a range of personality disorders (PDs). Although initially the PBQ items were not developed specifically to capture beliefs central to BPD (Beck et al., 2001), Butler and colleagues found that 14 items were significantly more strongly endorsed by BPD patients compared to patients with other PDs (Butler et al., 2002). Despite being empirically derived, the subscale reflected cognitive themes central to the cognitive model of BPD such as dependency related beliefs (e.g., I am needy and weak) and distrust (e.g., People will take advantage of me if I give them the chance). The 14 items formed the BPD subscale of the PBQ (PBQ-BPD). Butler, Brown, Beck, and Grisham (2002) found that the subscale demonstrated good internal reliability (alpha = .89), and good discriminant validity. Specifically, BPD patients scored significantly higher on this subscale than non-BPD patients who had avoidant, dependent, obsessive-compulsive, antisocial, narcissistic, or paranoid personality disorders. BPD patients also were
found to score significantly higher on the PBQ-BPD than on other PBQ subscales associated with other personality disorders (Butler et al., 2002).

However, the factor structure of the PBQ-BPD has yet to be investigated. An examination of the dimensions underlying the scale would further our understanding of the constructs measured by the subscale, and would aid research on the specific relationships between BPD-relevant cognitions, including those that operate antagonistically with each other, and psychopathology associated with this personality disorder. To date, researchers using the PBQ-BPD to examine the cognitive model of BPD have employed either the subscale's total score (Brown, Newman, Charlesworth, Crits-Christoph, & Beck, 2004) or individual item scores (Wenzel, Chapman, Newman, Beck, & Brown, 2006). Therefore, researchers have not been able to use the PBQ-BPD to explore hypotheses about the extent to which the different beliefs held by patients with BPD relate differently to the various types of pathology experienced by these patients, nor the impact of antagonistic belief profiles on BPD-related psychopathology.

For example, in research examining the efficacy of cognitive therapy for BPD, Brown et al. (2004) found that reductions in the total score of the PBQ-BPD did not correlate significantly with changes in psychopathology associated with BPD, such as hopelessness, depression, and suicide ideation. Although Brown et al.'s results suggest a lack of association between the change in BPD-related beliefs and such psychopathology in BPD, perhaps only certain types of BPD-relevant beliefs are related to the symptoms measured. Factor analysis of the PBQ-BPD therefore represents an important step towards furthering the usefulness of the scale for clarifying the association between beliefs and psychopathology in this patient group.

The primary purpose of this study was to extend the psychometric investigation of the PBQ-BPD by examining the scale's factor structure for patients diagnosed with BPD. On the basis of item content, we expected the factor analysis to generate factors reflecting themes of dependency and distrust, among others. Extending upon Brown et al.'s (2004) examination of the relationship between BPD relevant beliefs and depression, hopelessness and suicide ideation, we examined the extent to which factors of the PBQ-BPD differentially related to these types of psychopathology. We also examined the extent to which the interaction of beliefs that were antagonistic towards one another (e.g., dependence and distrust) was associated with such psychopathology.

METHOD

PARTICIPANTS

The sample comprised 184 patients diagnosed with BPD. Ninety-one of these subjects (49.5%) were outpatients who sought treatment between the years 1995 and 2000 at the Center for Cognitive Therapy, which is
part of the Department of Psychiatry at the University of Pennsylvania's School of Medicine. The remaining 93 patients (50.5%) were participants of clinical trials at the University of Pennsylvania's Psychiatric Research Unit. Of these research participants, 66 patients were enrolled in research on the effectiveness of CT on BPD, and 27 patients were enrolled in research examining the effectiveness of CT for preventing suicide attempts. These research patients completed the PBQ amongst other self report measures at several points across a 2 year period as part of the research assessment process. The CCT patients completed self report measures as part of their intake process. Baseline and intake assessments were used for the current study.

All patients were at least 18 years of age and were screened out for psychotic disorders. Axis I or II comorbidity was not a basis for exclusion. One hundred and eighty (97.3%) patients presented with Axis I comorbid diagnoses, 84.2% of whom presented with a mood disorder. The most frequently occurring specific Axis I diagnoses were anxiety disorders (30.7%), major depressive disorders (25.2%) and substance related disorders (20.2%). One hundred and ten patients were assessed for comorbid Axis II disorders, and 51 (46.4%) met criteria for other personality disorders—most commonly dependent personality disorder (n = 12, 23.5%), personality disorder not otherwise specified (n = 11, 21.6%) and obsessive compulsive personality disorder (n = 8, 15.7%). The remaining 74 BPD patients were not assessed for comorbid Axis II disorders.

The mean age of the sample was 33.1 (range = 18–61; SD = 10.47). Females comprised 75.4% of the sample. The racial composition of the sample was 55.2% White, 28.2% African-American, 5.0% Hispanic, 5.0% Asian, and 6.7% of unknown origin. Over a third (38.5%) of the participants had never married, 16.8% were married, 8.9% were divorced, 17.9% separated, and 1.10% were widowed. In terms of employment status, 35.0% of participants were employed, 19.80% were unemployed, 28.8% were students, 15.1% were on disability, and 1.11% were retired. With respect to education, 39.3% had a college degree, 49.7% had graduated from high school, and 11.0% had not graduated from high school.

MEASURES

**Personality Beliefs Questionnaire—Borderline Personality Subscale (PBQ-BPD).** The PBQ-BPD is a 14 item subset of the PBQ. As previously stated, the PBQ is a 126-item self-report measure of beliefs related to personality disorders. The item content of the PBQ was based on beliefs endorsed by patients with DSM-III-R personality disorders. The BPD subset was developed on the basis of PBQ items that discriminated 84 BPD patients from 204 patients with other personality disorders (Butler et al., 2002). This subset included items reflecting beliefs associated with dependency, helplessness, distrust, rejection/abandonment, losing emotional control and histrionic behavior. Patients are asked to rate their endorsement of each of the 14 beliefs on a 0 to 4 Likert-type scale (0 = I don't believe it at all; 4 =
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I believe it totally). The subset has demonstrated adequate internal consistency and discriminant validity (Butler et al., 2002).

Beck Depression Inventory-II (BDI; Beck, Steer, & Brown, 1996). The BDI is a 21-item self-report instrument used to measure the severity of depression in adults and adolescents. Each of the 21 items is represented by four statements reflecting increasing levels of severity, and each item is rated from 0 to 3. The BDI is scored by summing the 21 ratings and the total score ranges from 0 to 63. The psychometric properties of the BDI have been well established (Dozois, Dobson, & Ahnberg, 1998).

Scale for Suicidal Ideation (SSI; Beck, Kovacs, & Weissman, 1979). The SSI is a 19-item interviewer-administered scale used to evaluate the current intensity of the patient's specific attitudes, behavior, and plans to commit suicide. Each item consists of three options graded according to the intensity of the suicidality, using a 3-point scale ranging from 0 to 2. The ratings are summed to yield a total score ranging from 0 to 38. Individual items assess characteristics such as the wish to die, desire to make an active or passive suicide attempt, duration and frequency of ideation, sense of control over making an attempt, number of deterrents, and amount of actual preparation for a contemplated attempt. The SSI has been found to have moderately high internal consistency and good concurrent and discriminant validity for psychiatric outpatients (Beck, Brown, & Steer, 1997).

Beck Hopelessness Scale (BHS; Beck & Steer, 1993). The BHS consists of 20 true-false statements designed to assess the extent of positive and negative beliefs about the future. It is scored by summing keyed responses for hopelessness for each of the 20 items. The BHS total score ranges from 0 to 20. Adequate internal reliability has been reported for the BHS across diverse clinical and nonclinical populations, with KR-20s typically in the .80s. The correlations for the BHS with clinical ratings of hopelessness are in the .70s (Beck & Steer, 1993).

PROCEDURE

Patients were diagnosed for Axis I disorders according to the Structured Clinical Interview for the DSM-III-R (SCID-III-R; Spitzer, Williams, Gibbon, & First, 1990) or Structured Clinical Interview for the DSM-IV (SCID-IV; First, Spitzer, Gibbon, & Williams, 1995; First, Spitzer, Gibbon, Williams, & Benjamin, 1995). One hundred and ten patients (59.8%) were assessed for Axis II disorders using the SCIDs, while the remaining 74 (40.2%) patients were assessed only for BPD using the BPD module of the Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV; Zanarini, Frankenburg, Sickel, & Yong, 1996). Good to excellent interrater reliability indices have been reported for the SCIDs (kappas = .48 to .954: Maffei et al., 1997) and BPD module of the DIPD-IV (median kappa = .68: Zanarini et al., 2000). Assessors were postdoctoral or masters level clinicians who had received training on the assessment measures prior to conducting diagnostic evalu-
ations. Self-report measures were administered to patients following the interview. All participants completed the measures prior to beginning treatment.

RESULTS
DIMENSIONS OF THE PBQ-BPD

The dimensional structure of the PBQ-BPD was investigated through principal axis factor analysis (PAF) procedures. The PAF strategy was selected over principal components analysis to account for unreliability in each item's measurement (Thompson, 2004). Exploratory factor analysis was employed rather than confirmatory approaches in order to avoid restricting the number and content of factors of the subscale.

The number of factors to be extracted was based on Cattell's (1966) scree test and confirmed using Horn's (1965) parallel analysis (Zwick & Velicer, 1986). Parallel analysis involves comparing eigenvalues in the actual and randomly ordered data. Factors are retained when the eigenvalues in the actual data exceed the corresponding eigenvalues in the randomly ordered data (Thompson, 2004). Three factors emerged with eigenvalues greater than 1.0. Examination of the scree plot also suggested that 3 factors comprised the most appropriate solution. The eigenvalues for the first, second, and third factors were 5.26, 2.02, and 1.21, respectively, and together accounted for 50% of the variance. Results from the parallel analysis confirmed that the eigenvalues for the first three factors in the actual data exceeded the corresponding eigenvalues in the randomly ordered data (0.68, 0.53, 0.46). Thus, the three-factor solution was retained.

Based on the assumption that these factors would be intercorrelated, the factor loadings were subjected to oblique (Promax) rotation. Table 1 displays the pattern matrix of the factor loadings. Items that loaded at least .40 on one factor were assigned to a specific factor based on its highest loading. The first factor was interpreted as reflecting the belief that other people are untrustworthy, potentially abusive, and exploitative (distrust factor). The second factor was interpreted as reflecting beliefs about the self as needy, helpless, and reliant on the constant support of others (dependency factor). The third factor was interpreted as reflecting the belief that it is necessary to take preemptive steps in order to protect oneself from adverse interpersonal outcomes such as being ignored, rejected, or emotionally attacked (protection factor).

Items with significant loadings on the same factor were summed to derive factor scale scores for distrust (Cronbach's $\alpha = .87$, item total correlations range from .85 to .86, $M = 10.9$; $SD = 5.8$), dependency ($\alpha = .87$, item total correlations range from .83 to .87; $M = 8.0$; $SD = 4.1$), and protection ($\alpha = .75$, item total correlations range from .64 to .78; $M = 4.9$; $SD = 3.2$). Two items were not included in the calculation of factor scales because the difference in their loadings on two or more factors was less than 0.1 (Item
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TABLE 1. Title in Promax-Rotated Iterated Principal Axis Factor Standardized Regression Coefficients of the PBQ-BPD

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>125. People often say one thing and mean something else</td>
<td>.85</td>
<td>.03</td>
<td>-.09</td>
</tr>
<tr>
<td>126. A person whom I am close to could be disloyal or unfaithful</td>
<td>.80</td>
<td>.07</td>
<td>-.15</td>
</tr>
<tr>
<td>116. I have to be on guard at all times</td>
<td>.71</td>
<td>-.16</td>
<td>.33</td>
</tr>
<tr>
<td>119. People will take advantage of me if I give them the chance.</td>
<td>.71</td>
<td>-.03</td>
<td>.13</td>
</tr>
<tr>
<td>113. I cannot trust other people</td>
<td>.53</td>
<td>-.05</td>
<td>.26</td>
</tr>
<tr>
<td>4. If people get close to me, they will discover the real me and reject me</td>
<td>.47a</td>
<td>.37</td>
<td>.02</td>
</tr>
<tr>
<td>9. Unpleasant feelings will escalate and get out of control</td>
<td>.40a</td>
<td>.38</td>
<td>-.06</td>
</tr>
<tr>
<td>15. I am needy and weak</td>
<td>-.01</td>
<td>.75</td>
<td>-.04</td>
</tr>
<tr>
<td>27. I can't cope as other people can</td>
<td>.21</td>
<td>.57</td>
<td>-.19</td>
</tr>
<tr>
<td>18. I am helpless when left on my own</td>
<td>-.21</td>
<td>.56</td>
<td>.38</td>
</tr>
<tr>
<td>16. I need somebody around available at all times to help me carry out</td>
<td>-.14</td>
<td>.52</td>
<td>.36</td>
</tr>
<tr>
<td>what I need to do or in case something bad happens.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60. People will get me if I don't get them first</td>
<td>.09</td>
<td>-.13</td>
<td>.68</td>
</tr>
<tr>
<td>97. People will pay attention only if I act in extreme ways</td>
<td>.02</td>
<td>.13</td>
<td>.48</td>
</tr>
<tr>
<td>13. Any signs of tension in a relationship indicate that the relationship has gone bad; therefore I should cut it off.</td>
<td>.22</td>
<td>.05</td>
<td>.48</td>
</tr>
</tbody>
</table>

Note. Factor loadings ≥ .40 appear in bold. *These items are not included in the calculation of factor scale scores.

ASSOCIATIONS BETWEEN FACTORS AND MEASURES OF PSYCHOPATHOLOGY

In order to select the appropriate statistical tests for associations between the variables, distributions of all 6 variables (3 factors and 3 measures of psychopathology) were inspected for normality. Normal distributions were found for all variables, except for suicide ideation as measured by the SSI. The distribution for the SSI was bimodal. On the basis of previous research (Brown, Beck, Steer, & Grisham, 2000) showing that risk for suicide was significantly greater for patients with an SSI score greater than 1, the total scores on the SSI were therefore dichotomized into reflecting low suicide ideation (scores ≤ 1) or high suicide ideation (scores > 1).

The associations between the PBQ-BPD factors and measures of psychopathology were examined through zero and partial correlational analyses, analyses of variance (ANOVAs) and logistic regression analysis. Correlations between the variables are shown in Table 2. The distrust factor correlated significantly with all three measures of psychopathology. The dependency factor correlated significantly with depression and hopelessness. The protection factor correlated significantly with depression.

Given the intercorrelations among the PBQ-BPD factors, we examined partial correlations between each factor and measures of psychopathology.
TABLE 2. Zero-Order Correlations and Partial Correlations between Factors of the PBQ-BPD and Measures of Psychopathology

<table>
<thead>
<tr>
<th>PBQ-BPD subscales</th>
<th>Controls</th>
<th>BDI</th>
<th>BHS</th>
<th>SSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distrust</td>
<td>None</td>
<td>.41***</td>
<td>.39***</td>
<td>.35***</td>
</tr>
<tr>
<td></td>
<td>Dependence, Protection, Mood Disorder</td>
<td>.35***</td>
<td>.31**</td>
<td>.41***</td>
</tr>
<tr>
<td>Dependency</td>
<td>None</td>
<td>.37***</td>
<td>.30**</td>
<td>.13 ns</td>
</tr>
<tr>
<td></td>
<td>Distrust, Protection, Mood Disorder</td>
<td>.36***</td>
<td>.23*</td>
<td>.00 ns</td>
</tr>
<tr>
<td>Protection</td>
<td>None</td>
<td>.20*</td>
<td>.17 ns</td>
<td>.09 ns</td>
</tr>
<tr>
<td></td>
<td>Dependence, Distrust, Mood Disorder</td>
<td>-.16 ns</td>
<td>-.09 ns</td>
<td>-.12 ns</td>
</tr>
</tbody>
</table>

Note. Distrust = Distrust factor of the PBQ-BPD; Dependency = Dependency factor of the PBQ-BPD; Protection = Preemptive Protection factor of the PBQ-BPD; Mood Disorder = BHS = Beck Hopelessness Scale; BDI = Beck Depression Inventory-II; SSID = Scale for Suicide Ideation dichotomized into high (scores >1) and low (scores ≤1) categories; N = 118–184.

*p < .05; **p < .005; ***p < .001; ns = nonsignificant

while controlling for the other two PBQ-BPD factors. In addition, we also examined whether the presence of mood disorders (dichotomized as present or absent) accounted for associations between the factors and measures of psychopathology. The partial and zero order correlational analyses showed a similar pattern of associations between the variables (Table 2). However, after controlling for the presence of mood disorders and two PBQ-BPD factors, the protection factor no longer correlated significantly with any measure of psychopathology.

In order to investigate whether the presence of antagonistic beliefs was associated with high levels of psychopathology, two types of analyses were conducted. First, a logistic regression was performed to examine the joint contributions of distrust and dependency to suicide ideation. Distrust and dependency were standardized and entered before the interaction term. Distrust emerged as the only significant predictor of SSI, B (1) = .78, p < .001. Neither dependency, B (1) = .05, p = .81, nor its interaction with distrust, B (1) = .74, p = .70, significantly added to the prediction of SSI.

Next, we examined whether patients with antagonistic belief profiles—i.e., with high scores on both the distrust and dependency factors, demonstrated higher levels of depression and hopelessness than patients who scored high on only one of the factors. Two separate 2 by 2 ANOVAs were conducted. The factor levels were distrust and dependency dichotomized as low and high, according to a median split of the scores. In the first ANOVA, depression was the dependent variable (DV) and in the second, hopelessness was the DV. The assumption of equality of error variance was met for both analyses, F (3, 148) = 2.58, p = .06, for depression; F (3, 105) = .83, p = .48, for hopelessness. The interaction between distrust and dependency was not significant in either ANOVA, F (1, 148) = 1.69, p = .20 with depression as DV; F (1, 105) = 0.01, p = .93, with hopelessness as DV. Main effects for distrust, F (1, 148) = 18.60, p < .001 and dependency, F (1, 148) = 6.62, p < .05, were significant for depression. Depression scores were significantly higher for the high distrust group (M = 37.5, SD = 11.3) than the low distrust group (M = 28.0, SD = 12.6). Depression was also sig-
SIGNIFICANTLY HIGHER IN THE HIGH DEPENDENCY GROUP (M = 136.4, SD = 12.2) THAN IN THE LOW DEPENDENCY GROUPS (M = 29.9, SD = 12.7). THE TWO-WAY ANOVA ON HOPELESSNESS YIELDED A MAIN EFFECT FOR DISTRUST, F (1,105) = 9.74, P < .05, SUCH THAT HOPELESSNESS WAS SIGNIFICANTLY HIGHER IN THE HIGH DISTRUST GROUP (M = 14.5, SD = 6.2) THAN THE LOW DISTRUST GROUP (M = 10.6, SD = 5.4). HOWEVER, HOPELESSNESS WAS NOT SIGNIFICANTLY DIFFERENT BETWEEN THE LOW AND HIGH DEPENDENCY GROUPS, F (1, 108) = 2.24, P = .10. THESE RESULTS SHOWED THAT PATIENTS WITH ANTAGONISTIC BELIEF PROFILES WERE NOT SIGNIFICANTLY MORE DEPRESSED OR HOPELESS THAN PATIENTS SCORING HIGH ON EITHER THE DISTRUST OR DEPENDENCY FACTORS (Table 3).

DISCUSSION

This study examined the factor structure of the PBQ-BPD subscale and the associations between belief dimensions and psychopathology in BPD. Factor analysis revealed that the 14-item subscale was explained by three factors reflecting the belief that one is helpless without the constant support of other people (dependency factor), the expectation of betrayal, exploitation and dishonesty from others (distrust factor) and the view that it is necessary to preemptively take steps to prevent being attacked, ignored or rejected (protection factor).

The factor structure of the PBQ-BPD is consistent with the cognitive model of BPD which characterizes the central cognitive mechanisms in BPD as involving dysfunctional beliefs of self as helpless and others as untrustworthy (Beck et al., 2004; Butler et al., 2002; Pretzer, 1990) and impulses to engage in defensive behaviors in a preemptive manner in order to avoid being hurt, exploited, or harmed (Layden et al., 1993; Young, 1994).

Two items from the BPD subscale did not load clearly on any single factor, but rather loaded highly on both dependency and distrust factors. These items reflect additional beliefs that may need to be examined in BPD. The first item, "If people are close to me, they will discover the real me and reject me," appeared to reflect a sense of badness about oneself—that one is essentially unworthy of love, a belief pattern suggested to be highly relevant for patients with BPD (Arntz, Dreessen, Schouten, & Weertman, 2004). The second item, "Unpleasant feelings will escalate and get

<p>| TABLE 3. Means (standard deviations) of BDI and BHS for BPD Patients with High versus Low Distrust and Dependency |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|</p>
<table>
<thead>
<tr>
<th>Low Distrust</th>
<th>High Distrust</th>
<th>Low Distrust</th>
<th>High Distrust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Dependency</td>
<td>High Dependency</td>
<td>Low Dependency</td>
<td>High Dependency</td>
</tr>
<tr>
<td>BDI 25.18 (13.02)</td>
<td>32.70 (10.53)</td>
<td>36.09 (9.16)</td>
<td>38.57 (12.61)</td>
</tr>
<tr>
<td>BHS 9.76 (5.42)</td>
<td>11.58 (5.32)</td>
<td>13.27 (6.42)</td>
<td>15.28 (5.92)</td>
</tr>
</tbody>
</table>

Note. PBQ-BPD = Borderline Personality Disorder subscale of the Personality Beliefs Questionnaire; Distrust = Distrust factor of the PBQ-BPD; Dependency = Dependency factor of the PBQ-BPD; BHS = Beck Hopelessness Scale; BDI = Beck Depression Inventory-II.

^n = 45; ^n = 27; ^n = 34; ^n = 46; ^n = 25; ^n = 19; ^n = 26; ^n = 39.
out of control," reflects a sense of personal helplessness about controlling one's emotions—a belief consistent with Linehan's cognitive-behavioral model of BPD (Linehan, 1993) which portrays patients with BPD as having difficulties in emotional regulation.

Associations between the three factors and various measures of psychopathology were also explored. Each factor was found to be associated with a different set of psychopathology. The distrust factor related to depression, hopelessness, and suicide ideation. The dependency factor related significantly to depression and hopelessness; and finally, preemptive protection related marginally at best to depression. The association of dependency with depression and hopelessness is consistent with previous research on cognitive processes in depression and hopelessness (Bieling & Alden, 1998; Robins & Luten, 1991; Zuroff, Igreja, & Mongrain, 1990). The association of interpersonal distrust with hopelessness, depressive symptoms, and suicidal ideation is also reflective of other studies that have shown associations between paranoid ideation, depressive symptoms, and suicide attempts (Candido & Romney, 2002; Evren & Evren, 2004; Ozkan & Altindag, 2005; Pompili et al., 2005).

Interestingly, beliefs about the need to act preemptively in order to protect oneself was not significantly associated with hopelessness or suicide ideation, and only marginally associated with depression. This finding is inconsistent with conjectures made by clinicians regarding the dysfunctional outcomes associated with preemptive protective behaviors (Layden et al., 1993; Young, 1994). Beliefs about the need to act before one is abandoned, ignored or rejected may in fact provide patients with BPD an expectation that threat can be avoided, and thus provide protection against hopelessness and despair. Thus, the actualization of those beliefs rather than the beliefs themselves may be associated with negative consequences. Alternatively, preemptive protection may be associated with a different type of psychopathology that was not assessed in this study such as anger, poor impulse control, loneliness, and poor social functioning.

Finally, no interaction effect was found between dependency and distrust in terms of explaining levels of depression, hopelessness, or suicidal ideation. This finding is also inconsistent with clinical observations that antagonism between paradoxical beliefs underlies in part the negative affects in BPD (Layden et al., 1993). One reason for the absence of a significant relationship between paradoxical beliefs in BPD and psychopathology may be because of the type of psychopathology examined in this study. Pretzer (1990) suggested that the combination of dependency related beliefs (e.g., I am powerless and vulnerable) and distrust related beliefs (e.g., The world is dangerous and malevolent) forces the BPD patient to vacillate between autonomy and dependence without being able to rely on either. According to Pretzer's formulation, a patient with such assumptions would oscillate between seeking closeness with others and pushing them away because of distrust. While these assumptions appear not associated with depression, hopelessness, or suicide ideation, their association with erratic interpersonal patterns remains to be investigated.
This study has limitations that may be addressed through further research. First, the study did not replicate the factor structure of the PBQ-BPD subscale in a separate sample, nor examine whether the factor structure differed across sex and ethnic variables. The sample size available for analysis in this study was not sufficiently large enough to allow for an examination of the factor structure in different cohorts (Guadagnoli & Velicer, 1988). Although the number of factors was validated through parallel analysis, future research will need to examine the stability of the obtained factor structure. Second, causality between beliefs and psychopathology has not been tested in this study. This assumption is embedded within the cognitive theory of psychopathology, which remains to be tested for BPD. Further research is required, using longitudinal or experimental methods, to test for the contributions of beliefs to psychopathology in BPD.

Third, other beliefs hypothesized to be central to BPD such as those relating to badness or a lack of emotional control (Arntz et al., 1999; Arntz et al., 2004; Young, 1994) are not adequately measured by the PBQ-BPO. Hence, when assessing BPD patients, it is important to assess such beliefs in addition to those identified in our study.

Fourth, further research needs to explore the extent to which our findings are specific to BPD, or apply more broadly to other populations. We did not assess for comorbid Axis II disorders in 74 of 184 patients in our sample, nor control for comorbid disorders in our analyses. The extent to which comorbidity accounts for the factor structure of the BPD-PBQ, and for relationships between these factors and psychopathology remains to be investigated. Similarly, more research also needs to examine whether the three belief factors assessed by the PBQ-BPD are more highly endorsed by patients with BPD, compared to normal and other psychiatric controls. Some authors have also suggested that there are several subtypes of BPD and that these subtypes may differ with regards to their belief profiles (Layden et al., 1993). Therefore, future research would need to assess for the specificity and sensitivity of the three factors for the different BPD subtypes and across other populations.

The study findings have implications for the assessment and treatment of BPD. Using the three-factor structure of the PBQ-BPD, clinicians may better identify the type of belief dimension strongly held by a particular patient with BPD. For example, rather than employ the PBQ-BPD simply as a measure of intensity of BPD beliefs in general, clinicians may utilize the measure to help develop a conceptualization of the patient's belief profile. By identifying the most relevant beliefs, the therapist may have more specific information to develop a cognitive conceptualization of the patient's problem, devise more focused interventions and develop a productive therapeutic relationship (Layden et al., 1993). For example, clinicians who assess that the patients have a strong distrust of others may avoid interventions such as relaxation training, which presume a level of trust in the therapeutic relationship. Instead, the clinician may deliberately address the patient's beliefs, doubts, and suspicions about therapy in the context of developing the collaborative relationship before being more di-
rective. A multidimensional PBQ-BPD can be a useful tool to help clini-
cians better conceptualize their patients' problems and choose the most
appropriate intervention strategy.

REFERENCES


DYSFUNCTIONAL BELIEFS


