

The cross-informant concordance and concurrent validity of the Borderline Personality Features Scale for Children in a community sample of boys

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Abstract

The Borderline Personality Disorder Features Scale for Children (BPFSC) is currently the only dimensional measure specifically developed to assess borderline features in children and adolescents. Few studies have investigated this measure for its concurrent validity and concordance between youth self-report and parent-report versions. To this end, the current study had two aims: (1) to investigate the cross-informant concordance (youth self-report vs. parent-report) of the BPFSC; and (2) to examine the concurrent validity of the BPFSC by showing that youth scoring high on the BPFSC also show poor clinical and psychosocial functioning, as measured by a standard Axis I scale. A community sample ($N = 171$) of boys between the ages of 8 and 18 completed the BPFSC and a self-report measure of Axis I psychopathology. Parents completed a newly developed parent-report version of the BPFSC (BPFSP) and a standard measure of Axis I psychopathology to index clinical and psychosocial functioning. Findings confirmed expectations. Modest concordance between parent- and self-report ratings were found. In addition, youth with borderline features showed poorer clinical and psychosocial functioning in all domains, especially where externalizing problems were concerned. Concurrent validity and modest parent–child concordance were demonstrated for the BPFSC. The BPFSC and BPFSP show promise as dimensional measures to assess borderline features in boys. However, a criterion validity study is needed before the measure can be used.

Keywords

adolescents, borderline features, children, validity

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Introduction

Borderline personality disorder (BPD) is a particularly devastating form of psychopathology with pronounced impairments in psychosocial functioning and marked risk for mortality (Paris, 1993; APA, 2000). Adult patients with this complex syndrome are over-represented across inpatient and outpatient treatment settings (Widiger & Sanderson, 1995), requiring extensive utilization of mental health services (Zanarini, Frankenburg, Khera, & Bleichmar, 2001). The multi-faceted syndrome is characterized in the DSM-IV-TR (APA, 2000) by disturbance across four primary domains of functioning (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004): (a) affective (e.g., inappropriate and intense anger, affective instability, and chronic feelings of emptiness); (b) cognitive (e.g., paranoid ideation, severe dissociative symptoms, and identity disturbance); (c) behavior (e.g., self-destructive impulsivity and suicidal behavior or self-mutilation); and (d) interpersonal (e.g., unrealistic fears of abandonment by intimate others and unstable and intense relationships).

Given the devastating impact that BPD has on individuals, their families, and health care systems, a better understanding of the characteristics of juvenile BPD is warranted (Sharp & Bleiberg, 2007; Sharp & Romero, 2007). Yet, despite DSM provision for diagnosing BPD under the age of 18, BPD is still a controversial diagnosis in children and adolescents and a topic of heated debate. The common belief that personality lacks cohesiveness and stability in children and adolescents has made some reluctant to diagnose personality disorders in this age group (Miller, Muehlenkamp, & Jacobson, 2008). Thus, compared to Axis I disorders in childhood, there is a relative lack of systematic, empirical understanding about the developmental precursors, course, correlates, risk factors, and rates of BPD in children and adolescents (Crick, Murray-Close, & Woods, 2005; Sharp & Romero, 2007). However, recent reviews of the literature comparing adult BPD and child/adolescent BPD (Bondurant, Greenfield, & Tse, 2004; Sharp & Romero, 2007; Miller et al., 2008) suggest that the prevalence, reliability, and validity of a BPD diagnosis in adolescents may be adequate and comparable to those found in adults. Moreover, similar to arguments regarding the measurement and diagnosis of psychopathy in youth (see Sharp & Kine, 2008), authors have argued that in the absence of empirical data regarding the construct and diagnosis of juvenile BPD, youth with precursors or early features of the disorder may be disadvantaged if they are not adequately assessed or identified. In order to identify such youth early on, there is a need for reliable and valid assessment tools to examine borderline pathology in children and adolescents (Crick et al., 2005; Sharp & Romero, 2007; Miller et al., 2008). The establishment of the validity and reliability of such tools is a much-needed prerequisite before the identification of borderline features can be integrated into regular screening of psychiatric problems in child and adolescent psychiatric and pediatric services.

To this end, Crick, Murray-Close, and Woods (2005) developed the Borderline Personality Features Scale for Children (BPFSC), for use in children and adolescents aged 9 and up. Whilst several studies (Greenman, Gunderson, Cane, & Saltzman, 1986; First, Spitzer, Gibbon, Williams, & Benjamin, 1997; Lenzenweger, Loranger, Korfine, & Neff, 1997) have adapted adult semi-structured interviews to assess BPD in children and adolescents, these remain unvalidated and are expensive and time-consuming. Other studies have made use of adult self-report measures which may be developmentally inappropriate (see Sharp & Romero, 2007, for a review). In addition, Skodol and colleagues (Skodol et al., 2002) have highlighted criticisms against the DSM's categorical method of diagnosis, including the lack of empirical support for diagnostic thresholds and the heterogeneity of the BPD diagnosis. Some researchers therefore advocate for a dimensional or continuous approach to the assessment of juvenile BPD (Crick et al., 2005; Sharp & Romero, 2007) and adult BPD (Skodol et al., 2002).

So far, only one study has investigated the BPFSC for its construct validity. Crick, Murray-Close, and Woods (2005) showed that children's scores on the BPFSC were positively associated with age-appropriate indicators of borderline pathology, including cognitive sensitivity, emotional sensitivity, exclusivity with a best friend, and relational aggression. Scores were related to these indicators above and beyond scores on a childhood measure of depression.

Another way of establishing construct validity for the BPFSC is to demonstrate concurrent validity with poorer clinical and psychosocial functioning as evidenced by elevated scores on standard Axis I scales. Studies have demonstrated that adults with BPD have significantly poorer clinical and psychosocial functioning compared to those with other personality disorders. BPD is comorbid with several Axis I disorders, particularly mood, anxiety, and substance abuse disorders. For instance, a study on adult inpatients showed that BPD patients, compared to those with other personality disorders, were much more likely to also meet criteria for major depression (82.8% vs. 67.2% in other personality disorders), panic disorder (47.8% vs. 20%), social phobia (45.9% vs. 19%), post-traumatic stress disorder (55.9% vs. 21.6%), and eating disorder not otherwise specified (26.1% vs. 8.8%) (Zanarini et al., 1998).

Studies also show a relationship between BPD and poor clinical and psychosocial functioning in children and adolescents, as evidenced by high comorbidity rates with Axis I disorders including externalizing disorder (Eppright, Kashani, Robinson, & Reid, 1993), major depression (McManus, Lerner, Robbins, & Barbour, 1984), bipolar disorder (Kutcher, Marton, & Korenblum, 1990), and substance abuse (Grilo, Levy, Becker, Edell, & McGlashan, 1996). Chanen, Jovev, and Jackson (2007) reported that of 177 outpatients with BPD ($n = 46$), Personality Disorder Not Otherwise Specified (PDNOS; $n = 88$), or no Personality Disorder (PD; $n = 43$), adolescents with BPD evidenced the most severe psychiatric symptoms, with functional impairments across broad domains. Adolescent outpatients with BPD showed greater risk relative to outpatients without PD (e.g., disruptive behavioral disorders, mood disorders, anxiety disorders, and substance abuse/dependence) and with PDNOS (e.g., disruptive behavioral disorders and substance abuse/dependence). The elevated rates of disruptive, affective, and anxiety problems were also evident for youth attending day hospital treatment (Guzder, Paris, Zelkowitz, & Feldman, 1999). Given the relationship between BPD and Axis I pathology described above, our first aim was to investigate the relationship between the BPFSC and indices of Axis I pathology to show that youth scoring high on the BPFSC demonstrate poor clinical and psychosocial functioning.

It should be noted that the studies that have investigated the comorbidity of borderline traits with Axis I pathology described above have all relied on adult measures for determining a borderline diagnosis. For instance, Eppright et al. (1993) and Chanen et al. (2007) used the Structured Clinical Interview for DSM-III-R Personality Disorders (SCID II; First et al., 1997) in their studies. McManus et al. (1984) used the Diagnostic Interview for Borderline Patients (DIB) (Gunderson, Kolb, & Austin, 1981), while Kutcher et al. (1990) and Grilo et al. (1996) relied on the Personality Disorders Examination (Loranger, Susman, Oldham, & Russakoff, 1987). One study used a child version of the Retrospective Diagnostic Interview for Borderlines (Guzder et al., 1999). Moreover, apart from the BPFSC, no other questionnaire measure for assessing borderline features in children or adolescents currently exists.

For the purposes of the current study we assess the relationship between the BPFSC and poor clinical and psychosocial functioning from both a categorical and dimensional point of view. From a dimensional point of view we expect the BPFSC to correlate significantly with both internalizing and externalizing measures of Axis I pathology, given that both have been found to be comorbid with borderline symptoms in adult and youth studies of BPD. From a categorical point of view, we expect high scorers on the BPFSC to show significantly higher scores on Axis I measures. Moreover,

by making use of parent and youth self-report measures on the BPFSC and Axis I pathology, we will attempt to control for the effect of shared method variance—that is, a significant correlation between Axis I measures and the BPFSC due to single informant ratings. Therefore, we will pay special attention to cross-informant correlations and group differences.

Our second aim was to examine the cross-informant concordance between child self-report and parent-report on the BPFSC. Whilst similar endorsement of items by parents may be seen as evidence of cross-informant reliability, it is by now well-known that parents and children often disagree on the presence and severity of problem behaviors (Verhulst & van der Ende, 1992). Low cross-informant correlations have often led researchers to cast doubt on one or both informants and have also been equated with unreliability (Gould, Bird, & Jaramillo, 1993); however, it is important to keep in mind that different informants may validly contribute different information (Achenbach, McConaughy, & Howell, 1987). Multiple informants are needed to obtain a comprehensive picture of an individual's functioning (Verhulst & van der Ende, 1992). To this end, we adapted the child self-report version of the BPFSC to create a parallel parent-report version. We did this by making slight modifications to the items on the original self-report instrument (e.g., replacing 'I've picked friends that have treated me badly', with 'My child has chosen friends...'). We expected a significant but low correlation between parent and youth versions of the BPFSC, thereby acknowledging concordance but also the unique contribution that each rater makes to the understanding of the youth's functioning.

To summarize, the current study had two aims. First, to investigate the cross-informant concordance (youth self-report vs. parent-report), hypothesizing moderate agreement typical of most child psychopathology measures (Achenbach et al., 1987). Second, to examine the concurrent validity of a promising new scale to assess borderline features in youth (BPFSC), by investigating its relationship with clinical and psychosocial functioning (Axis I psychopathology). The above two aims were investigated in a community sample of boys. We chose to recruit a community sample of boys due to a dearth of community studies investigating juvenile BPD, as well as an over-focus on females for both adult and juvenile studies of BPD (Bondurant et al., 2004; Sharp & Romero, 2007). Given the nature of the sample, and against the background of previous work suggesting a relationship between externalizing problems and borderline features in boys (Crawford, Cohen, & Brook, 2001), concurrent validity for the BPFSC at the level of cross-informant ratings would be demonstrated by a relationship between borderline features and indices of externalizing problems.

Method

Participants

A total sample of 171 male 2nd- to 12th-graders was recruited through community youth organizations in Houston, Texas. Table 1 summarizes the demographic and psychiatric characteristics of the sample by youth and parent-report.

The mean age and grade of the sample was 162 months (13.5 years) and 7th grade, respectively, with the youngest aged 8 ($n = 1$) and the oldest aged 18 ($n = 1$). Just under half of the youth (48.5%; $n = 83$) were between ages 8 and 12, and 51.5% ($n = 88$) were between ages 13 and 18. The sample was ethnically representative, consisting of approximately 62% European Americans, 14% Hispanics, 11% African Americans, 10% Asian Americans, 2% Middle Easterners, while 1% represented other groups. Based on school demographic information (highest level of parental educational attainment), the socio-economic status of the sample was estimated to be primarily middle class.

Table 1. Sample demographic and psychiatric characteristics by youth and parent report

| Variable | Total sample (N = 171) | | Borderline Features group | | | | | | | |
|---|---------------------------|-------|---------------------------|-------|---------------|-------|-----------------|-------|---------------|-------|
| | | | BPFSC (N = 166) | | | | BPFSP (N = 162) | | | |
| | | | Low (N = 132) | | High (N = 34) | | Low (N = 125) | | High (N = 37) | |
| | M | SD | M | SD | M | SD | M | SD | M | SD |
| Child demographic | | | | | | | | | | |
| Age (Mos) | 161.96 | 22.75 | 161.71 | 22.93 | 163.29 | 21.19 | 160.46 | 22.5 | 166.65 | 21.55 |
| Grade | 7.35 | 1.81 | 7.35 | 1.87 | 7.56 | 1.73 | 7.31 | 1.85 | 7.73 | 1.73 |
| Psychiatric | | | | | | | | | | |
| <i>Borderline Features (total score)</i> | | | | | | | | | | |
| Child report (BPFSC) | 58.37 | 13.12 | 53.5 | 9.69 | 77.29 | 4.97 | 57.24 | 12.64 | 64.21 | 12.18 |
| Parent report (BPFSP) | 46.99 | 11.74 | 45.5 | 10.49 | 52.36 | 14.82 | 42.16 | 7.64 | 63.29 | 7.86 |
| <i>Axis I Psychopathology (total score)</i> | | | | | | | | | | |
| Child report (YSR) | 55.49 | 10.71 | 53.2 | 9.2 | 65.24 | 9.37 | 54.27 | 10.02 | 60.53 | 10.48 |
| Parent report (CBCL) | 49.73 | 9.75 | 48.49 | 9.62 | 54.39 | 9.32 | 47.2 | 8.8 | 58.33 | 8.3 |

Approximately 10% of the sample's parents had obtained a high school diploma or equivalent certification, 18% received some college education, 48% obtained a bachelor's or associate's degree, 17% received a master's degree, and 7% received doctorate-level training.

Measures

Borderline personality features. Borderline features were assessed using the BPFSC and the newly adapted BPFSP (parent-report). The BPFSC is a self-report instrument that assesses borderline personality features among children and adolescents aged 9 and older (Crick et al., 2005). The BPFSC is a scale based upon the BOR (borderline) Scale of the Personality Assessment Inventory (PAI; Morey, 1991), modified for use with youth. A factor analysis of the original BOR Scale of the PAI suggested that the BOR Scale assesses four domains of BPD: affective instability, identity problems, interpersonal problems, and self-harm (Morey, 1991). The BPFSC assesses these domains using age-appropriate items adapted from the original instrument along a 4-point Likert scale ranging from 1 (*not at all true*) to 5 (*always true*). Thus, children report on their affective instability (six items; e.g., 'My feelings are very strong. For instance, when I get mad, I get really, really mad. When I get happy, I get really, really happy'), identity problems (six items; e.g., 'I feel that there is something important missing about me, but I don't know what it is'), negative relationships (six items; e.g., 'I've picked friends who have treated me badly'), and self-harm (six items; e.g., 'I get into trouble because I do things without thinking').

Prior research examining the 24-item instrument with a large community sample ($n = 400$) of boys and girls in elementary school showed high internal consistency (Cronbach $\alpha > .76$) across 12 months, as well as construct validity (Crick et al., 2005).

To investigate the relationship between borderline features and Axis I pathology we used both a dimensional and a categorical approach to borderline features and Axis I pathology. To create high- and low-scoring groups on the BPFSC and BPFSP, participants were rated as 'high scorers' if their total score was at or above the 80th percentile for their informant group. This approach was used to accommodate the restricted range of responses—given the nature of the sample (community), the data were positively skewed.

Axis I psychopathology. The Youth Self Report (YSR; Achenbach & Rescorla, 2001) and Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) were used to assess levels of Axis I psychopathology. These are well-established, evidence-based assessment instruments (Holmbeck et al., 2008) that assess global and more specific psychopathology among youth aged 6 to 18 years. Each instrument assesses behavioral and emotional disorders over the previous 6 months. Each measure contains 112 problem items, each scored on a 3-point scale: 0 (*not true*), 1 (*somewhat or sometimes true*), and 2 (*very or often true*). The Total Problems scale yields a *T*-score of general psychiatric functioning. Achenbach and Rescorla (2001) recommend using a *T*-score cut-off at or above 65 to separate individuals at higher risk for Axis I psychopathology. Prior research indicates this threshold discriminates between clinical and non-clinical populations (Achenbach & Rescorla, 2001).

In addition to the Total Problems scale, the YSR/CBCL developers constructed several DSM-IV scales to identify disorder-specific problems among youth: Affective Problems, Anxiety Problems, Somatic Problems, Attention Deficit/Hyperactivity Problems, Oppositional Defiant Problems, and Conduct Problems.

Procedures

Participants were recruited through community youth organizations in Houston, Texas. The study was advertised through community websites. Interested parents were sent information about the study. The research team's contact information was provided and parents and children were encouraged to ask any questions they had about the study and/or consent procedures. Positive consent and assent were obtained from parents and children respectively. Assessment of borderline features, demographic information, and Axis I psychopathology occurred during a single examination in groups of sizes between 6 and 15 participants.

Data analytic strategy

Spearman correlation coefficients were conducted to assess the relationship between youth self-reported and parent-reported borderline features. In order to assess cross-informant agreement for borderline features and Axis I psychopathology from a dimensional point of view, we tested the association between borderline features, total problems, and DSM-oriented problems according to each informant group using Spearman correlations.

Next, the relationship between Axis I psychopathology and borderline features was explored categorically by informant group. We employed a strategy that determines relative risk (RR) of an event (or developing condition) between two groups. The statistic involves analysis of binary outcomes where the outcome of interest has a relatively low probability. Expressed differently, the relative risk (RR) of one group compared with another is simply the ratio of the risks in the two groups. Thus, the relative risk represents how much risk is increased or decreased from an initial level. In simple comparison between groups, an RR of 1 means there is no difference in risk

Table 2. Spearman correlation coefficients for psychopathology measures

| Psychopathology YSR problem scale | Psychopathology | | | | | | | Child | Parent |
|--------------------------------------|--------------------|-----------|---------|---------|-------|----------------------------------|-------|-------|--------|
| | CBCL problem scale | | | | | Borderline Features (BPFS) | | | |
| | Total | Affective | Anxiety | Somatic | ADHD | ODD | CD | | |
| 1. Total | .27** | — | — | — | — | — | — | .63** | .33** |
| <i>DSM problem</i> | | | | | | | | | |
| 2. Affective | — | .36** | — | — | — | — | — | .49** | .22** |
| 3. Anxiety | — | — | .14 | — | — | — | — | .46** | .21** |
| 4. Somatic | — | — | — | .08 | — | — | — | .29** | .16* |
| 5. Attention | — | — | — | — | .37** | — | — | .49** | .23** |
| <i>Deficit/Hyperactivity</i> | | | | | | | | | |
| 6. Oppositional Defiant | — | — | — | — | — | .28** | — | .41** | .32** |
| 7. Conduct | — | — | — | — | — | — | .33** | .47** | .24** |
| <i>Borderline Features (BPFS)</i> | | | | | | | | | |
| 8. Child | .21** | .15 | .15 | .13 | .20* | .15 | .14 | — | .24** |
| 9. Parent | .64** | .47** | .33** | .33** | .47** | .54** | .48** | .24** | — |

**significant at $p < .001$

*significant at $p < .01$

between the two groups. An RR of < 1 means that the event is less likely to occur in an experimental group than in a control group. An RR of > 1 means that the event is more likely to occur in the experimental group than in the control group. In the standard or classical hypothesis testing framework, the null hypothesis is that $RR = 1$ (the putative risk factor has no effect). The null hypothesis can be rejected in favor of the alternative hypothesis: that the factor in question does affect risk if the confidence interval for RR excludes 1. Recent authors have argued on behalf of the more conservative point estimate that RR should exceed 2 (Samet & Burke, 2001).

Results

Cross-informant agreement for the BPFS

In Table 2, we summarize correlations for YSR, CBCL, BPFSC, and BPFSP, respectively. The BPFSP and BPFSC were modestly and positively related ($r = .26, p < .01$). Similarly, correlation coefficients between Total Problem *T*-scores on the CBCL and YSR instruments showed a modest positive association ($r = .27, p < .01$). As regards specific DSM-oriented scales, as shown in Table 2, cross-informant agreement was evident for some but not all of the DSM-oriented clinical scales.

A paired sample *t*-test revealed significantly different means ($t = 10.23; df = 161; p < .001$), with the self-report mean ($m = 58.37; SD = 13.12$) significantly higher than the parent-reported mean ($m = 46.99; SD = 11.74$).

Overall, this pattern of cross-informant agreement suggests that, despite a modest positive correlation between youth- and parent-report, a large proportion of unshared variation across informants exists, thereby justifying separate comparisons for each group of informants in subsequent analyses.

Table 3. Differences on the YSR between high and low scorers determined by the BPFSC-C ($N = 166$)

| Variable YSR problem scale | Borderline Features group - child-report | | | | Pearson χ^2 | p-value | Relative risk |
|----------------------------------|--|-------|--------------------------------|-------|------------------|---------|------------------|
| | Control ($N = 132$) | | High BPD trait ($N = 34$) | | | | |
| | Raw | % | Raw | % | | | |
| Total | | | | | 44.74 | 0.01 | |
| Subthreshold | 119 | 90.15 | 13 | 38.24 | | | |
| Clinical | 13 | 9.85 | 21 | 61.77 | | | 6.27 |
| DSM-oriented | | | | | | | |
| Affective | | | | | 10.6 | 0.01 | |
| Subthreshold | 119 | 90.15 | 25 | 73.53 | | | |
| Clinical | 13 | 9.85 | 9 | 28.13 | | | 2.86 |
| Anxiety | | | | | 14.29 | 0.01 | |
| Subthreshold | 125 | 94.7 | 25 | 73.53 | | | |
| Clinical | 7 | 5.3 | 9 | 26.47 | | | 4.99 |
| Somatic | | | | | 17.13 | 0.001 | |
| Subthreshold | 104 | 78.79 | 15 | 44.12 | | | |
| Clinical | 28 | 21.12 | 19 | 55.88 | | | 2.65 |
| ADH | | | | | 19.22 | 0.001 | |
| Subthreshold | 120 | 90.91 | 22 | 64.71 | | | |
| Clinical | 12 | 9.09 | 12 | 35.29 | | | 3.88 |
| OD | | | | | 8.32 | 0.05 | |
| Subthreshold | 118 | 89.39 | 26 | 76.47 | | | |
| Clinical | 14 | 10.61 | 8 | 23.53 | | | 2.22 |
| Conduct | | | | | 23.5 | 0.001 | |
| Subthreshold | 121 | 91.67 | 21 | 61.77 | | | |
| Clinical | 11 | 8.33 | 13 | 38.24 | | | 4.59 |

Note: Relative risk > 2.0 represents a reliable group difference.

The relationship between Axis I psychopathology and borderline features

We first report findings within informant, followed by findings across informants.

Association between BPFSC and YSR. As shown in Table 2, the BPFSC was positively and strongly correlated with Total Problems on the YSR ($r = .63, p < .01$). Moderate positive correlations were also found between the BPFSC and all YSR DSM-oriented problem scales.

Association between BPFSP and CBCL. As shown in Table 2, the BPFSP were positively and strongly correlated with Total Problems on the CBCL ($r = .64, p < .01$). Moderate positive correlations were similarly found between the BPFSP and all DSM-oriented problem scales on the CBCL.

Differences on the YSR between high and low scorers as determined by the BPFSC. As shown in Table 3, boys in the high-BPD trait group reported significantly more YSR Total Problems and significantly more symptoms for all DSM-oriented scales. In addition, high scorers reported six times the relative risk for overall psychopathology and up to five times greater risk for specific

Table 4. Differences on the CBCL between high and low scorers determined by the BPFSP (*N* = 162)

| Variable CBCL problem scale | Borderline Features group - parent-report | | | | Pearson χ^2 | <i>p</i> -value | Relative risk |
|-----------------------------------|---|-------|------------------------------------|-------|------------------|-----------------|------------------|
| | Control (<i>N</i> = 125) | | High BPD trait (<i>N</i> = 37) | | | | |
| | Raw | % | Raw | % | | | |
| Total | | | | | 10.39 | 0.01 | |
| Subthreshold | 122 | 97.6 | 31 | 83.78 | | | |
| Clinical | 3 | 2.4 | 6 | 16.21 | | | 6.75 |
| <i>DSM-oriented</i> | | | | | | | |
| Affective | | | | | 23.92 | 0.01 | |
| Subthreshold | 121 | 74.69 | 26 | 16.05 | | | |
| Clinical | 4 | 2.47 | 11 | 6.79 | | | 2.75 |
| Anxiety | | | | | 2.52 | 0.11 | |
| Subthreshold | 120 | 74.07 | 33 | 20.4 | | | |
| Clinical | 5 | 3.09 | 4 | 2.47 | | | 0.8 |
| Somatic | | | | | 0.19 | 0.89 | |
| Subthreshold | 119 | 73.46 | 35 | 21.61 | | | |
| Clinical | 6 | 3.7 | 2 | 1.24 | | | 0.34 |
| ADHD | | | | | 6.42 | 0.05 | |
| Subthreshold | 118 | 72.84 | 30 | 18.52 | | | |
| Clinical | 7 | 4.32 | 7 | 4.32 | | | 1 |
| OD | | | | | 27.01 | 0.01 | |
| Subthreshold | 122 | 75.31 | 26 | 16.05 | | | |
| Clinical | 3 | 1.85 | 11 | 6.79 | | | 3.67 |
| Conduct | | | | | 27.28 | 0.01 | |
| Subthreshold | 124 | 76.54 | 28 | 17.28 | | | |
| Clinical | 1 | 0.62 | 9 | 5.56 | | | 8.97 |

Note: Relative risk > 2.0 represents a reliable group difference.

Axis I pathology on the following YSR problem scales (in descending order): Anxiety, Conduct, Attention Deficit/Hyperactivity, Affective, Somatic, and Oppositional Defiant.

Differences on the CBCL between high and low scorers as determined by the BPFSP. As shown in Table 4, boys whose parent-report placed them in the high-BPD trait group reported significantly more CBCL Total Problems and significantly more symptoms for all DSM-oriented scales compared with the low-BPD trait group.

Parents also reported more than six times greater risk for high scorers for Total Problems on the CBCL. High scorers on the BPFSP showed up to up to nine times greater risk for Axis I psychopathology as indexed by the CBCL DSM-oriented problem scales (in descending order): Conduct, Oppositional Defiant, and Affective.

Overall, these findings indicate that BPFSC and BPFSP are robustly associated with Total Problems and DSM-oriented scales on the YSR and CBCL, respectively. In contrast to the broadly elevated risk characteristic of high scorers on the BPFSC and YSR, high scorers on the BPFSP showed elevated risk for disruptive behavioral disorders and mood dysregulation on the CBCL.

Next, we present the results of our investigation into the relationship between borderline features and Axis I pathology across informants.

Association between BPFSC and CBCL. As depicted in Table 4, the BPFSC showed a positive, modest association with parent ratings of Total Problems on the CBCL ($r = .21, p < .05$). In contrast to the strong associations between the BPFSC and DSM-oriented problems, the BPFSC was associated significantly with only one CBCL scale—ADH Problems ($r = .21, p < .05$). This indicates that children rating themselves high in borderline features are perceived by their parents as showing more difficulties regulating their attention, concentration, and arousal.

Association between BPFSP and YSR. The BPFSP showed a positive, moderate association with Total Problems on the YSR ($r = .33, p < .01$). In addition, the BPFSP was associated with all YSR DSM-oriented scales.

Differences on the CBCL between high and low scorers as determined by the BPFSC. As shown in Table 5, high scorers on the BPFSC did not differ from low scorers on the CBCL Total Problems. Nonetheless, these youth were at more than three times the risk of their peers. In addition, high scorers on the BPFSC showed significantly more problems on the Attention Deficit/Hyperactivity Problems of the CBCL (RR = 2.91).

Differences on the YSR between high and low scorers as determined by the BPFSP. As shown in Table 6, high scorers on the BPFSP showed significantly more Total Problems on the YSR (RR = 2.43). In addition, high scorers on the BPFSP are at more than five times the risk for showing Oppositional Defiant Problems on the YSR (RR = 5.64).

Discussion

The current study had two aims: (1) to investigate the cross-informant concordance (child self-report vs. parent-report), and (2) to examine the concurrent validity of a promising new scale to assess borderline features in children and adolescents (BPFSC) by investigating their relationship to clinical and psychosocial functioning as indexed by Axis psychopathology. The above two aims of the study were investigated in a community sample of boys, in the acknowledgment that comparatively fewer studies of juvenile BPD have been carried out in the community and in males (Bondurant et al., 2004; Sharp & Romero, 2007).

In general, our male sample self-reported a similar mean rate of borderline symptoms to that reported in the combined sample of boys and girls in prior research with the BPFSC. Crick et al. (2005) reported average scores ranging from 55.46 to 59.73 across three measurement points over an 18-month interval. With regard to cross-informant concordance on the BPFSC between parents and children we found a modest agreement, which fits with other studies of child psychopathology. The landmark study in this regard (Achenbach et al., 1987) found a .25 rate of agreement between parents and children on measures of behavioral and emotional problems. Small effect sizes between different informants' ratings for both externalizing and internalizing problems in children is the norm (Achenbach et al., 1987; Achenbach, 1991; Sawyer, Baghurst, & Clark, 1992; Biederman, Faraone, Keenan, Steingard, & Tsuang, 1991; Youngstrom, Loeber, & Strouthamer-Loeber, 2000). Whilst some studies (e.g., Youngstrom, Loeber, & Strouthamer-Loeber, 2000) demonstrate agreement across overall level of problems, it is now well known that popular

Table 5. Differences on the CBCL between high and low scorers determined by the BPFSC-C (N = 161)

| Variable CBCL problem scale | Borderline Features group - child report | | | | Pearson χ^2 | p-value | Relative risk |
|-----------------------------------|--|-------|----------------------------|-------|------------------|---------|------------------|
| | Control (N = 128) | | High BPD trait (N = 33) | | | | |
| | Raw | % | Raw | % | | | |
| Total | | | | | 3.36 | 0.07 | |
| Subthreshold | 123 | 96.09 | 29 | 87.88 | | | |
| Clinical | 5 | 3.91 | 4 | 12.12 | | | 3.1 |
| <i>DSM-oriented</i> | | | | | | | |
| Affective | | | | | 0.39 | 0.53 | |
| Subthreshold | 117 | 91.14 | 29 | 87.88 | | | |
| Clinical | 11 | 8.59 | 4 | 12.12 | | | 1.41 |
| Anxiety | | | | | 0.96 | 0.33 | |
| Subthreshold | 122 | 95.31 | 30 | 90.91 | | | |
| Clinical | 6 | 4.69 | 3 | 9.09 | | | 1.94 |
| Somatic | | | | | 1.47 | 0.23 | |
| Subthreshold | 122 | 96.06 | 30 | 90.91 | | | |
| Clinical | 5 | 3.94 | 3 | 9.09 | | | 2.31 |
| ADH | | | | | 4.71 | 0.03 | |
| Subthreshold | 120 | 93.75 | 27 | 81.82 | | | |
| Clinical | 8 | 6.25 | 6 | 18.18 | | | 2.91 |
| OD | | | | | 2.18 | 0.14 | |
| Subthreshold | 119 | 92.97 | 28 | 84.85 | | | |
| Clinical | 9 | 7.03 | 5 | 15.15 | | | 2.15 |
| Conduct | | | | | 2.49 | 0.12 | |
| Subthreshold | 122 | 95.31 | 29 | 87.88 | | | |
| Clinical | 6 | 4.69 | 4 | 12.12 | | | 2.58 |

Note: Relative risk > 2.0 represents a reliable group difference.

psychopathology screening measures in children and adolescents may produce somewhat divergent results in individual cases and for specific item profiles. As demonstrated by Youngstrom, Loeber, and Strouthamer-Loeber (2000), discrepancies among raters may be due to demographic and psychological variables that systematically influence levels of agreements between teacher–parent, parent–child and child–teacher dyads. Discrepancies may also be explained by the ‘situational specificity’ argument, which postulates that different informants provide valid information about functioning in different contexts (Achenbach, 1992; Reynolds & Kamphaus, 1992) and with access to different kinds of information. As such, it is recommended that measures from different informants be treated as independent outcomes that each provide a unique and independent perspective on the child’s functioning.

The significantly higher mean for the BPFSC compared with the BPFSP also fits with studies suggesting that adolescents report many more problems than their parents do about them (Verhulst & van der Ende, 1992). One explanation for this may be that self-reports (especially on measures of personality and internalizing problems) are based on one’s own perceptions and judgments, feelings, and thoughts, while parents can only report based on their observations of the adolescent (Verhulst & van der Ende, 1992).

Table 6. Differences on the YSR between high and low scorers determined by the BPFSP (N = 161)

| Variable YSR problem scale | Borderline Features group - parent-report | | | | Pearson χ^2 | p-value | Relative risk |
|----------------------------------|---|------|----------------------------|-------|------------------|---------|------------------|
| | Control (N = 125) | | High BPD trait (N = 36) | | | | |
| | Raw | % | Raw | % | | | |
| Total | | | | | 8.79 | 0.01 | |
| Subthreshold | 105 | 84 | 22 | 61.11 | | | |
| Clinical | 20 | 16 | 14 | 38.89 | | | 2.43 |
| DSM-oriented | | | | | | | |
| Affective | | | | | 1.68 | 0.2 | |
| Subthreshold | 111 | 88.8 | 29 | 80.56 | | | |
| Clinical | 14 | 11.2 | 7 | 19.44 | | | 1.74 |
| Anxiety | | | | | 1.15 | 0.28 | |
| Subthreshold | 115 | 92 | 31 | 86.11 | | | |
| Clinical | 10 | 8 | 5 | 13.89 | | | 1.74 |
| Somatic | | | | | 0.39 | 0.54 | |
| Subthreshold | 90 | 72 | 24 | 66.67 | | | |
| Clinical | 35 | 28 | 12 | 33.33 | | | 1.19 |
| ADH | | | | | 1.96 | 0.16 | |
| Subthreshold | 109 | 87.2 | 28 | 77.78 | | | |
| Clinical | 16 | 12.8 | 8 | 22.22 | | | 1.74 |
| OD | | | | | 21.75 | 0.01 | |
| Subthreshold | 117 | 93.6 | 23 | 63.89 | | | |
| Clinical | 8 | 6.4 | 13 | 36.11 | | | 5.64 |
| Conduct | | | | | 3.17 | 0.08 | |
| Subthreshold | 109 | 87.2 | 27 | 75 | | | |
| Clinical | 16 | 12.8 | 9 | 25 | | | 1.95 |

Note: Relative risk > 2.0 represents a reliable group difference.

With regard to our investigation into the concurrent validity of the BPFSC, we found highly significant relationships *within* informant type. This is to be expected and may be explained partly by shared method variance. The more powerful analysis of this question is to compare borderline features and Axis I psychopathology *across* informants, thereby sidestepping the problem of shared method variance. In this regard, our findings suggested a stronger relationship between the BPFSC and BPFSP and externalizing problems in boys (compared to total problems or internalizing problems). This finding is in accordance with other studies suggesting a gender differentiation along the same lines. For instance, Crawford et al. (2001) examined dramatic-erratic PD symptoms (e.g., histrionic, narcissistic, and borderline symptoms) and internalizing and externalizing symptomatology in a community sample of over 400 adolescents. These authors report that gender affected the relationship such that PD symptoms in girls were related to internalizing and externalizing symptoms, but in boys PD symptoms were more strongly related with externalizing symptoms.

There are, however, several limitations to this study that warrant discussion. First, demonstrating poor clinical and psychosocial functioning does not in itself support the construct of borderline features in youth. It does, however, demonstrate initial concurrent validity for the BPFSP—that is, if no associations were found with a range of Axis I disorders (in particular externalizing problems, due to the male sample), then one would be certain that the BPFSP has low construct validity.

Another limitation of the current study is that the BPFS was used without adequate clinical cut-offs. That the BPFS has not been validated against clinician or structured-interview diagnosis means that appropriate clinical cut-offs have not been established for this measure. In our study we addressed this issue by taking both a continuous and a categorical approach to data analyses. In addition, in our categorical analyses, we chose a clinical cut-off of the 80th percentile to accommodate the restricted range of responses—given the nature of the sample (community), the data were positively skewed. Once the BPFS has been investigated for its criterion validity, norms will be available which may differ by gender or other demographic factors. It is of crucial importance that both versions of the BPFS are validated against clinician or structured interview diagnosis before this measure can be used reliably in future work.

The current study offers additional validity and reliability information on the BPFS by demonstrating adequate cross-informant reliability and construct validity. Dimensional measures (such as the BPFS) are crucial for furthering our understanding of the development of BPD, in that they allow for the study of heterotypic continuity, i.e., the relationship between BPD at one point in time and continued dysfunction at a later point but with different symptoms (Sharp & Romero, 2007); compared to categorical methods, they may better account for the developmental variability and heterogeneity found among adolescents (Miller et al., 2008). Moreover, dimensional measures can be used in community samples to detect subclinical levels of BPD and be used for longitudinal follow-up studies to track the development of different aspects of the disorder. In clinical samples, they can detect subclinical levels of borderline pathology, so that these at-risk children can be identified and treated at an early stage (Sharp & Romero, 2007).

We conclude that the BPFS shows initial promise, but given the dearth of studies in this area and on this measure in particular, we call for more research to further establish its validity and reliability (as well as the diagnosis of juvenile BPD in general) before recommending its use in clinical services.

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