Hyperbolic temperament and borderline personality disorder

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Abstract

Zanarini and Frankenburg (2007) described the "essential nature" of borderline psychopathology as involving intense and chronic inner pain deriving from a hyperbolic temperament that is mediated through interpersonal behaviors. These interpersonal behaviors can either provoke kindling events that promote the expression of borderline pathology or buffer against borderline symptoms. This study was designed to test this general hypothesis and to articulate both the temperamental and the mediating constructs implicated in this theory more specifically. A questionnaire containing the elements of this theory was administered to non-clinical (N = 545), clinical (N = 316) and treatment (N = 50) samples. Covariance analyses supported a hyperbolic temperament factor and four mediating factors labeled passive, agentic, validation seeking, and detached. Overall, validity correlations conformed to predictions in showing a strong association between hyperbolic temperament and borderline and other forms of personality pathology, and in demonstrating varying relations between the mediating factors with adaptivity, including psychiatric improvements in a treatment trial. The place of this theoretical model of borderline pathology beside other theories that tend to emphasize personality traits or interpersonal patterns are discussed, and clinical implications of the model are highlighted.

The term borderline was coined to describe patients who were difficult to classify and treat (Stern, 1938), and both theoretical variability regarding the conception of this condition and treatment difficulties for borderline patients have persisted since that time. It is likely that treatment prospects would be facilitated by an improved understanding of the disorder. One area of conceptual disagreement has involved the degree to which theorists emphasize temperamental as opposed to environmental or developmental etiological factors. Although differences in emphasis have persisted, many now agree that factors from each of these domains importantly and incrementally influence the development of borderline pathology.

Zanarini and colleagues (Zanarini et al., 2008; Zanarini & Frankenburg, 1994, 1997, 2007) have developed a "complex" model that accounts for both of these domains of influence in an integrative developmental framework. In their model, a hyperbolic temperament which is primarily genetic in origin contributes to a general tendency to experience negative emotions and to "easily take offense and to try to manage the resulting sense of perpetual umbrage by persistently insisting that others pay attention to the enormity of one's inner pain" (Zanarini & Frankenburg, 2007, p. 520). The negative consequences of this temperamental predisposition emerge due to kindling events that vary from normal interpersonal situations to traumatic events. Kindling events involve experiences that heighten arousal and the need for support (see also Linehan, 1993). Greater levels of hyperbolic temperament and more toxic kindling events antecede more severe borderline symptoms. These symptoms may be more or less persistent, depending in part on their nature, in that affective and cognitive symptoms which are perhaps more temperamental in origin tend to be slower to resolve (Zanarini et al., 2007), but also depending on how they are managed in the interpersonal environment.

Thus, this model implies that there are two sets of components driving borderline symptomatology. The first involves a predisposition to chronic and intense inner pain including dysphoric affects and cognitions and the compulsive desire for others to attend to that pain. The second involves the often ineffective methods individuals with a hyperbolic temperament employ to try to manage this predisposition, which usually lead to or interact with symptom-kindling events in the interpersonal environment. This model has considerable potential to parsimoniously conceptualize features that are particular to borderline personality disorder (BPD), link several competing theoretical models of BPD in an integrative framework, and lead to more effective diagnostic and treatment strategies for BPD. However, thus far it has been developed based on reviews of previous research and clinical experience, and direct empirical tests of the model have not been undertaken.

This study is an effort to test this integrative model of BPD by examining the structure and relations of the characteristics hypothesized by Zanarini and colleagues in mixed clinical and non-clinical samples. Items reflecting aspects of the hyperbolic temperament and mediating behaviors were generated according to this theoretical model and administered to three samples varying in clinical status. The resulting questionnaire was then factor analyzed across two relatively large samples varying in clinical severity. Homogeneous dimensions were identified and related to other personality and psychopathology constructs. We hypothesized that a single hyperbolic temperament dimension would be identified which would relate strongly to BPD and other indicators of negative affect and personality pathology. We also hypothesized that other dimensions would reflect interpersonal patterns which would either promote or protect against the kinds of kindling events which provoke the expression of borderline pathology, and that these would vary both in terms of their adaptivity and their nature. For instance, we expected that some might have more to do with personal achievements whereas others might have more to do with personal relationships (Bakan, 1966).

Method

Mary Zanarini identified 48 characteristics that reflected aspects of both the hyperbolic temperament and interpersonal mediators of this temperament according to her two-part theory. These characteristics were translated to self-report items that could be rated on a 1-9 Likert scale (ranging from strongly disagree to strongly agree) termed the *Hyperbolic Temperament Questionnaire* (HTQ). The HTQ was then administered to three samples with the following characteristics.

Student sample

The student sample consisted of 545 students who completed the HTQ and other self-report measures for course credit at a large public university. Seventy-two percent (N = 393) of the students were female, and 98% were between the ages of 18-22 (with the remaining 2% of participants age 23 or older). Most participants were Caucasian (470; 86%). The non-clinical nature of this sample is important because the concepts described in Zanarini's complex model are developmental and should apply to all individuals whether or not they are patients. To facilitate this continuity across covariance analyses of the HTQ items were initiated in this sample and cross-validated to the second, clinical sample.

This sample was administered several other self-report measures for the purposes of deriving criterion variables. The Inventory of Interpersonal Problems-Short Circumplex (IIP-SC; Hopwood et al., 2008; Soldz et al., 1995) assesses a range of interpersonal difficulties on a five-point likert scale (ranging from "not at all" to "extremely" problematic). Its eight scales (Mdn α = .77, range = .66-.83) were summarized as a total interpersonal problems score and vector scores for problems with dominance (vs.

submission) and warmth (vs. coldness). The *Childhood Trauma Questionnaire* (CTQ; Bernstein & Fink, 1998) is a 28-item assessment instrument assessing childhood sexual, physical, and emotional abuse (Mdn α = .81, range = .77-.88). The *Pathological Narcissism Inventory* (PNI, Pincus et al., 2009) is a 52-item measure that assesses seven dimensions of pathological narcissism. We used the total score to represent narcissistic personality pathology in this study (α = .95). The Center for Epidimiological Studies Depression scale (CES-D; Radloff, 1977) is a 20-item measure of depression symptoms (α = .91). The *Personality Diagnostic Questionnaire-4* (PDQ-4; Hyler, 1994) is a 99-item, true/false questionnaire that assesses self-reported symptoms of DSM personality disorders (Mdn α = . 61, range = .41-.67). The Personality Assessment Inventory Borderline Features scale (PAI BOR; Morey, 1991) is a 24-item measure of borderline personality (α = .88).

Clinical Sample

The second sample consisted of 316 patients being followed as part of the McLean Study of Adult Development (MSAD; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005), a longitudinal study of borderline personality disorder. These patients were selected for the MSAD if they were between the ages of 18 and 35, had borderline (77% of baseline sample) or another PD, and were free from mental retardation, serious organic conditions, schizophrenia, schizoaffective disorder, or bipolar I. Most participants were women (77%) and were Caucasian (87%). These patients were administered the HTQ items during years 8 and 10 in this longitudinal study. They were also assessed with the *Revised Diagnostic Interview for Borderlines* (DIB-R; Zanarini, Gunderson, Frankenburg, & Chauncey, 1989), a semi-structured clinical interview that distinguishes individuals with borderline personality pathology from individuals with other personality disturbances, and focuses on four components of BPD: affect, cognition, impulse control, and interpersonal functioning. The interrater kappas for determining clinical status of these DIB-R components in a baseline subsample ranged from .80-.99 (Zanarini, Frankenburg, & Vujanovic, 2002). They also completed the *NEO Five Factor Inventory (NEO-FFI;* Costa & McCrae, 1992), a 60-item self-report measure that assesses the normative personality traits Neuroticism, Conscientiousness, Agreeableness, Extraversion, and Openness to Experience.

Treatment Sample

The third sample consisted of 50 women aged 18-30 (mean = 19.3, S.D. = 1.40) who were recruited to participate in a study on the impact of a psychoeducation intervention on borderline symptoms. Most participants were Caucasian (33; 86%) and most had been or were currently in treatment. Unlike in the clinical sample in which many participants had remitted from BPD at the time of the HTQ assessments, all women in the treatment sample met criteria for BPD according to a semi-structured diagnostic interview. Most of the women in the treatment sample (39, 79%) had a lifetime mood disorder and some had a history of substance use (20, 40%), anxiety (14, 28%), or eating disorders (25, 50%). Potential participants were excluded for lifetime presence of schizophrenia, schizoaffective disorder, or bipolar I disorder, or current substance (non-nicotine) dependence. All participants were interviewed and completed self-report questionnaires including the HTQ and the *Revised Symptom Checklist - 90* (SCL-90; Derogatis, 1977). Thirty women were randomized to the treatment condition and participated in a workshop presentation, the other 20 were randomized to a waitlist condition. All women were followed for 12 weeks and were re-administered the SCL-R0-90 and at follow-up. Results speaking to the impact of this intervention are reported in detail by Zanarini and Frankenburg (2008) although this previous report does not include HTQ or SCL-R-90 data; in general, the workshop was associated with steeper declines in impulsivity and relationship problems characteristic of BPD over time.

Analyses

Analyses occurred in two stages. The first was designed to describe the structure of the items that were expected to reflect hyperbolic temperament and mediating interpersonal behaviors pertinent to BPD, and the second was designed to test the reliability, stability, and validity of the resulting constructs. In the first stage, a principal axis factor analysis was conducted in the undergraduate sample. Multiple extraction criteria were consulted, and the factors were rotated obliquely (oblimin). Items that did not load well on a factor or which loaded similarly on two or more factors were removed. A parallel factor analysis was then conducted in the clinical sample with the remaining items. Tucker congruence coefficients were computed across samples to test the equivalence of identified structures. Items that did not show similar patterns across samples were removed. This led to the identification of the factors that describe the HTQ and the items that comprise those factors.

In the second stage of analyses, items were grouped according to these factor analytic results to create scales that were labeled according to their item content. The internal consistencies of these scales were computed in all three samples and the 2-year stability of these scales was evaluated in the MSAD data. The criterion-related validity of these scales was tested by correlating them with validating measures in all three samples. Finally, the ability of HTQ variables to indicate change was assessed using hierarchical regression in the treatment sample, with baseline SCL-R-90 total scores as the first step, HTQ scores as the second step, and 12-week follow-up SCL-R-90 total scores as the outcome.

Results

The first stage of the analyses involved deriving homogeneous dimensions from the original 48 item pool that would cross-validate from student to patient samples. This was achieved through several steps using the two large (student and clinical) samples. First, a principle axis factor analysis was conducted in the student data. This analysis yielded five factors according to the scree test and Minimum Average Partial (Velicer, 1976) procedure; three additional factors with eigenvalues > 1 were not considered further. Next, items were removed if they did not show strong relations (i.e., pattern coefficients > .30) to any of the derived higher order dimensions or if the two strongest pattern coefficients were very similar (i.e., both > .30). These decisions were important for promoting scale homogeneity and discriminant validity, respectively. A second factor analysis was then conducted in the same sample, and items were again removed for these reasons. This led to a five-factor structure using 33 items, all of which had pattern coefficients > .30 to only one factor. These 33 items were next factor analyzed in the patient data, and five factors were extracted. Tucker congruence coefficients were computed to assess the similarity of the dimensions across samples. These coefficients were acceptable (i.e., > .90) for all but one factor. The items for the unacceptable factor were assessed, and one item was discovered to correlate negatively with the dimension in the patient data whereas it showed a positive correlation in the undergraduate data. This item was removed and the 32 items were again re-factored. All of the items from this analysis had only one pattern coefficient > .30 in both student and patient data, and the all five dimensions had acceptable congruence (i.e., > .90) across student and clinical samples.

These dimensions and their corresponding items are given in Table 1. Based on item composition, the first factor appears to reflect a mix of propensity for and sensitivity to negative affect. Given the consistency of this theme with descriptions of the hyperbolic temperament by Zanarini and colleagues, this factor was labeled *Hyperbolic*. The second factor grouped items involving determination and ambition, and was therefore labeled *Agentic*. The third factor involved passivity, shyness, and timidity, and was labeled *Passive*. The fourth factor described the strong need to share emotional pain with others and be

heard, and was labeled *Validation Seeking*. The fifth factor involved being disconnected from others, and was labeled *Detached*. Notably, this structure was highly congruent with Zanarini et al.'s theory identifying hyperbolic temperament (hyperbolic) and mediating interpersonal factors (agentic, passive, validation seeking, and detached) that vary in their nature and adaptivity.

Having derived the structure of the items designed to operationalize Zanarini's integrative model of BPD temperament and interpersonal factors, items were summed in order to derive scales whose reliability, stability, and validity could be tested. The internal consistencies of these scales were acceptable in the student (hyperbolic = .85, agentic = .84, passive = .80, validation seeking = .78, detached = .68) patient (hyperbolic = .83, agentic = .85, passive = .77, validation seeking = .78, detached = .75), and treatment (hyperbolic = .75, agentic = .86, passive = .83, validation seeking = .85, detached = .64) data. The 2-year stabilities in the patient data were substantial, suggesting both retest reliability and the trait-like quality of these dimensions (hyperbolic = .72, agentic = .73, passive = .69, validation seeking = .63, detached = .65).

These dimensions were next correlated with criterion variables in all three samples to assess their concurrent validity. These results are given in Table 2. Overall, hyperbolic related strongly to a general propensity for neuroticism and psychopathology in general, and somewhat specifically to BPD. For example, it showed a pattern of correlations with five-factor traits that is similar to that of most PDs (Morey et al., 2002): high neuroticism and low extraversion, agreeableness, and conscientiousness. It also showed strong convergence with BPD indicators in the student and clinical samples, in addition to common correlates of BPD including interpersonal problems and childhood emotional neglect and abuse. However, this trait appears to be somewhat nonspecific in that it also related very strongly to depression and several other personality disorders as well, as we expected given our expectation that the nature of hyperbolic temperament would be broad and apply to multiple forms of psychopathology.

The Agentic scale showed negative and more modest correlations with psychopathology. Its strongest correlations were with extraversion and conscientiousness, consistent with classic descriptions of agency (Bakan, 1966) and empirical findings using other measures of this trait (Ansell & Pincus, 2004). It was negatively related to BPD in the MSAD data and unrelated to BPD among students, perhaps suggesting that agency can buffer patients from the effects of BPD, but that this buffering is not necessary or relevant in individuals who do not have the disorder. However, the agentic scale did show a general pattern of adaptivity in the student data, for instance correlating negatively with interpersonal problems, childhood neglect, and some psychopathology constructs.

The Passive scale was also related to neuroticism, extraversion and conscientiousness, but in the opposite directions of agency. This is consistent with previous work suggesting that passivity is the interpersonal opposite of agency (Leary, 1957; Kiesler, 1983). Consistent with this work, passivity showed a strong negative correlation with dominance, while also showing a positive correlation with general interpersonal problems. This trait was mostly unrelated to psychopathology, except that it showed a modest negative relation with antisocial and positive relations with avoidant and dependent personality disorders. This pattern is consistent with previous research using agentic traits to discriminate personality disorders (e.g., Morey, 1985).

Correlations of the Validation Seeking scale with criterion variables suggest that this is a protective factor. It correlated negatively with neuroticism, BPD, interpersonal problems, and several forms of psychopathology. It correlated positively with agreeableness and

negatively with dominance. As such, validation seeking appears to be a somewhat adaptive variant of passive affiliation, perhaps involving the effective use of interpersonal resources to cope with the consequences of a hyperbolic temperament.

The Detached scale appears to indicate maladaptive interpersonal tendencies, as it correlated positively with neuroticism and borderline features, as well as interpersonal problems, childhood abuse and neglect, and several forms of psychopathology. It also correlated negatively with extraversion, agreeableness, and conscientiousness. The most remarkable differences between this scale and the other interpersonal scales involved its strong negative correlation with the love dimension of the IIP and consistent relations with childhood maltreatment variables, suggesting that its distinguishing feature is interpersonal distance and social detachment that may have resulted from toxic early environments.

Finally, HTQ scales were entered into regression models to predict changes in overall psychiatric functioning over the course of a 12-week follow-up period in the treatment sample. As expected, baseline functioning significantly predicted the outcome (R^2 = .42, p < .001; β in final model = .39, p < .05). The HTQ as a block significantly increased variance explained in the outcome (R^2 change = .18, p < .01). Validation Seeking (β = -.37, p < .05) and Detached (β = .25, p < .05) scales incremented baseline functioning to predict outcomes. The other HTQ variables were not statistically significant (Hyperbolic β = .13; Agentic β = -.05; Passive β = .03).

Discussion

This study sought to operationalize the characteristics underlying borderline personality disorder (BPD) as described in a series of theoretical papers by Zanarini and colleagues (1994, 1997, 1998, and 2007) in order to understand the structure and correlates of these characteristics as well as the clinical implications of this model. Overall, the results suggest that the traits comprising Zanarini's integrative model of BPD have a structure and varying relations to criterion variables and clinical outcomes in a manner that is generally consistent with theoretical predictions. One hyperbolic temperament trait appears to represent a risk factor for borderline and other forms of psychopathology and interpersonal dysfunction. Two traits, agency and validation seeking appear to represent adaptive interpersonal characteristics that can buffer against borderline symptoms. Two other traits, passivity and detachment, seem to reflect interpersonal traits that are likely to interact with the environment in a manner that increases symptom severity.

This model appears to have the potential to integrate competing theoretical views on BPD. As described by Zanarini and Frankenburg (2007), previous models have tended to focus on either the temperamental or interpersonal etiological features of BPD. For instance, in Linehan's (1993) model, BPD is understood as a disorder primarily involving emotional dysregulation combined with a lack of effective strategies for managing dysregulated affect. Trait models similarly assert that BPD symptoms derive from largely genetically-influenced predispositions (e.g., Livesley, 2008). Conversely, psychoanalytic models (e.g., Adler & Buie, 1979; Gunderson, 1984; Kernberg, 1975; Masterson, 1972) have tended to implicate interpersonal factors with a particular focus on early relationships. In contrast, the "complex" model proposed by Zanarini and Frankenburg (2007) proposes that both a hyperbolic temperament and kindling environmental events are important for the development of borderline symptoms, and greater emphasis is placed on neither of these contributions. This accommodating perspective is, in fact, consistent with a large body of evidence implicating both stable temperament factors and pathological environmental antecedents in BPD symptoms (Zanarini & Frankenburg, 2007), and with research showing that intense inner pain (Zanrini et al., 1998; Conklin & Westen, 2005) and interpersonal

symptoms (Zanarini, Gunderson, Frankenburg, & Chauncey, 1990) are particularly good markers for distinguishing BPD from other disorders.

Links between this complex model and other theories can also be made at the more specific level of the characteristics identified in this study. For instance, the hyperbolic temperament appears to reflect features of neuroticism posited by trait theorists to represent a core feature of the disorder and which provides a substrate for the emotional dysregulation implicated by Linehan (1993). The protective factor validation seeking, which links Linehan's and Zanarini's models, further suggests that the borderline individual's persistence in seeking the kind of emotional validation from others is a core change agent. Another protective factor, agency, reflects efforts on the part of the borderline person to separate from toxic environments in order to pursue the sorts of successes that could bolster further recovery and improvement. In this way, the individual is in a better position to overcome the abandonment fears that have been linked with the individuation process (Masterson, 1972). However, individuals with a hyperbolic temperament are predisposed due to passive or detached behavior to experience kindling events. Passivity may result from the failure to integrate a stable, consistent identity (Adler & Buie, 1979; Kernberg, 1975) as well as the emotional and behavioral paralysis that derives from chronic failures in validation seeking behavior (Gunderson, 1984). Detachment may be due to failures in finding social supports that emanate from toxic early environments, and may reflect a sort of giving up on the social world for the borderline patient that is in opposition to his heightened need for connection, leaving him feeling empty and believing he is worthless.

Characteristics of the hyperbolic temperament appear to advocate for the clinical utility of validating the emotional experience and interpersonal motives of the borderline patient. It may also be wise to acknowledge that emotional pain is likely to persist. This is important both because it is empirically true (Zanarini et al., 2007), but also because borderline patients are often ambivalent about this pain. On the one hand wishing it gone, it is also central to their identity and has become a medium through which they seek and maintain social relationships. Validating pain is thus deeply empathic in that it respects the desire for pain to persist, a desire which can otherwise be confusing and therefore unproductively "split off" in the borderline experience.

However, in order to effectively balance identity consolidation and support with adaptive behavioral changes, this integrative model would suggest that it is also important to clarify the interpersonal behaviors on the part of the borderline patient that either exacerbate or limit symptom expression. Overall, the results from this study indicate that, in particular, the desire to individuate and develop one's own sense of purpose, as well as behaviors to seek validation from others, deserve particular clarification. Individuation motives can lead to agentic successes that can protect against symptom expression or to failures that lead to a passive disengagement with the world. Similarly, efforts to seek validation can lead to greater emotional regulation, identity consolidation, and the development of supportive relationships, whereas chronic failures in this regard can lead to detachment and disconnection.

It is notable that these patterns of interpersonal behavior and kindling events correspond closely to the dimensions of the interpersonal circumplex, and that previous research shows that individuals with BPD can be distinguished by their conflicts on these dimensions (Hopwood & Morey, 2007). This suggests that the interpersonal patterns of kindling events that promote BPD can be conceptualized in the context of interpersonal models of personality (Pincus, Lukowitsky, & Wright, 2010). Data from this study suggest that in particular, elements of the communal dimension of the interpersonal circumplex appear to be important for treatment, in that patients in the treatment study who were able to

effectively seek and obtain validation rather than being interpersonally detached improved more in a brief treatment trial than those who were unable to make use of positive aspects of the social environment.

This study had several limitations, most notably including that it primarily used self-report measures to provide a relatively limited test of the predictions that follow from this complex model. As such, future multi-method research should explore the developmental and clinical implications of this framework for understanding BPD. Future research should also test the convergence and divergence of the constructs identified in this study with existing personality and psychopathology constructs. For example, future research that focuses on potential empirical differences between hyperbolic temperament as describe by Zanarini and neuroticism, a trait implicated to be at the core of borderline personality from a five-factor model perspective, would be informative. Given some of the limitations of the measure used to represent this complex theory (e.g., limited number of items for some scales), future research should also aim to further the assessment of the constructs identified here. It might also be useful, as a more conservative test of the theory, to have experts other than Zanarini generate item content. Further, it would be clarifying to employ similar strategies in describing other complex psychological systems. In particular, conceptual models such as this one that explicitly separate variables that directly promote symptoms from variables that mediate the expression of symptoms given a predisposition should be given careful consideration given their potential to clarify and increase the clinical utility of nosological frameworks for personality and other forms of psychopathology (Hopwood et al., in press).

In summary, this research furthers the articulation of an integrative model of the essential nature of borderline psychopathology by implicating two sets of factors pertinent to its development and expression. The first involves a hyperbolic temperament which is a stable disposition and leads to the often ineffective use of social resources for emotional regulation and support. Greater severity of hyperbolic temperament is linearly related to the likelihood of BPD diagnosis. The second involves environmental mediators which range in their adaptivity and can be organized around the fundamental dimensions of interpersonal behavior, agency and communion (Bakan, 1966; Wiggins, 1991). Agentic successes can lead to effective individuation and self-confidence as well as practical achievements that might protect against the potential for future stresses to lead to symptoms, whereas failures can lead to passivity and poor self-efficacy, which can exacerbate emotional pain and maladaptive coping strategies. Communal successes can satisfy the need for validation of the inner pain that results from a hyperbolic temperament and thus limit the potential that this temperament could lead to symptoms. Conversely, interpersonal failures can lead to detachment and aloofness, which may limit the potential for borderline patients to make effective use of interpersonal resources.

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Table 1

Items and pattern coefficients for the Hyperbolic Temperament Questionnaire in non-clinical and clinical samples.

Scale		Pattern Coefficient	
	Item	Students	Patients
Hyperbolic			
1	My feelings are very easily hurt	.78	.75
2	I have a great deal of trouble letting things go	.62	.63
3	I am a fretful person	.57	.40
4	I am often fearful or frightened	.59	.45
5	I often make a big deal out of things	.50	.35
6	I am a very sensitive person	.69	.56
7	I cannot forget my pain or problems	.60	.63
8	I frequently feel that people are insensitive to my feelings	.45	.50
9	I get upset very easily	.69	.60
10	I am deeply attached to my past and its painful memories	.52	.42
11	I am a nervous or anxious person	.61	.54
Agentic			
12	I am a determined person	.73	.62
13	I really want to get ahead	.55	.58
14	I am very focused on my goals	.80	.78
15	I am very ambitious	.76	.76
16	I do not have a lot of initiative or get up and go (R)	-.46	-.46
17	I am a very persistent person	.43	.54
18	I feel driven to succeed	.85	.78
Passive			
19	I am passive by nature	.51	.44
20	I am an assertive person (R)	-.66	-.62
21	I am a shy person	.52	.53
22	I am an aggressive person (R)	-.58	-.44
23	I usually stick up for myself (R)	-.59	-.46
24	I have a timid nature	.56	.63
25	I have no hesitation in trying to get what I want or need (R)	-.44	-.25
Validation Seeking			
26	I often insist that people listen to my problems	.70	.75
27	People have said that I am very demanding	.50	.41
28	I frequently try to get others to pay attention to my pain	.78	.71
29	I will do almost anything to let people know the depth of my suffering	.61	.71
30	I tend to exaggerate my problems	.56	.67
Detached			
31	I am a loner	.65	.73
32	I prefer to spend my free time alone	.63	.69

Note. Full pattern matrices available upon request.

Table 2

Correlations of hyperbolic temperament questionnaire scales with criterion variables in clinical, student, and treatment samples.

	Hyperbolic	Agentic	Passive	Validation Seeking	Detached
		Clinical Sample			
NEO-FFI Neuroticism	**.779**	**-.415**	**.383**	**-.301**	**.390**
NEO-FFI Extraversion	**-.495**	**.491**	**-.434**	.091	**-.593**
NEO-FFI Openness	-.075	.135	-.102	.069	-.067
NEO-FFI Agreeableness	**-.307**	-.025	.146	**.389**	**-.254**
NEO-FFI Conscientiousness	**-.357**	**.532**	**-.224**	.199	**-.223**
DIB-R Borderline Symptoms	**.631**	**-.278**	.156	**-.311**	**.285**
		Student Sample			
IIP Total	**.587**	**-.316**	**.367**	**-.370**	**.376**
IIP Dominance	-.156	.023	**-.594**	**-.402**	-.119
IIP Warmth	.000	.152	.041	-.025	**-.412**
PNI Narcissism	**.486**	-.068	.074	**-.456**	**.224**
PAI Borderline	**.586**	**-.265**	.021	**-.344**	**.300**
CES-D Depression	**.524**	**-.287**	.134	**-.251**	**.341**
CTQ Sex Abuse	.080	-.135	.006	-.137	.102
CTQ Physical Abuse	.094	-.193	-.023	-.164	.182
CTQ Emotional Abuse	**.204**	-.158	-.030	-.099	**.206**
CTQ Emotional Neglect	**.232**	**-.298**	.072	-.083	**.310**
CTQ Physical Neglect	.104	**-.260**	.032	-.129	**.236**
PDQ Antisocial	**-.277**	.132	**-.371**	.160	-.051
PDQ Avoidant	**.633**	**-.203**	**.394**	**-.244**	**.295**
PDQ Dependent	**.477**	**-.259**	**.248**	**-.325**	.147
PDQ Histrionic	**.282**	.024	-.126	**-.440**	-.055
PDQ Narcissistic	.188	.014	-.081	**-.397**	.088
PDQ Borderline	**.529**	-.186	.022	**-.354**	**.249**
PDQ Obsessive-compulsive	**.338**	.114	.117	**-.211**	.153
PDQ Paranoid	**.387**	-.046	-.096	**-.222**	.166
PDQ Schizoid	.181	-.156	.053	.046	**.484**
PDQ Schizotypal	**.294**	-.099	.043	-.177	**.302**

	Hyperbolic	Agentic	Passive	Validation Seeking	Detached
			Treatment Sample		
SCL-R-90	**.508**	.261	-.155	**-.344**	**.329**

Note. Coefficients > .30 are in bold. Because of large sample sizes in Clinical and Student samples, very small coefficients were able to achieve statistical significance even at conservative Type I error rates (e.g., p < .001), so statistical significance is not indicated. NEO-FFI = NEO Five Factor Inventory. DIB-R = Revised Diagnostic Interview for Borderlines. IIP = Inventory of Interpersonal Problems. PNI = Pathological Narcissism Inventory. PAI = Personality Assessment Inventory. CES-D = Center for Epidemiological Studies Depression Scale. CTQ = Childhood Trauma Questionnaire. PDQ = Personality Diagnostic Questionnaire. SCL-R-90 = Revised Symptom Checklist 90.