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Exploratory factor analysis of borderline personality disorder criteria in monolingual Hispanic outpatients with substance use disorders†

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Abstract

This study examined the factor structure of the DSM-IV criteria for borderline personality disorder (BPD) in Hispanic patients. Subjects were 130 monolingual Hispanic adults who had been admitted to a specialty outpatient clinic that provides psychiatric and substance abuse services to Spanish-speaking individuals. All were reliably assessed with the Spanish-Language Version of the Diagnostic Interview for DSM-IV Personality Disorders. After evaluating internal consistency of the BPD criterion set, an exploratory factor analysis was performed using principal axis factoring. Results suggested a unidimensional structure, and were consistent with similar studies of the DSM-IV criteria for BPD in non-Hispanic samples. These findings have implications for understanding borderline psychopathology in this population, and for the overall validity of the DSM-IV BPD construct.

Keywords

Cultural factors; Latino; Principal axis factoring

1. Introduction

For well over a quarter century, considerable attention has been focused on refining the “borderline” construct. Based in part on the work of Gunderson and Singer (1975) and Spitzer and colleagues (1979), DSM-III (American Psychiatric Association [APA], 1980) subdivided this area of psychopathology into borderline and schizotypal personality disorders. Despite this refinement—and despite subsequent adjustments to the diagnostic criteria in DSM-III-R (APA, 1987) and DSM-IV (APA, 1994)—the borderline personality disorder (BPD) construct remains heterogeneous (Sanislow and McGlashan, 1998). This heterogeneity is partly inherent in the polythetic nature of the diagnosis (Skodol et al., 2002). In addition, patients with BPD comprise a heterogeneous group, often manifesting a wide variety of comorbid axis I and axis II disorders (Oldham et al., 1992, 1995). Such

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heterogeneity has been variously interpreted as demonstrating poor validity of the BPD construct and also as being one of its strengths (Clifton and Pilkonis, 2007).

One approach to examining this clinical heterogeneity has been through factor analytic techniques. Factor analysis can empirically identify meaningful components or latent elements within a diagnostic construct. Several such studies, utilizing DSM criteria for BPD, have been reported (Rosenberger and Miller, 1989; Clarkin et al., 1993; Fossati et al., 1999; Sanislow et al., 2000; Whewell et al., 2000; Sanislow et al., 2002; Johansen et al., 2004; Becker et al., 2006; Clifton and Pilkonis, 2007). One study used DSM-III criteria in college students (Rosenberger and Miller, 1989), one used DSM-III-R criteria in adolescent inpatients (Becker et al., 2006), four utilized DSM-III-R criteria in adult patients (Clarkin et al., 1993; Sanislow et al., 2000; Whewell et al., 2000; Clifton and Pilkonis, 2007), and three studied DSM-IV criteria in adult patients (Fossati et al., 1999; Sanislow et al., 2002; Johansen et al., 2004).

Three studies in adult populations—all of which used confirmatory factor analysis—were consistent with a unidimensional construct (Fossati et al., 1999; Johansen et al., 2004; Clifton and Pilkonis, 2007). Other adult studies, however, have suggested multiple dimensions. Rosenberger and Miller's (1989) exploratory factor analysis revealed two factors—the first including interpersonal and identity criteria, and the second encompassing dysregulation of behavior and affect. Because most of the criteria loaded on both factors, however, these authors suggested that the BPD criteria could not be clearly distinguished by these underlying factors. Whewell and colleagues (2000) used exploratory methods to identify two factors—roughly corresponding to the impulsive and borderline subtypes of ICD-10 emotionally unstable personality disorder. Clarkin and colleagues' (1993) exploratory analysis revealed three factors—disturbed identity and interpersonal relationships, affective dysregulation (including suicidality), and impulsivity. Sanislow and colleagues (2000) also used exploratory methods and DSM-III-R criteria, but found three somewhat different factors—disturbed relatedness, behavioral dysregulation, and affective dysregulation. Using DSM-IV criteria and a separate sample, Sanislow and co-workers (2002) attempted to validate this three-factor model via confirmatory factor analysis. Although these authors noted that a unitary construct provided a good fit with their data, the three-factor model was significantly better. Our own exploratory study of adolescents revealed four factors that differ from those reported in the adult studies, suggesting that developmental processes may affect the underlying structure of BPD (Becker et al., 2006). Inasmuch as these components may reflect core dimensions of borderline psychopathology, this type of analysis has important theoretical and clinical implications (Skodol et al., 2002).

The aim of this study was to examine the factor structure of the DSM-IV criteria for BPD in individuals who had been reliably assessed with semistructured interviews, and to do so with a study group of monolingual Hispanic patients. Subjects were Hispanic outpatients receiving mental health and addiction services in a community-based program. Because research in this area of psychopathology has consistently documented the co-occurrence of BPD with substance use disorders (Grilo et al., 1997; Skodol et al., 1999), we felt that this study group would represent a population in which BPD is clinically relevant.

By using a Hispanic group, we hoped to contribute to a small body of literature on personality pathology in the nation's largest, and fastest growing, minority population. While considerable research has documented frequency differences by ethnicity for a broad range of psychiatric disorders (Baskin et al., 1981; Adams et al., 1984; Karno et al., 1987), very few have made comparisons that included Hispanic subjects and the BPD diagnosis. Although one such study found no differences between Hispanics and other ethnic groups (Castaneda and Franco, 1985), another study found a higher rate of BPD among Hispanic

subjects (Chavira et al., 2003). Potential explanations for the latter finding include the negative psychological effects of acculturation, as well as diagnostic bias due to language or cultural differences (Baskin et al., 1981; Chavira et al., 2003). Beyond these studies of disorder frequency, many have argued that culture—which, in part, can be seen as the shared values, beliefs, and attitudes of a group—will affect both personality development and the clinical phenomenology of mental illness (Marsella, 1988; Sundbom et al., 1998). While some studies have demonstrated that the underlying structure of personality is similar across cultures (McCrae and Costa, 1997)—and between Hispanic and non-Hispanic cultures in particular (Benet-Martínez and John, 1998)—one study has suggested that cultural factors may be an important determinant of personality pathology within Hispanic populations (Gibbs, 1982). And, indeed, there are aspects of Hispanic (or Latino) culture which may be relevant to the structure of BPD and other personality disorders (Long and Martinez, 1997; Benet-Martínez and John, 1998; Grilo et al., 2003).

In particular, the cultural psychology literature has documented that, compared to non-Hispanic Anglo groups, Hispanic/Latino groups tend to be less individualistic, and subscribe to a set of cultural values that are believed to play a significant role in their lives (Comas-Díaz, 1996). These values include *confianza* (trust and intimacy in a relationship), *personalismo* or *simpatía* (valuing interpersonal harmony, relating to others on a personal level, and the avoidance of interpersonal conflict), and *familismo* (placing a strong emphasis on the importance of family as the center of one's experience, and on the primacy of collective over individual values). Finally, Hispanic culture has been characterized as having distinct gender-role expectations, such as *machismo* for men and *marianismo* for women (Andrés-Hyman et al., 2006). Given their importance in Hispanic populations, researchers have recommended that these values be understood and utilized in clinical work with Latino groups (Bracero, 1998; Falicov, 1998; Santiago-Rivera et al., 2002; Añez et al., 2005; Andrés-Hyman et al., 2006; Añez et al., 2008).

2. Method

2.1 Subjects

Subjects were 130 monolingual (Spanish-speaking only) Hispanic adults evaluated at a community-based, outpatient psychiatric clinic. This clinic, which is located within a larger community mental health center, provides services only to monolingual Hispanic adults and has a specialty focus on the aftercare treatment of substance abuse. The study group consisted of a nearly consecutive series of patients assigned to a particular treatment team within the clinic. Assignment to this team was not determined by clinical, demographic, or financial considerations, but rather by case flow. All subjects had a clinically-derived lifetime diagnosis of an alcohol use disorder, and approximately three-quarters had a lifetime diagnosis of an additional substance use disorder. At the time of evaluation, all had been abstinent from substances for a minimum of 60 days. Patients were excluded from the study if they had mental status impairments that could preclude valid assessment (e.g., acute symptoms of psychosis).

Of the 130 subjects, 90 (69%) were male, and 40 (31%) were female. The mean age was 37.4 years (SD = 10.5), and 76 (58%) were married. Sixty-six percent of subjects were originally from Puerto Rico. The remaining subjects had a range of origins—16% from Mexico, 4% from Central America, 2% from the United States, 1% from South America—and about 10% either originated elsewhere or information was not obtained. The mean period of U.S. residence was 12.2 years (SD = 9.3). After complete explanation of study procedures, and prior to initiating the interviews, written informed consent was obtained in Spanish from all subjects.

2.2 Procedures and assessments

The Spanish-Language Version of the Diagnostic Interview for DSM-IV Personality Disorders (S-DIPD-IV; Grilo et al., 2003) was administered to all subjects. The S-DIPD-IV —like the original, English-language version of the DIPD-IV (Zanarini et al., 1996)—is a semistructured diagnostic interview that assesses for all DSM-IV personality disorders and criteria. The development of the S-DIPD-IV, through a process of translation and back-translation, and the analysis of its reliability are described elsewhere (Grilo et al., 2003). The S-DIPD-IV requires that criteria must be present and pervasive for at least two years, and that they must be characteristic of the person during adulthood. The semistructured interview was administered by experienced, bilingual Hispanic, doctoral-level research clinicians. Final research diagnoses were established by the "best estimate" method, based on the S-DIPD-IV and on any additional relevant data from the clinical record, following the LEAD (longitudinal, expert, all data) standard (Pilkonis et al., 1991).

Interrater reliability of S-DIPD-IV diagnoses was evaluated using pairs of independent ratings for 27 randomly-selected taped assessments. Kappa coefficients for the personality disorders were generally acceptable (M = 0.83; SD = 0.16). Interrater reliability for the BPD diagnosis, in particular, was high (κ= 0.91). Kappa coefficients were also acceptable for the individual BPD criteria (M = 0.71; SD = 0.19).

2.3 Statistical analysis

Correlational analyses examined the associations between the DSM-IV criteria for BPD, and internal consistency of the criterion set was evaluated by Cronbach's alpha coefficient (1951). Then an exploratory factor analysis was performed on the BPD criteria, using principal axis factoring (Norusis, 1994; Fabrigar et al., 1999; Costello and Osborne, 2005).

3. Results

Frequencies for all the DSM-IV personality disorders, within this study group, are provided in Table 1. BPD was diagnosed in 39 (30%) of the subjects.

Coefficient alpha for the BPD criterion set was 0.89, suggesting adequate internal consistency. The coherence of the criterion set is further supported by the strength of the intercorrelations among the individual BPD criteria, shown in Table 2. Here, it is evident that all criteria were significantly correlated with all other criteria.

Results of the principal axis factoring are shown in Table 3. The Kaiser-Meyer-Olkin measure of sampling adequacy (0.88) and Bartlett's test of sphericity (χ^2 = 522.8, *df* = 36, *P* < 0.001) indicated that the data were appropriate for factor analysis. Examination of the scree plot suggested a unidimensional structure, and this one-factor solution accounted for 53% of the total variance.

4. Discussion

Our exploratory factor analysis of the DSM-IV criteria for BPD contributes to a growing literature on the latent structure of BPD—and also contributes to a small, but important, literature on BPD within Hispanic populations. To our knowledge, this is the first study to examine the factor structure of BPD within a Hispanic study group. The factor analysis produced a unidimensional solution. This solution was suggested by examination of the scree plot—and had the additional advantages of being parsimonious and of being consistent with previous factor analytic studies of the DSM-IV criteria for BPD. There have been three such studies—all of which employed semistructured interviews, and all of which used confirmatory factor analytic methods (Fossati et al., 1999; Sanislow et al., 2002; Johansen et

al., 2004). The studies by Fossati and colleagues (1999) and Johansen and colleagues (2004) both were consistent with a unidimensional construct. In their study, Sanislow and co-workers (2002) found that a unitary construct provided an adequate fit with their data, but that a three-factor model was better. Differences between our findings and those of Sanislow and co-workers may be attributable to differences in diagnostic instruments, likely differences in comorbidity and clinical severity, differing sampling and selection procedures, and the relatively unique socio-cultural profile of our study group.

With regard to this latter point, it is certainly possible that our findings concerning BPD factor structure were influenced by cultural context. Others have commented on the possible role of culture in shaping the impulsive and aggressive elements of BPD (Millon, 1987; Critchfield et al., 2004). Culture-based values, such as the primacy of interpersonal affiliations, may be challenged by immigration to the U.S. (Long and Martinez, 1997; Benet-Martínez and John, 1998; Grilo et al., 2003). These cultural predispositions and stressors may influence the shape of personality development in Hispanic immigrants, and may also serve as a nidus for the particular forms taken by personality pathology in this population. It is important to emphasize, however, that—in observing a unidimensional structure for the DSM-IV BPD criteria in Hispanic patients—our findings were largely congruent with findings drawn from non-Hispanic samples. That our observations occurred within cultural and clinical contexts that are distinct from those of previous studies tends to support the construct validity of this criterion set.

Our study has several limitations. First, our findings pertain to monolingual Hispanic psychiatric outpatients with substance use disorders. Generalizability is therefore potentially limited, and our results may not be applicable to other sociodemographic contexts, to community settings, or to other types of clinical settings. Nonetheless, we note that our findings are relevant to the clinical population from which our study group was drawn; BPD is frequently present in persons with substance use disorders (Grilo et al., 1997), and substance use disorders are common in individuals who present with BPD (Skodol et al., 1999). As there are no prior studies of BPD factor structure in either substance abusing or in Hispanic samples, however, it is not possible to determine the extent to which our findings may be more reflective of our study group's predominant axis I comorbidity or its culture. Along this line, it should also be noted that most of our subjects originated from Puerto Rico. Future studies will need to consider Hispanic groups of different origins, and will need to use study groups that vary from ours in their length of time in the U.S. and degree of acculturation. Finally, our assessments were limited to one point in time. Longitudinal studies are needed to understand the evolution of BPD structure in individuals over time, and the potential ways in which borderline pathology interacts with changes in cultural context.

Despite these limitations, some conclusions can be drawn from the data. Our exploratory factor analysis of BPD in monolingual Hispanic patients yielded results that are consistent with findings in non-Hispanic samples, suggesting that the underlying structure of this disorder may be consistent across cultural contexts. Specifically, we found evidence for a unidimensional structure, which—along with findings from other studies of the DSM-IV criteria for BPD—supports the construct validity of this criterion set. While the size of our female subgroup, in particular, did not allow us to analyze BPD factor structure separately by gender, future studies should explore this issue. Although the question of whether BPD factor structure may vary by gender is one of general importance (Whewell et al., 2000), it may be especially relevant to Hispanic populations, given the distinct gender-role expectations observed within this culture (Andrés-Hyman et al., 2006).

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Table 1

Frequencies of DSM-IV Personality Disorders in 130 Hispanic outpatients with substance use disorders

Personality Disorder	N	%
Paranoid	16	12
Schizoid	2	2
Schizotypal	6	5
Antisocial	17	13
Borderline	39	30
Histrionic	4	3
Narcissistic	4	3
Avoidant	34	26
Dependent	19	15
Obsessive-compulsive	34	26

Table 2

Intercorrelations between DSM-IV BPD criteria in 130 Hispanic outpatients with substance use disorders

	Correlation (*r*)							
BPD criterion	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
1. Abandonment fears	--							
2. Unstable relationships	0.33 ***	--						
3. Identity disturbance	0.40 ***	0.35 ***	--					
4. Self-destructive impulsivity	0.20 *	0.60 ***	0.34 ***	--				
5. Suicidality or self-injury	0.37 ***	0.45 ***	0.49 ***	0.49 ***	--			
6. Affective instability	0.38 ***	0.41 ***	0.43 ***	0.44 ***	0.52 ***	--		
7. Feelings of emptiness	0.43 ***	0.38 ***	0.59 ***	0.36 ***	0.51 ***	0.62 ***	--	
8. Inappropriate anger	0.35 ***	0.48 ***	0.49 ***	0.50 ***	0.46 ***	0.63 ***	0.58 ***	--
9. Paranoia or dissociation	0.52 ***	0.40 ***	0.59 ***	0.42 ***	0.56 ***	0.60 ***	0.56 ***	0.48 ***

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$. (All tests are two-tailed.)

Table 3

Principal axis factoring for DSM-IV BPD criteria in 130 Hispanic outpatients with substance use disorders

BPD criterion	Factor loading [a]
Abandonment fears	0.53
Unstable relationships	0.61
Identity disturbance	0.68
Self-destructive impulsivity	0.60
Suicidality or self-injury	0.71
Affective instability	0.75
Feelings of emptiness	0.75
Inappropriate anger	0.73
Paranoia or dissociation	0.77

[a] Eigenvalue = 4.75; percent of variance = 53%.