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Multiple cluster axis II comorbidity and functional outcome in severe patients with borderline personality disorder

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Background. Current literature suggests that personality disorder comorbidity negatively contributes to both the severity and prognosis of other disorders; however, little literature has been devoted to its influence on borderline personality disorder (BPD). The objective of the present work is to study comorbidity with other personality disorders in a severe clinical sample of patients with BPD, and its relationship with global functionality.

Methods. A sample of 65 patients with severe borderline personality disorder was included in the study. Clinical and functionality measures were applied in order to study comorbidity of BPD with other disorders and its relationship with functionality. Associations with other comorbid PDs were analyzed with t-tests and linear correlations.

Results. Most patients (87%) presented comorbidity with other PDs. Almost half of the sample (42%) presented more than two PDs, and cluster A (paranoid) and C (obsessive and avoidant) PD were more frequent than cluster B (histrionic and antisocial). Only the presence of avoidant PD predicted a worse functional outcome in the long term (U Mann Withney p<0.01).

Conclusions. Severely impaired BPD patients present greater comorbidity with cluster A and C PDs. Comorbid avoidant personality disorder might negatively predict for prognosis.

Keywords: Borderline personality disorder, Comorbidity, Functional outcome, Severity

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Comorbilidad con el eje II y funcionalidad en pacientes graves con trastorno límite de la personalidad

Introducción. La literatura actual sugiere que la comorbilidad en los trastornos de la personalidad (TP) afecta a la gravedad y al pronóstico de otros trastornos. Sin embargo, existe poca literatura respecto al trastorno límite de la personalidad (TLP) en concreto. El objetivo de este trabajo es estudiar la comorbilidad con otros trastornos de personalidad en una muestra de pacientes graves con TLP, y la relación de esta comorbilidad con su funcionamiento global.

Metodología. Se incluyó en el estudio una muestra de 65 pacientes con TLP grave. Se administraron cuestionarios clínicos y de funcionalidad para estudiar la comorbilidad del TLP con otros trastornos y su relación con la funcionalidad. Se analizaron las asociaciones con otros TP comórbidos a través de correlaciones lineares y de test t.

Resultados. La mayoría de los pacientes (87%) presentaron comorbilidad con otros TP. Casi la mitad de la muestra (42%) presentó más de dos TP, y los incluidos en los clústeres A (paranoide) y C (obsesivo y evitativo) fueron más frecuentes que el clúster B (histriónico y antisocial). Sólo la presencia del TP evitativo predecía una peor funcionalidad a largo plazo (U Mann Withney p<0.01).

Conclusiones. Los pacientes con TLP grave presentan una mayor comorbilidad con los TP de los clústers A y C. El trastorno de personalidad por evitación puede predecir el pronóstico del trastorno de manera negativa.

Palabras clave: Trastorno límite de la personalidad, Comorbilidad, Funcionalidad, Gravedad

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INTRODUCTION

Borderline personality disorder (BPD) is included in the axis II of the Diagnostic and Statistical Manual of Mental Disorders-Revised version (DSM-IV-TR)[1] and in Section II of Personality Disorders (Cluster B) of the recent DSM-5[2]. It is described as a severe mental condition characterized by a highly dysfunctional affective instability, impulsive behaviors, self-injury or instable interpersonal relationships. The prevalence in the general population is estimated to be between 3% and 7%[3-5]. Borderline personality disorder comprises close to 26% of personality disorders[6] and causes considerable morbidity and mortality during young adulthood.

Due to the complexity of the disorder, a diagnosis of BPD is often made incorrectly[7-10]. Comorbidity with axis I and II disorders is among the factors that lead to errors in differential diagnosis and misdiagnosis with other mental disorders or personality disorders (especially bipolar and antisocial personality disorder)[10-12].

Comorbidity between personality disorders and all subtypes of anxiety disorders (ranging from 35% in PTSD to 52% in OCD) and mood disorders (over 90%) is high[13,14]. Axis II comorbidity seems to negatively influence the course and prognosis of the aforementioned axis I disorders[15,16] and could be a risk factor for chronicity in depression[17]. Similarly, BPD is usually comorbid with axis I disorders, particularly anxiety, mood disorders, and substance use disorders[18-21]. Among PDs, borderline personality disorder and schizotypal personality disorder (SPD) have greater rates of comorbidity with axis I disorders than any other personality disorders[18].

Considering axis I comorbidity has an influence in the functional outcome of patients with BPD[9] a similar influence could be expected for axis II comorbidity in BPD patients. In fact, if axis II comorbidity has been shown to contribute negatively to both the severity and prognosis of axis I disorders[18], it should be expected to negatively contribute to the therapeutic outcome of BPD. Given the scarcity of studies investigating this relationship since 1998[20], the present study has been designed to specifically investigate the role of axis II comorbidity in the level of functioning of a sample of patients with severe BPD.

METHODS

A total of 65 patients with a diagnosis of severe borderline personality disorder according to DSM-IV-TR criteria measured through SCID-II[22] were included in the present study. All participants were recruited from a day-care hospital for personality disorders. The sample was made of severely affected patients remitted to the day-hospital for intensive psychosocial treatment after previous failed treatment attempts at their mental health centers. All the patients were attending usual treatment at the day hospital for personality disorders, including biweekly group sessions of mentalization-based therapy, dialectical behavioral therapy, occupational therapy, psychoeducation, and nursing and weekly individual sessions based on transference focused therapy.

Inclusion criteria for the study included: 1) Age between 18 to 53 years; 2) Clinical Global Impression (CGI-BPD clinician rated) score above 4; and 3) Global Assessment Functioning (GAF) score below 60. Exclusion criteria included: 1) Severe physical conditions, such as organic brain syndrome or neurological disease; 2) Intelligence Quotient IQ below 85; 3) currently presenting major depressive disorder (MDD) or substance abuse; 4) lifetime diagnosis of schizophrenia or bipolar disorder.

All subjects received information about the study and were provided written informed consent before they were enrolled.

Measurements

A cross-sectional evaluation of personality disorders and personality features was conducted by experienced psychiatrists and psychologists (ranging from 8 to 40 years of experience) at baseline before treatment was initiated:

a) Diagnostic interview:

- The Structured Clinical Interview for DSM-IV Axis II Personality Disorders, (SCID-II) is a semi-structured interview for making DSM-IV Axis II Personality Disorder diagnoses[22].
- Revised Diagnostic Interview for Borderlines (DIB-R) is a diagnosis test which identifies four behavior patterns peculiar to BPD: abandonment, engulfment, annihilation fears; demandingness and entitlement; treatment regressions; ability to arouse inappropriately close or hostile treatment relationships[23].

b) Clinical severity and functioning assessment:

- Clinical Global Impression Scale for BPD (CGI-BPD) is an adaptation of the Clinical Global Impression (CGI) scale designed to assess severity and post-intervention changes in patients with BPD[24].
- Global Assessment Functioning (GAF) assigns a clinical judgment to the individual's overall functioning level, including psychological, social and occupational/school functioning[25].

c) Dimensional Personality Assessments:

- The Zuckerman-Kuhlman Personnality Questionnaire (ZKPQ) measures a constellation of personality traits: sociability, neuroticism-anxiety, impulsive sensation seeking, aggression-hostility, and activity[26].

- Barratt Impulsivity Scale (BIS) is a questionnaire designed to assess the personality/behavioral construct of impulsiveness[27].

d) Clinical variables:

- Hamilton Anxiety Rating Scale (HARS) measures the severity of anxiety symptoms. The scale consists of 14 items and measures both psychic anxiety and somatic anxiety[28].
- Montgomery-Asberg Depression Rating Scale (MADRS) is a semi-structured interview designed to measure the severity of depressive symptoms[29].

A sociodemographic protocol was added including duration of the disease, gender, educational level, occupational status, and pharmacological treatment. Both Global Assessment of Functioning (GAF) and Clinical Global Impression (CGI-BPD) scores were chosen as principal outcome measures and were rated at baseline and after 6 months of treatment at the day care hospital. The study was conducted in accordance with the ethical principles of the Declatarion of Helsinki. Approval of the Ethical Committee of the Hospital Clinico San Carlos was obtained for this study.

Statistical Analysis

All analyses were performed with the Stata/SE12.0 (StataCorp, 2011) and all hypotheses were tested with a two-sided significance level of .05. Descriptive statistics for categorical data are reported as percentages (N) and summaries of continuous data are reported as means (χ) and standard deviations (SD).

Analysis of clinical variables associated to specific comorbid axis II disorders were evaluated by means of t-tests multiple comparisons. Quantitative analysis of outcome associated to each personality dimension (number of criteria met for every PD) was calculated with the use of linear correlation tests. No adjustment has been carried out on the statistical significance level.

RESULTS

A total of 65 participants were evaluated. Regarding the sex of the sample, 75% (n=49) were female and 25% (n=16) were male, (average age was 31, S.D. 7 years) (Table 1). Most patients (58%) were not functionally active at the time of initiating the study (18% failed students, 18% in long sick leave and 22% unemployed). The average clinical severity of the sample was high (CGI-BPD score >4; χ=4.9) and the degree of psychosocial functioning was considerably low (GAF score lower than 60). Nearly all patients (94%) (n=61) were medicated: 87% (n=53) with antidepressants, 69% (n=42) with benzodiazepines, 54% (n=33) with antiepileptic and 54% (n=33) with antipsychotic (Table 1).

No differences in age or sex distribution were found amongst the different comorbid personality disorders, except for narcissistic personality disorders, in which the prevalence was greater in males (p<.05).

Only 8 subjects had the diagnosis of borderline personality disorder with no other comorbid PD. The rest of the sample (n=57) had at least one comorbid personality disorder, with 48% of the sample presenting between 2 and 4 comorbid personality disorders. Since the interview for diagnosis and personality disorders comorbidity was SCID-II interview, depressive and passive-aggressive personality disorders were also included in the study for the sake of completeness, even if they are not included in DSM-V anymore. The most frequent axis II comorbidity in these patients with BPD was depressive personality disorder (64%; n=42) (table 1). On the other hand, schizotypal personality disorder was the least frequent comorbid PD (5%; n=3) (Figure 1).

There were statistical associations between the diagnostic criteria of some personality disorders. Spearman's correlation test demonstrated statistically significant correlations between the number of schizotypal criteria and the number of avoidant (r=.59; p =.05) and of paranoid (r=.58; p =.05) personality disorders criteria (Table 2).

Depressive personality criteria appeared significantly correlated with the features of dependent (r=31), avoidant (r=44), schizotypal (r=36), schizoid (r=43) and paranoid (r=38) personality disorders, but not with other PDs. As shown in table 2, avoidant and obsessive personality features were also significantly correlated with schizoid, schizotypal and paranoid traits. On the contrary, cluster B criteria were not in association with any cluster C or cluster A personality features.

The number of comorbid personality disorders in each patient was significantly associated with the severity of some clinical dimensions. Thus, P trend tests showed that more comorbid PD predicted greater scores of depression (p<.001) and anxiety (p<.05) and lower sociability in the ZKPQ sociability score (p<.05) (as seen in table 3).

The U Mann-Whitney test was used to study the clinical differences associated with the presence of each specific comorbid personality disorder. Results are reflected in Table 4, showing how patients with BPD comorbid obsessive-compulsive personality disorder presented significantly better functioning as measured with the GAF scales and less severity in the CGI-BPD clinician rated scale than the rest of patients' scores of the sample at the initial evaluation of the study. By contrast, comorbid histrionic personality disorder predicted lower global functioning and greater clinical

Table 1 Summary of demographics and clinical variables. N=66

	N (%)
Gender (females)	49 (75)
Age*	31 (±7)
Years of education*	12 (±3)
Work status	
Active	12 (20)
Unemployed	10 (16)
Short-term sick-leave	4 (7)
Long-term sick-leave	11 (18)
Student	11 (18)
Others	13 (21)
GAF at baseline*	60 (±7)
GAF at follow up*	73 (±8)
CGI-BPD at baseline*	4.9 (±1)
CGI-BPD at follow up*	3.1 (±1)
In pharmacological treatment	61 (92)
Antidepressant	53 (87)
Benzodiazepine	42 (69)
Antiepileptic	33 (54)
Antipsychotic	33 (54)
Other personality disorders comorbid with Borderline Personality Disorder	
Depressive	42 (64)
Paranoid	30 (45)
Passive-aggressive	25 (38)
Avoidant	22 (33)
Obsessive-Compulsive	20 (30)
Antisocial	19 (29)
Dependent	18 (27)
Narcissistic	10 (15)
Hystrionic	9 (14)
Schizoid	6 (9)
Schizotypical	3 (5)

*Values represent mean scores (SD Standard Deviation between brackets) or otherwise specified. GAF: Global Assessment Functioning; CGI-BPD: Clinical Global Impression Scale for BPD.

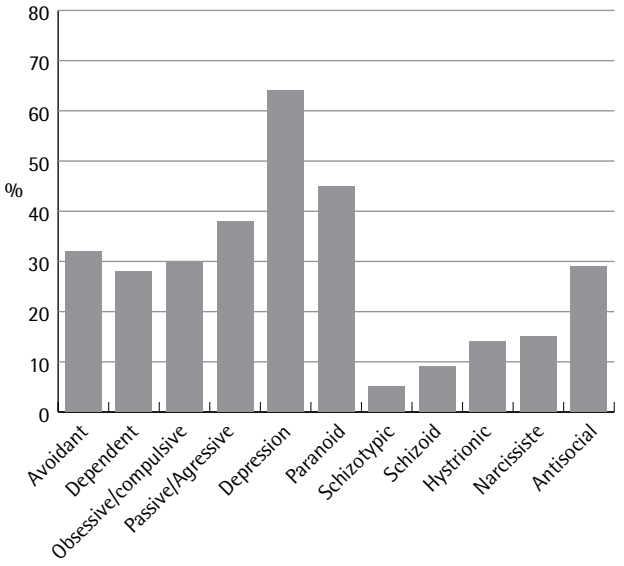

Figure 1 *Percentage of patients with BPD for every Axis II disorder*

severity at baseline (p=.01 and p=.02, respectively). However, patients with comorbid OCPD demonstrated significantly less functional improvement during the six month treatment period than patients without OCPD. By contrast, patients with comorbid histrionic personality disorder showed significantly higher functional improvement than the rest. At the end of the study, a significantly poorer functional improvement, as reflected in the GAF scores, was found in patients with comorbid avoidant personality disorder compared with the rest.

Patients with BPD and comorbid depressive, dependent and schizoid personality disorders presented greater scores for depressive symptoms as measured with the MADRS (p<.00; p<.00; p=.03 respectively). Additionally, comorbidity with obsessive-compulsive and avoidant PD shows suggestive but not statistically significant association with greater depression scores. Moreover, patients with dependent personality disorder and with schizoid personality disorder scored higher in anxiety compared to the rest of patients as measured by the HARS Scale (p=.00: p=.02 respectively). Finally, results showed a significant association of impulsiveness (as measured with the Barratt Impulsiveness Scale) and the presence of comorbid dependent and histrionic personality disorders (p=.05 and p=.03, respectively).

CONCLUSIONS

The present study investigated the relationship of axis II comorbidity in the functional and clinical outcomes of patients with severe borderline personality disorder. As previously demonstrated in other studies, functional impairment in BPD patients is largely associated with severity of core symptoms of the disorder such as affective instability and impulsive behaviors[6,30]. Nonetheless, the idea that global functioning of BPD at long term could be related not only to BPD symptoms, but also to other PD's traits and criteria has been raised in previous studies[31]. Therefore, the

Table 2 Statistically significant Spearman correlations amongst scores of Personality Disorders (DSM-IV-TR) in the sample

	Avoid	Depend	Obs-Comp	Pas-Agress	Depres	Parano	Schizotyp	Schizoid	Hystri	Narcis	Antisoc
Avoid	1.00										
Depend	0.34*	1.00									
Obs-Comp			1.00								
Pas-Agress				1.00							
Depres	0.44*	0.31*		0.30*	1.00						
Parano	0.49*	0.35*	0.39*	0.37*	0.38*	1.00					
Schizotyp	0.59*	0.44*	0.33*	0.26*	0.36*	0.58*	1.00				
Schizoid	0.41		0.33*		0.43*	0.44*	0.42*	1.00			
Hystri		0.32*							1.00		
Narcis				0.35*		0.38*	0.27*		0.39*	1.00	
Antisoc	-0.34*								0.33*	0.39*	1.00

Avoid: Avoidant; Depend: Dependent; Obs-Comp: Obsessive-Compulsive; Pas-Agress: Passive-Aggressive; Depress: Depressive; Parano: Paranoid; Schizotyp: Schizotypic; Hystri: Hystrionic; Narcis: Narcissist; Antisoc: Antisocial. *p<.05. **p<.01

aim of the present study was to explore whether functional impairment and severity at baseline and after six months of treatment were associated with the presence of specific axis II comorbidities in patients with severe BPD, and how those comorbidities interacted.

The majority of patients in the study presented more than two axis II diagnoses confirming previous reports indicating that BPD is usually diagnosed in comorbid association with other personality disorders[18]. Only 8 patients presented a BPD with no comorbid personality disorder. This reflects the difficulty for diagnosis in this particular disorder[7-10].

However, our results contradict previous reports indicating that the most common disorders associated with BPD are antisocial and dependent personality disorders[18]. The most frequent comorbid personality disorders in our sample were depressive and paranoid PD. Avoidant PD and OCPD were significantly more frequent than comorbid cluster B disorders such as histrionic, narcissistic and antisocial PDs. The divergent findings could be explained by the particular characteristics of the sample in our study: our patients were recruited from a day-care hospital that receives patients with severely dysfunctional impairment from the mental health centers. Therefore, our sample probably represented a subgroup of BPD patients with severe interpersonal and professional deterioration, which cannot be extrapolated to the larger population of BPD patients. Consequently, over-presentation of comorbid features of cluster A and cluster C might be associated with greater functional impairment in BPD subjects.

Among our patients, two comorbid PDs, OCPD and histrionic PD, had a significant association with functional outcome. BPD patients with comorbid OCPD have significantly higher levels of GAF at baseline than patients without OCPD and than patients with other PDs. However, OCPD is associated with little improvement during treatment. The higher level of functioning at the initial assessment can be explained by the increased internalization and behavioral control provided by the obsessive personality traits in these patients compared with other BPD patients that present greater instability and externalizing impulsive behaviors. Histrionic PD appears to shape a more severe and dysfunctional presentation at the initial assessment in our study, although patients with comorbid HPD, on the other hand, experienced greater functional improvement than the rest across treatment. The phenomenology of histrionic personality might explain these findings, since histrionic subjects typically show severe interpersonal and behavioral dysfunctions in the context of what they perceive as an unkind and careless environment, as happens at the initial diagnostic visits. As treatment progresses, a more stable and confident attachment with the patients is reached, leading to substantial improvement of behavior and affect in histrionic patients.

Avoidant PD is the comorbid personality factor associated with poorer functional outcome after six months of treatment, which is in accordance with previous studies

Table 3 Scores, SD, and P trends of clinical variables regarding number of disorders

	Number of disorders χ (SD)			
	0 a 1	2 a 4	> 5	P
MADRS	20 (14)	29 (10)	36 (11)	0.012**
HARS	24 (15)	30 (11)	37 (10)	0.024**
FAST	38 (14)	40 (13)	43 (15)	0.642
Impss_ZKPQ	12 (4)	11 (5)	11 (5)	0.642
N-Anx_ZKPQ	14 (5)	16 (5)	16 (3)	0.310
Agg_host_ZKPQ	11 (2)	10 (4)	11 (4)	0.333
Act_ZKPQ	8 (4)	10 (13)	9 (4)	0.243
sy_ZKPQ	9 (2)	6 (4)	5 (5)	0.005**
CGI1	5 (1)	5 (1)	5 (1)	0.883
CGI2	3 (1)	3 (1)	3 (1)	0.484
CGEI2-CGI1	- 2 (1)	- 2 (1)	- 2 (1)	0.658
GAF1	60 (7)	59 (9)	60 (7)	0.885
GAF2	78 (4)	72 (8)	72 (10)	0.160
GAF2-GAF1	18 (10)	13 (9)	12 (11)	0.220
BIS_cog	20 (3)	20 (5)	22 (6)	0.072
BIS_mot	26 (6)	22 (8)	28 (6)	0.156
BIS_np	23 (10)	25 (10)	26 (11)	0.521
BIS_tot	70 (15)	67 (19)	76 (19)	0.288

χ: mean; SD: Standard Deviation.
MADRS: Montgomery-Asberg Depression Rating Scale; HARS: Hamilton Anxiety Rating Scale; ZKPQ: Zuckerman Kuhlman Personnality Questionnaire; Impss: Impulsive Sensation Seeking; N-Anx: Neuroticism-Anxiety. Agg_host: Aggression-Hostility Activity; Act: Activity; sy: Sociability. CGI1: Clinical Global Impression at time 1; CGI2: Clinical Global Impression at time 2. CGI2-CGI1: Evolution of Clinical Global Impression. GAF1: Global Assessment of Functioning at time 1; GAF2: Global Assessment of Functioning at time 2. BIS: Barrat Impulsivity Scale; BIS_cog: attentional impulsivity; BIS_mot: motor impulsivity; BIS_np: non planning impulsivity; BIS_tot: total impulsivity. *p<.05

claiming a especial attention for patients with BPD and comorbid avoidant PD and OCPD[32].

Narcissistic avoidance is frequent in BPD and is closely related with identity diffusion in these patients. Avoidant borderline subjects might have greater difficulties in having a sense of self-directedness and therefore may find it difficult to engage in activities and interpersonal relationships.

In line with previous studies on axis II comorbidity, only depressive symptoms appeared in association with specific personality features in our study, particularly with dependent, schizoid and depressive personality disorders[6,30]. A recent study[33] reported that atypical depression was present in more than 27% of BPD patients studied, suggesting that depression is a fundamental symptom in BPD that is often mistaken as depressive personality disorder. In our sample, patients meeting criteria for depressive personality disorder reported a persistent depressive state during several years but did not meet criteria for a major depressive episode. Nonetheless, it is often very difficult to draw the limits between chronic states of atypical depression and depressive personality features and, consequently, we should be cautious before interpreting that the majority of BPD patients present a comorbid depressive personality. Depression affects functioning in a significant manner by reducing motivation and self-directedness and increasing fear and insecurity in interpersonal relationships. Although the most common comorbid personality disorders in BPD in our sample were depressive and paranoid personality disorders separately, followed by avoidant and obsessive PD, the combination of two or more personality disorders did not follow any pattern. Almost every patient seemed to have a different combination of personality disorders (51 different combinations were found for the 66 subjects in the sample).

The sample size can be a limitation for our conclusions, since a greater number of patients could help to find more significant associations. However, this study shows a panoramic view of the axis II pathology of patients with BPD in psychiatric and hospital settings. It does not aim to demonstrate a direct cause-effect relationship between comorbidities and clinical and personality evaluation. It simply tries to explore the frequency of the different axis II comorbidities and clinical valuation. For this reason, from a statistical point of view, a multiple comparison correction was not applied to the presented contrasts.

Despite these limitations, the results reflect the findings of a detailed clinical exploration carried out by experienced clinical psychiatrists, with severe patients in a day hospital for BPD that provided clinical information that could be evaluated thoroughly during long periods of time. Unlike other comorbidity studies based on a single administration of the SCID II, our research is based on continuous clinical observation, which increases accuracy and reliability of axis II diagnosis.

This study aimed to investigate the comorbidity of borderline personality disorders and other personality disorders and the relationship between severity and functioning in a sample of particularly severe BPD patients from a hospital rehabilitation setting. Cluster A and C personality disorders were overrepresented in the sample compared with studies in less severe BPD patients, which

Table 4 U Mann-Whitney test with means and SD for clinical, severity and functioning variables related to a specific personality disorder; χ;(SD). Significant differences are indicated by * and **

	MADRS	HARS	FAST	Impss ZKPQ	N-Anx ZKPQ	Agg_host ZKPQ	Act ZKPQ	sy ZKPQ	BIS_cog	BIS_mot	BIS_np	BIS_tot	GAF1	GAF2	GAF2-GAF1	CGI1	CGI2	CGI2-CGI1
Avoid																		
Yes	35 (11)	34 (12)	41 (12)	8 (5)**	17 (3)*	9 (4)	8 (4)	3 (2)**	21 (6)	24 (9)	23 (11)	69 (21)	59 (8)	69 (10)*	11 (9)	5 (1)	4 (1)**	(-2) (1)
No	26 (12)	28 (12)	39 (15)	13 (4)	15 (5)	11 (4)	10 (11)	8 (4)	20 (4)	24 (8)	25 (9)	70 (17)	60 (7)	75 (7)	15 (9)	5 (1)	3 (1)	(-2) (1)
Depend																		
Yes	39 (10)**	38 (8)**	40 (18)	11 (5)	17 (2)	11 (4)	7 (4)	5 (4)	22 (5)*	28 (6)*	29 (8)	79 (13)*	59 (8)	71 (9)	12 (11)	5 (1)	3 (1)	(-2) (1)
No	25 (11)	27 (12)	40 (12)	11 (5)	15 (5)	10 (4)	10 (11)	7 (4)	19 (4)	23 (8)	23 (10)	66 (19)	60 (7)	74 (8)	14 (9)	5 (1)	3 (1)	(-2) (1)
Obs-Comp																		
Yes	33 (13)	33 (14)	43 (14)	10 (6)	16 (4)	9 (4)	8 (3)	5 (4)	20 (6)	25 (8)	24 (11)	69 (22)	63 (5)*	71 (9)	9 (9)*	4 (1)**	3 (1)	(-1) (1)*
No	26 (12)	28 (12)	38 (14)	12 (5)	15 (4)	11 (4)	9 (11)	7 (4)	20 (4)	24 (8)	25 (9)	70 (17)	58 (8)	74 (8)	15 (9)	5 (1)	3 (1)	(-2) (1)
Pas-Agress																		
Yes	34 (12)	36 (10)	39 (14)	12 (5)	17 (4)	13 (4)**	12 (15)*	6 (5)	21 (5)	27 (8)*	26 (11)	74 (20)	60 (7)	73 (9)	13 (10)	5 (1)	3 (1)	(-2) (1)
No	25 (12)	27 (13)	40 (14)	10 (4)	15 (4)	9 (3)	7 (4)	7 (4)	20 (5)	23 (8)	24 (9)	67 (17)	59 (8)	73 (8)	14 (9)	5 (1)	3 (1)	(-2) (1)
Depres																		
Yes	33 (10)**	33 (12)	41 (14)	11 (5)	16 (3)*	10 (3)	8 (3)	6(4)	21 (5)	25 (7)	25 (10)	71 (17)	61 (7)	73 (9)	12 (9)	5 (1)	3 (1)	(-2) (1)
No	20 (12)	25 (12)	37 (13)	11 (5)	14 (6)	11 (5)	11 (15)	7 (4)	19 (4)	23 (9)	24 (10)	67 (20)	57 (8)	73 (8)	17 (9)	5 (1)	3 (1)	(-2) (1)
Parano																		
Yes	31 (13)	34 (12)	40 (11)	11 (5)	16 (3)	11 (4)*	9 (3)*	5 (4)**	21 (5)	25 (7)	25 (11)	72 (18)	61 (8)	73 (10)	13 (10)	5 (1)	3 (1)	(-2) (1)
No	27 (12)	27 (13)	40 (16)	11 (5)	15 (5)	10 (4)	9 (12)	7 (4)	19 (5)	24 (9)	24 (9)	68 (19)	59 (7)	73 (7)	14 (9)	5 (1)	3 (1)	(-2) (1)

Table 4 Continuation

	MADRS	HARS	FAST	Impss ZKPQ	N-Anx ZKPQ	Agg_host ZKPQ	Act ZKPQ	sy ZKPQ	BIS_cog	BIS_mot	BIS_np	BIS_tot	GAF1	GAF2	GAF2-GAF1	CGI1	CGI2	CGI2-CGI1
Schizotyp																		
Yes	34 (12)	37 (10)	37 (28)	6 (4)	17 (4)	10 (4)	6 (5)	3 (1)	25 (7)	32 (7)	25 (5)	82 (13)	62 (8)	73 (15)	12 (20)	5 (1)	3 (2)	(-3) (2)
No	28 (13)	30 (12)	40 (13)	11 (5)	15 (4)	10 (4)	9 (10)	6 (4)	20 (5)	24 (8)	25 (10)	69 (18)	59 (8)	73 (8)	14 (9)	5 (1)	3 (1)	(-2) (1)
Schizoid																		
Yes	45 (14)*	43 (5)*	44 (11)	8 (3)	17 (1)	7 (5)	11 (3)*	2 (2)*	21(8)	24 (5)	20 (10)	65 (21)	62 (7)	79 (3)	18 (7)	5 (1)	3 (1)	(-2) (1)
No	27 (12)	29 (12)	39 (14)	11 (5)	15 (4)	11 (4)	9 (10)	7 (4)	20 (4)	24 (8)	25 (10)	70 (18)	59 (8)	73 (8)	13 (10)	5 (1)	3 (1)	(-2) (1)
Hystri																		
Yes	32 (9)	33 (10)	34 (19)	15 (4)	15 (3)	12 (4)	7 (4)	9 (5)	21 (5)	29 (5)	35 (8)**	84 (15)*	54 (6)*	74 (8)	20 (7)*	6 (1)*	3 (1)	(-2) (1)*
No	28 (13)	29 (13)	41 (13)	11 (5)	16 (4)	10 (4)	9 (10)	6 (4)	20 (5)	24 (8)	23 (9)	68 (18)	60 (7)	73 (8)	13 (9)	5 (1)	3 (1)	(-2) (1)
Narcis																		
Yes	30 (7)	31 (10)	39 (9)	16 (4)**	18 (5)	13 (5)*	16 (21)*	8 (5)	21 (5)	25 (11)	30 (11)	76 (25)	58 (8)	74 (10)	16 (2)	5 (1)	3 (1)	(-2) (1)
No	28 (13)	30 (13)	40 (15)	10 (5)	15 (4)	10 (4)	8 (4)	6 (4)	20 (5)	24 (7)	24 (9)	68 (17)	60 (7)	73 (8)	13 (9)	5 (1)	3 (1)	(-2) (1)
Antisoc																		
Yes	26 (11)	29 (10)	39 (17)	14 (3)**	14 (3)*	11 (4)	8 (4)	7 (4)	20 (5)	24 (8)	29 (10)	73 (18)	59 (7)	75 (8)	17 (10)	5 (1)	3 (1)	(-2) (1)
No	29 (13)	30 (13)	40 (13)	10 (5)	16 (4)	10 (4)	9 (11)	6 (4)	20 (5)	24 (8)	23 (10)	68 (19)	60 (8)	72 (8)	13 (9)	5 (1)	3 (1)	(-2) (1)

MADRS: Montgomery-Asberg Depression Rating Scale; HARS: Hamilton Anxiety Rating Scale; ZKPQ: Zuckerman Kuhlman Personnality Questionnaire; Impss: Impulsive Sensation Seeking; N-Anx: Neuroticism-Anxiety. Agg_host: Aggression-HostilityActivity; Act: Activity; sy: Sociability . CGI1: Clinical Global Impression at time 1; CGI2: Clinical Global Impression at time 2. CGI2-CGI1: Evolution of Clinical Global Impression. GAF1: Global Assessment of Functioning at time 1; GAF2: Global Assessment of Functioning at time 2. BIS: Barrat Impulsivity Scale; BIS_cog: attentional impulsivity; BIS_mot: motor impulsivity; BIS_np: non planning impulsivity; BIS_tot: total impulsivity. U-Mann Whitney test with significance level: * p<.05. ** p<.01

suggests that these disorders are associated with greater functional impairment in BPD. By contrast, histrionic features were scarcely represented in this sample and predicted a better efficacy of treatment in the long term. The study supports the evidence that borderline personality disorder is not only heterogeneous for clinical presentation, but also for underlying personality features that affect interpersonal styles and global functionality.

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None of the authors have any financial interests or possible conflicts affecting the objectives or the results of the present manuscript.

REFERENCES

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (4th ed., text rev.). Washington, DC: American Psychiatric Association; 2000.
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 5th ed. Washington, DC: American Psychiatric Association; 2013.
3. Coid J. Epidemiology, public health and the problem of personality disorder. Br J psychiatry Supplement. 2003 Jan;44:S3–10.
4. Ekselius L, Tillfors M, Furmark T, Fredrikson M. Personality disorders in the general population: DSM-IV and ICD-10 defined prevalence as related to sociodemographic profile. Personality and Individual Differences. 2001;30:311-20.
5. Torgersen S, Kringlen E, Cramer V. The prevalence of personality disorders in a community sample. Arch Gen Psychiatry. 2001 Jun;58(6):590-6.
6. Skodol AE, Gunderson JG, Shea MT, McGlashan TH, Morey LC, Sanislow CA, et al. The Collaborative Longitudinal Personality Disorders Study (CLPS): overview and implications. J Pers Disord. 2005 Oct;19(5):487-504.
7. Gunderson JG, Stout RL, McGlashan TH, Shea MT, Morey LC, Grilo CM, et al. Ten-year course of borderline personality disorder: psychopathology and function from the Collaborative Longitudinal Personality Disorders study. Arch Gen Psychiatry. 2011 Aug;68(8):827-37.
8. Zimmerman M, Mattia JI. Psychiatric diagnosis in clinical practice: is comorbidity being missed? Compr Psychiatry. 1999;40(3):182-91.
9. Zimmerman M, Rothschild L, Chelminski I. The prevalence of DSM-IV personality disorders in psychiatric outpatients. Am J Psychiatry. 2005 Oct;162(10):1911-8.
10. Zimmerman M, Ruggero CJ, Chelminski I, Young D. Psychiatric diagnoses in patients previously overdiagnosed with bipolar disorder. J Clin Psychiatry. 2010 Jan;71(1):26-31.
11. Akiskal HS. Subaffective disorders: dysthymic, cyclothymic and bipolar II disorders in the "borderline" realm. Psychiatr Clin North Am. 1981 Apr;4(1):25-46.
12. DeShong HL, Kurtz JE. Four factors of impulsivity differentiate antisocial and borderline personality disorders. J Pers Disord. 2013 Apr;27(2):144-56.
13. Ansell EB, Pinto A, Edelen MO, Markowitz JC, Sanislow CA, Yen S, et al. The association of personality disorders with the prospective 7-year course of anxiety disorders. Psychol Med. 2011 May;41(5):1019-28.
14. Okasha A, Omar AM, Lotaief F, Ghanem M, Seif el Dawla A, Okasha T. Comorbidity of axis I and axis II diagnoses in a sample of Egyptian patients with neurotic disorders. Compr Psychiatry. 1996;37(2):95-101.
15. Friborg O, Martinussen M, Kaiser S, Overgard KT, Rosenvinge JH. Comorbidity of personality disorders in anxiety disorders: a meta-analysis of 30 years of research. J Affect Disord. 2013 Feb 20;145(2):143-55.
16. Jackson HJ, Burgess PM. Personality disorders in the community: results from the Australian National Survey of Mental Health and Wellbeing Part II. Relationships between personality disorder, Axis I mental disorders and physical conditions with disability and health consultation. Soc Psychiatry Psychiatr Epidemiol. 2002 Jun;37(6):251-60.
17. Holzel L, Harter M, Reese C, Kriston L. Risk factors for chronic depression--a systematic review. J Affect Disord. 2011 Mar; 129(1-3):1-13.
18. McGlashan TH, Grilo CM, Skodol AE, Gunderson JG, Shea MT, Morey LC, et al. The Collaborative Longitudinal Personality Disorders Study: baseline Axis I/II and II/II diagnostic co-occurrence. Acta Psychiatr Scand. 2000 Oct;102(4):256-64.
19. Skodol AE, Stout RL, McGlashan TH, Grilo CM, Gunderson JG, Shea MT, et al. Co-occurrence of mood and personality disorders: a report from the Collaborative Longitudinal Personality Disorders Study (CLPS). Depress Anxiety. 1999;10(4):175-82.
20. Zanarini MC, Frankenburg FR, Dubo ED, Sickel AE, Trikha A, Levin A, et al. Axis I comorbidity of borderline personality disorder. Am J Psychiatry. 1998 Dec;155(12):1733-9.
21. Zanarini MC, Frankenburg FR, Fitzmaurice GM. Severity of anxiety symptoms reported by borderline patients and Axis II comparison subjects: description and prediction over 16 years of prospective follow-up. J Pers Disord. 2014 Dec;28(6):767-77.
22. First MB, Gibbon M, Spitzer RL, Williams JBW, Benjamin LS. Structured Clinical Interview for DSM-IV Axis II Personality Disorders, (SCID-II). Washington, D.C.: American Psychiatric Press, Inc; 1997.
23. Zanarini MC, Frankenburg FR, Chauncey DL, Gunderson JG. The diagnostic Interview for Personality Disorders: interrater and test-retest reliability. Compr Psychiatry. 1987;28(6):467-80.
24. Perez V, Barrachina J, Soler J, Pascual JC, Campins MJ, Puigdemont D, et al. The clinical global impression scale for borderline personality disorder patients (CGI-BPD): a scale sensible to detect changes. Actas Esp Psiquiatr. 2007;35(4):229-35.
25. Hall RC. Global assessment of functioning. A modified scale. Psychosomatics. 1995;36(3):267-75.
26. Zuckerman M. Zuckerman–Kuhlman personality questionnaire (ZKPQ): an alternative five-factorial model, pp. 377-396 [ed.] B. De Raad and M. Perugini. Big five assessment. Seattle: Hogrefe and Huber; 2002.
27. Patton JH, Stanford MS, Barratt ES. Factor structure of the Barratt impulsiveness scale. J Clin Psychol. 1995 Nov;51(6):768-74.

28. Hamilton M. Diagnosis and rating of anxiety. Special publication. Br J Psychiatry. 1969;3:76-9.
29. Montgomery SA, Asberg M. A new depression scale designed to be sensitive to change. Br J Psychiatry. 1979 Apr;134:382–9.
30. Newton-Howes G, Tyrer P, Weaver T. Social functioning of patients with personality disorder in secondary care. Psychiatr Serv. 2008 Sep;59(9):1033-7.
31. Kvarstein EH, Karterud S. Large variation of severity and longitudinal change of symptom distress among patients with personality disorders. Personal Ment Health. 2013 Nov;7(4):265-76.
32. Nysaeter TE, Nordahl HM. Comorbidity of borderline personality disorder with other personality disorders in psychiatric outpatients: how does it look at 2-year follow-up? Nord J Psychiatry. 2012 Jun;66(3):209-14.
33. Gremaud-Heitz D, Riemenschneider A, Walter M, Sollberger D, Kuchenhoff J, Dammann G. Comorbid atypical depression in borderline personality disorder is common and correlated with anxiety-related psychopathology. Compr Psychiatry. 2014 Apr;55(3):650-6.