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Assessing borderline personality disorder based on the Hierarchical Taxonomy of Psychopathology (HiTOP): Dimensional Clinical Personality Inventory 2 – BPD

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Summary

A new approach to mental disorder taxonomy was recently proposed, the Hierarchical Taxonomy of Psychopathology (HiTOP). The aim of this study was to develop a specific version of the Dimensional Clinical Personality Inventory 2 (IDCP-2), a self-reported measure developed in Brazil for use in pathological personality traits assessment, focused on the assessment of traits related to BPD in accordance with the HiTOP model. In step 1 we developed new factors to cover all traits of BPD according to HiTOP. In step 2, data were collected from 207 adults from the community (N = 207; M_{age} = 35.9). Participants completed the developed measure (IDCP Borderline Personality Disorder Scale; IDCP-BPD), and selected factors from IDCP-2, PID-5, FFBI and FFHI. Exploratory structural equation modeling (E-SEM) suggested a 3-factors solution for the grouping of the fifteen factors of the IDCP-BPD.

Factors and total score reliability was good. Correlations between IDCP-BPD factors and external measures were coherent, corroborating our expectations. The bootstrap two-sample *t*-test comparing the healthy and pathological groups suggested good discrimination capacity of the IDCP-BPD factors, mainly the Fragility and Impotence feelings factors. Favorable evidence was found for the use of IDCP-BPD to BPD traits measurement. The new factors extend the coverage of IDCP-2 in measuring BPD symptoms. Correlations suggest that IDCP-BPD factors measure the traits considered as relevant according to HiTOP. Discriminant capacity of the factors also supports the use of the measure, although future studies must replicate this in samples composed of BPD patients.

personality disorders, differential diagnosis, emotional instability, psychological assessment

INTRODUCTION

Following the advancement that taxonomy and evaluation of personality disorders (PDs) have reached within a dimensional perspective[1], the scientific community has been mobilized by data and evidence, culminating in the creation of the Hierarchical Taxonomy of Psychopathology (HiTOP) [2,3]. The HiTOP explored the gener-

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al psychopathology field looking for better empirical coherence in the nosology of mental disorders, in which PDs are included. This proposition understood psychopathology in terms of dimensions, in accordance with the transdiagnostic current tendency (e.g. Krueger & Eaton [4]). Despite the existing criticism of practical issues related to a dimensional approach [5], based on growing evidence, the HiTOP model assumes a recent and scientifically prominent position when investigating PD measures, although empirical evidence is scant [6,7]. With this study, we intend to operationalize the subfactors and respective maladaptive traits proposed by the HiTOP to assessing borderline personality disorder (BPD), while adding data on the utility and adequacy of the HiTOP system. For this purpose, our focus is on adapting a self-report measure developed in Brazil, one of a few in the country, to the assessment of pathological personality traits. Given that the classification of mental disorders is in a period of transition and reconfiguration between categorical and dimensional approaches, and considering the relevance of using a familiar nomenclature for clinicians, we assume the same position as the HiTOP authors by connecting a traditional diagnostic category (i.e. BPD) to the dimensional maladaptive traits proposed by the HiTOP.

BPD has been understood as a pattern characterized by instability, impairing the self-esteem and self-direction, and interfering with interpersonal relationships, accompanied by manifestations of impulsivity, hostility and risky behaviors [8-10]. Diagnosing the characteristics of BPD has assumed an undeniable clinical relevance, since its prevalence stands out and its potential personal and social impairments require careful attention [11]. Some features of BPD have also been investigated as central to the evaluation of the severity of psychopathology [12], which makes BPD diagnosis particularly relevant for psychiatric and psychological assessment in general.

Dimensionally, traits of emotional lability, anxiousness, separation insecurity, depressivity, impulsivity, risk-taking and hostility are all present in BPD [8,13-18]. Based on the HiTOP model, the BPD combines traits of the Internalizing spectrum, specific to the subfactor of Distress, including Anxiousness, Emotional lability, Hostility, Perseveration, (low) Restricted affectivity, Separation insecurity, Submissiveness, Identity problems, Negative relationships, Fragility, Ineptitude, and (low) Invulnerability; and traits of the Antagonistic Externalizing spectrum, such as Rudeness, Flirtatiousness, and (low) Timorousness [2].

In addition to the taxonomic importance of the model, measurement of each level of HiTOP becomes essential for decisions and interventions [3]. Although we could not find a single measure that covers all BPD traits from HiTOP, there are measures covering specific BPD traits, such as the Personality Inventory for DSM-5 [16] and the Five-Factor Model Personality Disorder (FFM-PD) [19], specifically its Borderline scale – the Five-Factor Borderline Inventory (FFBI) [18]. Further, we highlight the Dimensional Clinical Personality Inventory 2 (IDCP-2) [20], a self-report measure in accordance with the dimensional perspective that comprises most of the traits appropriate to the HiTOP model [21-26].

The IDCP-2 was constructed in light of the evidence of the dimensionality structure of PDs and has been recurrently refined in the face of new proposals and perspectives ([23,24,26-28]. The IDCP-2 and its previous version (IDCP) combine several traits that represent the core of BPD, showing good discriminant and predictive capacities [21,23].

Despite the coverage of IDCP-2 factors, some features listed in the HiTOP model as relevant to BPD are not represented in the evaluative content of the instrument, and others may be better organized to address the borderline pattern. Updating a measure according to HiTOP should improve it and bring it in line with the current trend in mental health. Therefore, this study aimed to develop a specific version of the IDCP-2, focused on the assessment of traits related to BPD in accordance with the HiTOP model. In addition, we verified the psychometric properties of this new version, aiming to establish its reliability and present initial data on validity, gathering evidence on its pertinence to measuring BPD traits.

METHOD

To address the aim of this study, we divided the method into two steps. In the first step, we relied

on the literature of the HiTOP [2,3] to generate a composite of items for the IDCP-2 [20,29] particularly related to BPD traits – selecting related factors and developing new items for those traits not well covered. In the second step, we tested and analyzed the psychometric properties of the new version of IDCP-2 for BPD traits assessment (i.e. IDCP Borderline Personality Disorder Scale – IDCP-BPD) in a community sample.

Step 1: procedures

Aiming to construct a scale from IDCP that covers the traits of the BPD according to HiTOP, we performed four procedures, as follows.

(1) Selection of subfactors and respective traits from HiTOP, and establishment of definitions for each trait: we identified the relevant subfactors for BPD in accordance with the HiTOP model [2]. Based on that, we searched the literature for definitions, mainly according to the measurement tests mentioned in Table 1 of Kotov et al. [2], as the Personality Inventory for DSM-5 (PID-5) [16,30], the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) [31], the Personality Assessment Inventory (PAI) [32], and the Five-Factor Model Personality Disorder scales [19,33].
(2) Selection of the final set of traits pertinent to BPD: for the subfactors that the HiTOP designates as relevant to BPD, we highlighted all the listed traits. Then, we selected the most relevant features of BPD according to the prominent literature on PD diagnostics (i.e. DSM-5 sections II and III) [8]. There was a deliberate attempt to maintain as many traits as possible, aiming at the representativeness of BPD traits.
(3) Selection of IDCP-2 factors representing the target traits: starting from the selected HiTOP traits related to BPD and making use of the previously established definition, we indicated the IDCP-2 factors that appropriately cover these traits. For those factors, all items were included.
(4) Development of new items: as consequence of the previous procedure, we identified gaps in the IDCP-2 assessment of HiTOP BPD traits. We operationalized the traits not covered by IDCP-2, i.e. we developed items to represent all the non-represented or not well-represented traits from HiTOP. Item development was conducted independently by the four authors. The authors, by consensus, selected the most adequate items, based on content and semantic analyses.

After these procedures were completed, the first version of the IDCP-BPD was defined according to empirical psychometric verification.

Step 2: participants

A sample was composed of a community sample with 207 people that provided data to evaluate the psychometric properties of the IDCP-BPD. The participants were aged between 17 and 71 years (M = 35.97, SD = 12.62) and the majority were, female (81.6%) and Caucasian (76.9%), mostly postgraduate students (32.9%), followed by undergraduate students (25.6%) and graduates (24.2%), with marital status spread almost equally between single (44.9%) and married (40.1%) individuals. A large group reported having attended psychological treatment (59.9%) and psychiatric treatment (24.2%), with some participants reporting the use of psychiatric medication (12.1%). Specifically to mental disorders and symptoms, a portion of the participants (15.5%) reported known psychiatric diagnoses (e.g. bipolar disorder, depression, generalized anxiety disorder (GAD), dysthymia, panic syndrome, attention-deficit hyperactivity disorder (ADHD), obsessive–compulsive disorder (OCD) and eating disorder), and some reported past suicidal ideation (36.2%), suicide attempts (6.3%) and current suicidal ideation (5.3%). Based on this information, although being a community sample, occurrence of BPD-typical traits was likely.

The expectation for BPD occurrence in community samples is from 1.6% to 5.9% [8]. In an epidemiologic study in the São Paulo Metropolitan Area, Brazil, 2.7% cases of PD from Cluster B were observed [34]. According to this, we expected to see elevation in typical traits of the BPD in the present sample, as well as a small number of people with a BPD diagnosis.

INSTRUMENTS

IDCP Borderline Personality Disorder Scale – IDCP-BPD

A scale originated from de Dimensional Clinical Personality Inventory 2 (IDCP-2) [20] based on the traits of BPD [8] according to the HiTOP [2]. The IDCP-2 consists of a self-report measure developed for the assessment of pathological personality traits, comprising 206 items on a 4-point Likert scale, where "1" stands for "Has nothing to do with me" and "4" for "Has everything to do with me". The IDCP-2 covers 47 factors on 12 dimensions (Dependency, Aggressiveness, Mood instability, Eccentricity, Attention seeking, Distrust, Grandiosity, Isolation, Criticism avoidance, Self-sacrifice, Conscientiousness and Inconsequence). For this study, we embrace five dimensions in eight factors of interest: Dependency (Avoidance of Abandonment and Insecurity), Aggressiveness (Violence), Mood Instability (Anxious concern and Vulnerability), Distrust (Angry distrust), and Self-sacrifice (Hopelessness and Self-devaluation and Submission). Previous studies presented the validity and reliability of these factors [26,27,35-40]. The administered version of the IDCP-BPD was composed of 116 items.

Personality Inventory Disorder for DSM-5 (PID-5)

PID-5 [16] is a self-report inventory designed to assess 25 pathological characteristics of personality according to the Alternative Model for Personality Disorders (AMPD) of the DSM-5 [8]. It comprises 220 items on a 4-point Likert scale, with 0 equal to "false or often false" and 3 equal to "true or often true". The PID-5 assesses 25 factors grouped into 5 dimensions (i.e. Negative affect, Detachment, Antagonism, Disinhibition, and Psychoticism). For this study, we selected the following factors: Emotional lability, Perseveration, Separation insecurity and Submissiveness. Studies having shown the satisfactory psychometric properties of the PID-5 [16,41].

Five Factor Model Personality Disorder scales (FFM-PD scales)

The FFM-PD enables the assessment of pathological personality functioning [19,42]. It is based on a five-factor model and composed of five domains assessing 99 pathological personality traits, in which items must be answered in a 5-point Likert scale ranging from 1, "strongly disagree" to 5, "strongly agree". The FFM-PD has shown satisfactory psychometric properties [18,19,43-45]. For this study, we included traits related to the Five-Factor Borderline Inventory (FFBI) [18]: Anxious uncertainty, Dysregulated anger, Despondence, Self-Disturbance and Fragility; and one related to the Five Factor Histrionic Inventory (FFHI) Flirtatiousness [45].

PROCEDURES

This research was approved by the Brazilian Research Ethics Committee (CAAE: 21992113.1.0000.5514) and the participants signed a consent form. We performed online data collection using Google Forms, inviting volunteers through social networking sites (e.g. Facebook).. The volunteers dedicated approximately 30 minutes to respond to the survey. After 4 weeks of collection, we extracted the database for analyses.

DATA ANALYSES

According to the aims of this study, in step 1 we selected the relevant traits for the BPD according to HiTOP, which are presented in Table 1. From this selection, new items were developed, and new factors established, achieving a BPD version of the IDCP (IDCP-BPD). In step 2, psychometric properties were verified through exploratory structural equation modeling (E-SEM), using parallel analysis as an indicator of a number of factors. We adopted a flexible approach (i.e. E-SEM) to factor investigation as there is no specific *a priori* number of factors for traits organization. Measures were retained in the factor when presenting factor loading ≥ 0.30 and/or did not impair the internal consistency of the factor. Internal consistency and intracorrelations was calculated as it was an indi-

cator of reliability. Correlations were performed between the IDCP-BPD factors and the respective external measures according to Table 1. We also proceeded to bootstrap (k = 10.000; bias-corrected 95% confidence intervals, CI) two-sample t-test, creating two groups from the total sample: a healthy group (n = 71), composed of people who had never had psychotherapy or psychiatric treatment, and reported no suicidal attempts or suicidal thoughts, and a pathological group (n = 30), composed of people who had received treatment in the past or were receiving treatment at the time of the study.t We used R software version 3.4.0 for parallel analysis, MPlus software version 7 for E-SEM, and SPSS software version 21 for reliability, correlations and t-test with bootstrap. P-value was significant at ≤0.05.

RESULTS

Step 1: IDCP-2 revision procedures according to pathological traits from BPD related spectra of the HiTOP model

Table 1 presents the spectra related to BPD from the HiTOP model, as well as the traits composing these spectra, relevant traits for BPD selected independently by the authors, and external measures respective for each IDCP-2 factors and new factors.

Table 1. Spectra, traits, relevant traits, IDCP-2 factors and developed factors, and external measures.

S	Traits	Relevant traits	IDCP-2 factors	Respective external measures
ID	Anxiousness	Anxiousness	Anxious Concern	A. uncertainty (FFBI)
	Emotional lability	Emotional lability	Vulnerability	Emotional lability (PID-5)
	Hostility	Hostility	Angry Distrust	Dysregulated anger (FFBI)
	Perseveration	Perseveration	Perseveration (6 □ 5)	Perseveration (PID-5)
	(↓) R. affectivity	(↓) R. affectivity	E. overreaction (5 □ 4)	Emotional lability (PID-5)
	S. insecurity	S. insecurity	A. of Abandonment	S. insecurity (PID-5)
	Submissiveness	Submissiveness	Submission	Submissiveness (PID-5)
	Identity problems	Identity problems	Identity problems (5 □ 5)	Self-Disturbance (FFBI)
	N relationships	N. relationships	N. relationships (5 □ 5)	Self-Disturbance (FFBI)
	Fragility	Fragility	Fragility (5 □ 5)	Fragility (FFBI)
	Ineptitude	Ineptitude	Self-directed hopelessness	Despondence (FFBI)
	(↓) Invulnerability	(↓) Invulnerability	Impotency feelings (5 □ 4)	Despondence (FFBI)
AE	Attention Seeking	—	—	—
	Callousness	—	—	—
	Deceitfulness	—	—	—
	Grandiosity	—	—	—
	Manipulativeness	—	—	—
	Rudeness	Rudeness	Violence	Dysregulated anger (FFBI)
	Egocentricity	—	—	—
	Dominance	—	—	—
	Flirtatiousness	Flirtatiousness	Flirtatiousness (7 □ 5)	Flirtatiousness (FFHI)
	(↓) Timorousness	(↓) Timorousness	Insecurity	Submissiveness (PID-5)

Note. In bold are the new factors, developed in this study. In the brackets (penultimate column) are presented the number of items developed and selected for empirical research (step 2). S = Spectra; ID = Internalizing Distress; AE = Antagonistic Externalizing; ↓ = low; R. affectivity = Restricted affectivity; S. insecurity = Separation insecurity; N relationships = Negative relationships; E. overreaction = Emotional overreaction; A. of abandonment = Avoidance of Abandonment; S. insecurity = Separation insecurity; A. uncertainty = Anxious uncertainty.

From the internalizing distress and antagonistic externalizing spectra, 15 traits were judged as relevant for the BPD. Therefore, seeking to cover all traits, 38 items for 6 factors were created, and 33 were selected for administration in Stage 2. Items that were selected contemplated the criteria for clarity, consistency, content and (non-redundancy). New factors were labeled as Perseveration (item example: "I'd rather do the tasks always the same way."), Emotional overreaction (item example: "I have a hard time hiding or controlling what I'm feeling."), Identity problems (item example: "I feel emptiness inside me"), Negative relationships (item example: "I always had relationships that made me very sick."), Fragility (item example: "I hurt myself on purpose, because I did not know what else to do."), Impotency feelings (item example: "Life is so complicated that I doubt that one day I will be happy."), and Flirtatiousness (item example: "I like knowing that I´m attracting attention of several people at the same time.").

Step 2: Psychometric properties verification of the IDCP-BPD

We investigated the psychometric properties of the item set, starting from the parallel analysis for polychoric variables, determining the maximum number of factors for the test. We obtained up to five factors, with significant eigenvalues not randomly established, and proceeded to the exploratory structural equation modeling (E-SEM) [46], testing solutions from two to five factors using the Geomin oblique rotation and extraction method Maximum Likelihood Robust (MLR), considered as a robust method suitable for polychoric variables.

We evaluated the indexes for the models and identified that as the number of factors had grown, the model fit became better. Although we have verified the interpretability of models from two to five, the model with three factors showed the best interpretability. Based on this, we chose the solution composed of three factors. The fit indexes obtained were X2/df = 2.08 (acceptable); RMSEA = 0.07 (acceptable); CFI = 0.95 (good); TLI = 0.91 (acceptable); and SMR = 0.03 (good), based on Hooper, Coughlan and Mullen [47]. Table 2 shows factors loadings, average of the correlations between the measures composing the factor; and internal consistency (Cronbach's α) for measures and factors. The measures that remained in each factor are bolded.

Table 2. Factor loadings of factors from IDCP-2 and new factors.

Measures	α	Interpersonal dependence	Emotional outburst	Distress internalizing
Avoidance of Abandonment	.86	.85	.42	.62
Insecurity	.87	.76	.17	.45
Violence	.81	.25	.89	.33
Vulnerability	.81	.57	.81	.60
Anxious Concern	.83	.82	.49	.69
Emotional overreaction[a]	.83	.43	.53	.37
Angry Distrust	.73	.33	.66	.46
Self-directed hopelessness	.86	.68	.42	.77
Submission	.79	.66	.28	.45
Perseveration[a]	.67	.40	.36	.37
Identity problems[a]	.91	.56	.35	.86
Negative relationships[a]	.86	.54	.48	.65
Fragility[a]	.81	.46	.45	.73
Impotentness[a]	.85	.60	.38	.87
Flirtatiousness[a]	.81	.22	.26	.15

α	.91	.79	.74	.86
$r_{average}$	.39	.39	.35	.51

Note. a = developed measures. In bold the measures composing each higher order factor.

Flirtatiousness was the only measure not presenting factor loadings ≥ 0.30. We opted to retain it in the Interpersonal dependence and Emotional outburst, as the internal consistency was not impaired when maintaining this measure in the factors. Internal consistency for each measure were superior to 0.73, except for Perseveration, mainly greater than 0.81. Two of the three factors observed showed internal consistency about the same or greater than 0.80, except for Emotional outburst. Alpha for the IDCP-BPD total score was greater than 0.90. The average correlations of measures composing each factor suggest consistency for the three factors presently found. Table 3 presents the correlations between IDCP-2 measures and the three of the four factors found with the PID-5, FFBI and FFHI measures administered.

Table 3. Correlations between IDCP-2 measures, new measures, and factors from PID-5, FFBI, and FFHI.

	SI	Sub.	AU	Pers.	Flirt.	DA	EL	Desp.	SD	Frag.
Avoidance of Abandonment	.76*	.58*	.66*	.58*	.16	.47*	.51*	.58*	.62*	.68*
Insecurity	.59*	.73*	.47*	.51*	.00	.21*	.31*	.41*	.46*	.47*
Anxious Concern	.71*	.60*	.82*	.67*	.12	.59*	.65*	.65*	.68*	.73*
Submission	.47*	.54*	.43*	.46*	-.02	.35*	.46*	.42*	.44*	.51*
Perseveration[a]	.30*	.31*	.36*	.52*	.15	.32*	.29*	.24*	.30*	.33*
Flirtatiousness[a]	.23*	.13	.20*	.26*	.63*	.17	.15	.09	.20*	.12
Violence	.26*	.14	.34*	.33*	.28*	.71*	.42*	.31*	.37*	.39*
Vulnerability	.49*	.40*	.54*	.60*	.20*	.77*	.67*	.56*	.65*	.63*
Emotional overraction[a]	.43*	.22*	.44*	.41*	.20*	.52*	.60*	.31*	.41*	.48*
Angry Distrust	.30*	.18	.45*	.31*	.06	.70*	.39*	.44*	.40*	.42*
Self-directed hopelessness	.51*	.51*	.58*	.58*	.14	.50*	.43*	.71*	.73*	.65*
Identity problems[a]	.42*	.43*	.59*	.57*	.06	.49*	.49*	.79*	.78*	.73*
Negative relationships[a]	.50*	.37*	.52*	.54*	.18*	.52*	.49*	.51*	.56*	.56*
Fragility[a]	.40*	.28*	.51*	.48*	.13	.56*	.54*	.72*	.64*	.72*
Impotency feelings[a]	.52*	.49*	.59*	.59*	.07	.56*	.48*	.74*	.71*	.70*
Interpersonal dependence[b]	.74*	.70*	.71*	.72*	.25*	.51*	.57*	.58*	.66*	.69*
Emotional outburst[b]	.49*	.31*	.56*	.54*	.39*	.79*	.63*	.48*	.57*	.58*
Distress internalizing[b]	.57*	.52*	.69*	.71*	.15	.64*	.59*	.82*	.82*	.81*
IDCP-BPD total score	.70**	.60**	.76**	.75**	.23**	.74**	.69**	.76**	.81**	.82**

Note. a = developed measures; b = higher order factors; SI = Separation Insecurity; Sub. = Submissiveness; AU = Anxious Uncertainty; Pers. = Perseveration; Flirt. = Flirtatiousness; DA = Dysregulated Anger; EL = Emotional Lability; Desp. = Despondence; SD = Self-Disturbance; Frag. = Fragility. * significant at the level .01. In bold are the correlations according to the Table 1; in gray shading correlations regarding the higher order factors according to Table 2.

The expected correlations were observed, although for a few cases higher effect sizes were found with other measures (i.e. Vulnerability, Self-directed hopelessness and Identity problems). Even in cases when higher correlation was not with the expected external measure, the correlation with external measure was one of the highest. As expected, according to factor loadings presented in Table 2, the Interpersonal dependence higher order factor correlated more with Separation insecurity, Submission, Anxiousness, Anxious uncertainty and Persevera-

tion factors; the Emotional outburst higher order factor correlated more with Dysregulated anger and Emotional lability factors; and the distress internalizing higher order factor correlated more with Despondence, Self-Disturbance and Fragility factors. Total score correlations showed that IDCP-BPD is highly correlated with almost all external measures except for Flirtatiousness. Table 4 presents the results on health and pathological groups comparison.

Table 4. Comparison between health (n = 71) and pathological (n = 30) groups in factors from IDCP-BPD.

Measures	Groups	Mean	SD	t (df = 99)	Bootstrap (BC 95% CI)		
					Lower	Upper	d (p)
Avoidance of Abandonment	Non-patient	1.99	0.82	-2.05	1.81	2.17	0.45 (.04)
	Psychiatric	2.33	0.61		2.14	2.54	
Insecurity	Non-patient	1.82	0.77	0.12	1.67	1.99	0.03 (.90)
	Psychiatric	1.80	0.65		1.58	2.01	
Anxious Concern	Non-patient	2.24	0.84	-1.86	2.06	2.42	0.41 (.06)
	Psychiatric	2.56	0.61		2.34	2.80	
Submission	Non-patient	1.89	0.72	-0.17	1.73	2.05	0.04 (.87)
	Psychiatric	1.92	0.67		1.69	2.16	
Perseveration	Non-patient	2.30	0.62	0.28	2.16	2.45	0.06 (.77)
	Psychiatric	2.26	0.62		2.03	2.51	
Flirtatiousness	Non-patient	1.96	0.78	-0.06	1.78	2.14	0.01 (.95)
	Psychiatric	1.97	0.66		1.75	2.20	
Violence	Non-patient	1.48	0.43	-1.15	1.39	1.59	0.25 (.25)
	Psychiatric	1.59	0.45		1.45	1.77	
Vulnerability	Non-patient	1.72	0.66	-1.56	1.57	1.88	0.34 (.12)
	Psychiatric	1.95	0.70		1.70	2.23	
Emotional overreaction	Non-patient	2.36	0.86	-0.73	2.14	2.55	0.15 (.46)
	Psychiatric	2.49	0.82		2.20	2.81	
Angry Distrust	Non-patient	1.84	0.78	-1.26	1.65	2.03	0.27 (.21)
	Psychiatric	2.04	0.64		1.83	2.27	
Self-directed hopelessness	Non-patient	1.54	0.73	-1.18	1.38	1.72	0.26 (.24)
	Psychiatric	1.73	0.71		1.51	1.98	
Identity problems	Non-patient	1.81	0.93	-2.43	1.60	2.04	0.53 (.02)
	Psychiatric	2.32	1.03		1.96	2.70	
Negative relationships	Non-patient	1.60	0.79	-1.67	1.42	1.80	0.36 (.10)
	Psychiatric	1.87	0.65		1.65	2.11	
Fragility	Non-patient	1.41	0.63	-4.11	1.27	1.54	0.88 (< .001)
	Psychiatric	2.01	0.78		1.74	2.35	
Impotency feelings	Non-patient	1.44	0.66	-2.95	1.29	1.59	0.65 (.004)
	Psychiatric	1.88	0.71		1.63	2.13	
Interpersonal dependence	Non-patient	2.03	.57	-.93	1.90	2.17	0.21 (.35)
	Psychiatric	2.14	.39		1.99	2.29	

Emotional outburst	Non-patient	1.87	.49	-1.30	1.76	1.98	0.29 (.19)
	Psychiatric	2.01	.45		1.84	2.19	
Distress internalizing	Non-patient	1.68	.58	-2.67	1.55	1.81	0.58 (.009)
	Psychiatric	2.01	.53		1.82	2.23	
IDCP-BPD total score	Non-patient	1.86	.49	-2.10	1.74	1.96	0.42 (.04)
	Psychiatric	2.05	.37		1.92	2.18	

Higher means for the psychiatric group were observed for almost all factors, except for Insecurity and Perseveration. However, these comparisons did not present significant differences between groups. Regarding the other measures, four showed significant differences with higher means for the psychiatric group. Distress internalizing higher order factor was significant, as was the total score.

DISCUSSION

Advance in taxonomy for psychiatric disorders is a need that can be accomplished through evidences from literature of the past decades. The HiTOP represents that this achievement is ongoing and increasingly close to being reached. In this study we developed an IDCP-2 version (IDCP-BPD) focused on the assessment of BPD traits according to the HiTOP. The evidence presented in this paper should be interpreted as initial knowledge on IDCP-BPD, is favorable to its use in measuring BPD traits and corroborates the literature in the field [8,13-18].

The verification of the relevant traits for BPD in the HiTOP suggested that some traits were not being covered in the IDCP-2. Therefore, new items were developed and grouped into factors, aiming for the expansion in the coverage of the new version of the test. According to internalizing distress and antagonistic externalizing spectra [2], seven new factors were included, as highlighted in Table 1. Perseveration is related to the inability to interrupt the way a person engages in activities even when they cause them harm; Emotional overreaction is composed of items regarding the difficulty in not always showing feelings and emotions; Identity problems respects the tendency to shows uncertainty about important issues in life, lack of purpose; Negative relationships is a factor on the tendency to establish intense and harmful relations; Fragility is related to the difficulty in dealing with stress, implying a tendency to self-harm and suicidal thoughts; Impotency feelings regards beliefs and feelings that life hurts and cannot improve; and Flirtatiousness is related to the exaggerated need to flirt and feel sexually attracted to anyone. These traits and others covered by the factors from IDCP-2 (i.e. Anxious concern, Vulnerability, Angry distrust, Avoidance of abandonment, Submission, Self-directed hopelessness, Violence, and Insecurity) are considered as suitable for measuring BPD [2,12-15,17,18,42].

The findings in Table 2 are consistent with HiTOP [2,3], as the first factor is related to the dependence tendency of the BPD, the second factor is related to externalizing symptoms, and the third factor to internalizing symptoms. Moreover, in general, reliability indicators for internal consistency reached levels considered as suitable for clinical measures ($\alpha \geq 0.80$) [48,49].

Correlations between the IDCP-BPD factors and external measures were as expected (Table 1), showing high correlations with the expected measures. The total score of IDCP-BPD showed high correlations with all external measures except Flirtatiousness. Indeed, this was the only factor with low correlations with the three IDCP-BPD higher order factors. On the one hand, the flirtatiousness trait is expected to be associated with PDs composed of traits from the antagonistic externalizing spectrum [2]. On the other hand, the literature seems not to support this trait as a typical symptom of the BPD. We could not find empirical evidence supporting flirtatiousness as a symptom of BPD. Our findings seem to corroborate this, as the correlations between Flirtatiousness and external measures other than Flirtatiousness (FFHI) [45] were low, as were the correlations with IDCP-BPD higher order factors and IDCP-BPD total score. These findings suggest that the Flirtatiousness factor should be excluded from the IDCP-BPD.

Group comparison analyzes assisted in the decision of whether or not to keep the Flirtatiousness factor, as well as in verifying the capacity of the IDCP-BPD in discriminating the two groups. Corroborating the previous findings, items from the Flirtatiousness factor showed very poor capacity in discriminating groups. Therefore, the evidence strongly suggested the exclusion of the Flirtatiousness factor from the IDCP-BPD. Regarding the other 14 factors, 9 showed low to high discrimination capacity, with special attention to Fragility and Impotency feelings, and 2 factors were closely related to the core characteristic of the BPD – emotional instability [8,14,42].

The findings of this study should be interpreted as initial evidence for the IDCP-BD. In general, the analysis corroborated the utility of the test. Other studies must be performed, mainly using clinical samples and specifically, people diagnosed with BPD. Moreover, other limitations must be highlighted. The community sample was not assessed in order to assure that people considered as "healthy" indeed did not have BPD or other PD diagnoses. Studies with diagnostic accuracy designs must be conducted seeking for cutoff establishment of the IDCP-BPD.

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