



The Personality Inventory for DSM-5-Brief Form (PID-5-BF); Psychometric indicators in a Brazilian community sample

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Objective: To investigate psychometric properties (internal structure, convergent/discriminant validity, internal consistency, and test-retest) of the Personality Inventory for DSM-5-Brief Form (PID-5-BF) in a Brazilian community sample. *Method:* This is a study with a psychometric design. A sample of 527 adults from the general population (69.9% women; 33.5 ± 14.0 years; 74.0% ≥ 12 years education) responded to the instrument online after the study was disseminated on social networks and to the researchers' contacts. The NEO-PI-R and sociodemographic questionnaire were applied besides the PID-5-BF, and a retest was applied 15-30 days after the initial assessment for reliability assessment. Data were analyzed using statistical techniques (IBM SPSS19 and Factor20); the significance level was set at $p \leq 0.05$ for all the analyses. *Results:* Internal consistency was verified using Cronbach's alpha and was adequate (domains $\alpha \geq 0.69$; total $\alpha = 0.87$), in addition to test-retest reliability (domains $ICC \geq 0.82$; total $ICC = 0.95$). Divergences were found between the PID-5-BF different domains despite them being significantly correlated with each other. Convergent validity with the NEO-PI-R was adequate, with moderate/strong correlations between the domains theoretically associated ($r > 0.38$). The internal structure (Exploratory Factor Analysis) indicated that the original five-factor model ($CFI = 0.991$; $TLI = 0.986$; $RMSEA = 0.033$) and one-factor model were adequate ($CFI = 0.908$; $TLI = 0.899$; $RMSEA = 0.089$). *Conclusions:* The findings support using the PID-5-BF Brazilian version, which presented adequate psychometric properties comparable to the original version. This instrument can be helpful in the clinical and research fields to screen general and specific traits of personality pathology. Future studies are suggested to expand the psychometric findings among clinical samples, confirming the instrument's scope of reach.

Keywords: scale, validity, reliability, DSM-5, PID-5-BF, personality

The availability of easy-to-apply brief instruments to screen different psychopathologies is increasingly in demand (Bolsoni & Zuardi, 2015). Many of the instruments used in the personality field contain many items, such as, for example, the NEO Personality Inventory-Revised (NEO PI-R), which comprises 240 items (Costa & McCrae, 2008), the HEXACO Personality Inventory with 100 items (Lee & Ashton, 2016), and more recently, the Personality Inventory for DSM-5 self-report form (PID-5-SRF; Krueger, Derringer, Markon, Watson, & Skodol, 2012), with 220 items. Considering the complexity of personality constructs, instruments with a greater number of items can be advantageous, as they favor, for example, more reliable scores (Carvalho et al., 2012; Passos & Laros, 2015). However, some disadvantages are associated with long scales, such as respondents' lack of motivation or interest to complete them, the presence of redundant items, and the long time required to complete a test (Robins et al., 2001; Carvalho et al., 2012). Such aspects may restrict the use of these tests in a research context, in which time is limited. The adoption of extensive tests may also be restricted in a clinical context, especially in initial assessments. Thus, the

use of instruments that allow brief screening of pathologies associated with personality may be useful, directing future assessment and allowing more accurate referrals, for example. (Carvalho et al., 2010; Bolsoni & Zuardi, 2015).

The limits associated with the use of long instruments motivate the assessment of shorter versions to expand the use of such instruments in research and clinical contexts. The PID-5-SRF stands out as it was developed by the DSM-5 Personality Disorder working group to assess maladaptive personality traits, according to the alternative model proposed in Section III of the Diagnostic and Statistical Manual of Mental Disorders – 5th Edition (DSM-5; APA, 2013). Its brief version, the PID-5-BF, contains 25 items of the original version. These items represent the five pathological domains: Negative Affect, Detachment, Antagonism, Disinhibition, and Psychoticism; the items also offer a general measure of personality pathology (Krueger et al., 2012; Fossati, Somma, Borroni, Markon, & Krueger, 2017).

In recent years, PID-5-BF has been applied worldwide with comparable findings across different samples with diverse cultural, social, and clinical characteristics, in studies indicating adequate validity and reliability (Combaluzier, Gouvernet, Menant, & Rezrazi, 2018; Zhang et al., 2021; Athar & Ebrahimi, 2013; Zatti et al., 2020).

Table 1: Sociodemographic and clinical characterization

Variable	<i>N</i>	%
Women	368	69.8
Men	159	30.2
Children	166	31.5
Partner	157	29.8
>12 years of schooling	390	74.0
Currently employed	311	59.0
Health problems	40	7.6
Psychiatric diagnosis	118	22.2
Current tobacco consumption	44	8.3
Current alcohol consumption	292	55.4
Trouble with the law	15	2.8

The application of PID-5-BF and its cross-cultural adaptations (Combaluzier et al, 2016; Zhang et al, 2021; Athar & Ebrahimi, 2023; Zatti et al, 2020) presented satisfactory internal consistency, measured by Cronbach's alpha (Fossati et al, 2017; Combaluzier et al, 2018; Zhang et al, 2021; Zatti et al, 2020; Bach, Maples-Keller, Bo & Simonsen, 2016; Debast, Rossi, & van Alphen, 2017; Anderson, Selbom, & Salekin, 2018). Moreover, it demonstrated temporal stability assessed by the test-retest technique (Fossati et al, 2017; Zang et al, 2021). Convergent validity indicators were also obtained using instruments based on the Big Five Model (BFM), such as the Big Five Inventory (Góngora & Solano, 2017, Combaluzier et al, 2018;). Additional validity evidence was found for clinical indicators, as psychopathology scores are correlated with suicidal ideation and hostility indicators (Zatti et al, 2020; Porcerelli, Hopwood, & Jones, 2019).

Additionally, high correlations were found between the brief 25-item version and the 220-item version (PID-5-SRF), confirming a correspondence between both versions (Bach et al, 2016; Debast et al, 2017). Moreover, PID-5-BF presented a good discriminating capacity between clinical and community samples (Bach et al, 2016), a predictive ability to identify personality disorders according to Section II of DSM-5 (Anderson et al, 2018), and an internal structure compatible with the one-factor model (general factor of pathological personality traits) (Porcerelli et al, 2018; Dunne et al, 2021), a model based on the BFM hierarchical model (Musek, 2007; Fossati et al, 2017; Combaluzier et al, 2018; Debast et al, 2017; Anderson et al, 2018; Góngora & Solano, 2017).

Zatti et al. (2020) analyzed the PID-5-BF's psychometric properties in the Brazilian context, addressing a small and peculiar sample of patients admitted to two public hospitals' trauma and emergency units. Despite the satisfactory findings, the authors did not recommend that the results be generalized to other samples, which motivated this study. Thus, the aim of the present study is to investigate the psychometric validity properties (internal structure and convergent/divergent structure) and reliability (internal consistency and test-retest) of the Brazilian version of the PID-5-BF in a community sample.

METHOD

This study was assessed and approved by the Institutional Review Boards (Process No. 4058/2018). The participants provided their written informed consent.

Participants and procedure

The sample comprised 527 participants, of which 368 were women (69.8%). They had an average age of 33.5 ($SD = 14.0$) years (minimum age 18 - maximum age 81 years); most participants were single (70.2%), employed (59.0%), and highly educated (70.0%). Of the participants, 22.2% self-reported psychiatric conditions and 7.6% reported general health problems. Table 1 presents detailed information.

A convenience sampling procedure was adopted. The participants were personally invited or recruited from the community through social media, where the study was disseminated. Only adult individuals (≥ 18 years old) of both sexes were eligible, who reported themselves being literate and having reading and comprehension ability. Individuals reporting duplicated data or who failed to complete any item of the instrument PID-5-BF were excluded; no strategy was adopted to deal with missing data.

Data were collected from July 2020 to July 2021. First, we verified whether the potential participants met the inclusion criteria and then presented the free and informed consent forms for them to read and sign. Later, the participants were invited to complete the instruments previously described. A total of 591 individuals were recruited. Of these, 64 were not included in the total sample either because they withdrew from the study ($N = 21$), reported incomplete ($N = 33$) or duplicated data ($N = 10$). Hence, the final sample comprised 527 participants. After an interval of 15 to 30 days, approximately 20% of the sample ($N = 100$) was randomly drawn and received an email inviting them for the retest. Forty-eight participants answered and participated in the retest, completing the PID-5-BF a second time.

Instruments

The data collection protocol consisted of the following instruments:

PID-5-BF

The PID-5-BF, proposed by Krueger et al. (2012), is composed of 25 items to be rated on a Likert scale ranging from 0 ("very false or often false") to 3 ("very true or often true"). The items (numbered in Table 2) are distributed into five domains (listed in Table 2), namely: Negative Affect (items 8, 9, 10, 11, 15), Detachment (4, 13, 14, 16, 18), Antagonism (17, 19, 20, 22, 25), Disinhibition (1, 2, 3, 5, 6), and Psychoticism (7, 12, 21, 23, 24). The version adapted to the Brazilian context was based on the full Brazilian version (PID-5_SRF, 220 items, Barchi-Ferreira et al, 2019). The items composing the brief version are identical to the corresponding ones in the complete version. The instrument

Table 2. Items' mean scores, reliability, and the PID-5-BF domains.

Items	Score		Item-Total Correlation	Cronbach's alpha (#)	T/R ICC (95%)
	Mean	(SD)			
1	0.59	0.94	0.35	0.87	0.87 (0.76-0.93)
2	1.04	0.91	0.52	0.86	0.74 (0.54-0.86)
3	0.80	0.94	0.58	0.86	0.83 (0.70-0.91)
4	0.94	1.03	0.60	0.86	0.78 (0.60-0.88)
5	0.29	0.66	0.49	0.86	0.53 (0.16-0.74)
6	0.81	0.95	0.34	0.87	0.52 (0.14-0.73)
7	0.81	0.91	0.62	0.86	0.56 (0.22-0.76)
8	2.15	0.95	0.34	0.87	0.81 (0.66-0.89)
9	1.65	1.03	0.28	0.87	0.88 (0.78-0.93)
10	0.92	1.03	0.35	0.87	0.90 (0.82-0.94)
11	0.85	0.92	0.53	0.86	0.80 (0.65-0.89)
12	0.26	0.65	0.44	0.87	0.73 (0.51-0.85)
13	0.77	1.04	0.28	0.87	0.72 (0.50-0.84)
14	0.58	0.86	0.40	0.87	0.77 (0.60-0.87)
15	1.21	1.01	0.53	0.86	0.81 (0.66-0.89)
16	0.83	0.96	0.44	0.87	0.82 (0.67-0.90)
17	0.21	0.57	0.30	0.87	0.83 (0.70-0.91)
18	0.67	0.89	0.42	0.87	0.70 (0.45-0.83)
19	0.96	0.97	0.46	0.86	0.85 (0.74-0.92)
20	0.39	0.75	0.27	0.87	0.55 (0.20-0.75)
21	0.74	0.95	0.53	0.86	0.61 (0.31-0.78)
22	0.32	0.65	0.33	0.87	0.75 (0.56-0.86)
23	0.70	0.97	0.54	0.86	0.71 (0.48-0.84)
24	0.35	0.73	0.56	0.86	0.88 (0.78-0.93)
25	0.21	0.57	0.28	0.87	0.82 (0.68-0.90)
Domains					
Negative affect	6.78	3.30	0.51	0.75	0.93(0.87-0.96)
Detachment	3.77	3.17	0.56	0.74	0.90(0.81-0.94)
Antagonism	2.08	2.24	0.47	0.77	0.82 (0.68-0.90)
Disinhibition	3.51	3.07	0.56	0.74	0.86 (0.75-0.92)
Psychoticism	2.85	3.08	0.68	0.69	0.82 (0.68-0.90)
Total	19.02	10.93		0.87	0.95 (0.91-0.97)

Notes: ANT = Antagonism; DET = Detachment; DIS = Disinhibition; ICC = Intra-class Coefficient Correlation; NA = Negative Affect; PSY = Psychoticism; SD = Standard Deviation; T/R = Test/Retest Reliability; (#) the displayed value refers to the alpha value when the item was excluded.

is accessible at <https://loja.grupoa.com.br/dsm-5-tr-mndiag-est-de-transt-mentais-5ed9786558820932-p1020792>.

NEO-FFI

NEO Five-Factor Inventory (NEO-FFI), from Costa and McCrae (1992), was adapted and psychometrically assessed in the Brazilian context by Flores-Mendoza (2007). It assesses personality traits based on the FFM and consists of 60 items distributed into five domains (i.e., Conscientiousness, Neuroticism, Extraversion, Agreeableness, and Open to Experience), and rated on a five-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree").

Sociodemographics and clinical characteristics

A questionnaire with 19 items was used, developed by the authors to address this study's purposes. This questionnaire contained items that aimed to characterize the sociodemographic and clinical aspects of the sample, which are listed in Table 1.

Data analysis

Data were coded according to technical recommendations and stored in a database. The analyses were performed using IBM SPSS (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) and Factor (Ferrando & Lorenzo-Seva, 2018) software; the significance level for all the analyses was set at $p \leq 0.05$.

Descriptive statistics were used to characterize the sample and analyze the items. Cronbach's alpha was used to verify internal consistency, considering acceptable values above 0.70 (Hair, Black, Babin, Anderson & Tathan, 2009). The Intraclass Correlation Coefficient (ICC) was used to verify test-retest reliability, adopting a 95% confidence interval; an ICC above 0.50 was considered adequate (Koo & Li, 2016). Because data were not normally distributed, Spearman's Rank Correlation Coefficient was used to analyze item-domain and domain-domain correlations, and the correlations between the PID-5-BF and NEO-FFI-R domains. The findings were interpreted according to the

Table 3. Correlation indexes between the PID-5-BF and NEO-FFI-R domains (convergent/divergent validity)

Instruments and Domains	PID-5-BF				
	Negative AffectA	Detachment	Antagonism	Disinhibition	Psychoticism
NEO-FFI					
Neuroticism	0.59*	0.39*	0.32*	0.33*	0.36*
Extraversion	-0.15*	-0.50*	-0.04	-0.15*	-0.22*
Agreeableness	-0.10	-0.24*	-0.38*	-0.27*	-0.27*
Conscientiousness	-0.27*	-0.33*	-0.19*	-0.51*	-0.36*
Open to Experience	-0.07	-0.13*	-0.02	-0.20*	-0.06
PID-5-BF					
Negative Affect	---	---	---	---	---
Detachment	0.45*	---	---	---	---
Antagonism	0.37*	0.38*	---	---	---
Disinhibition	0.37*	0.39*	0.34*	---	---
Psychoticism	0.45*	0.52*	0.46*	0.50*	---

Note: *) statistically significant correlations

framework proposed by Streinan and Norman (2003): weak correlations (between 0 – 0.25), moderate (between 0.26 – 0.50), strong (between 0.51 – 0.70), and very strong (above 0.71).

Exploratory Factor Analysis (EFA) was used to verify the internal structure, which was tested according to the literature on one-factor and five-factor models. A polychoric matrix and Robust Diagonally Weighted Least Squares (RDWLS) extraction method was performed because data were categorical and not normally distributed. Promin rotation, which is suitable for investigating psychological constructs that tend to be correlated, was used. Additionally, the following indices were adopted to check the factor models' goodness of fit: Chi-square (χ^2), the ratio between Chi-square and degrees of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Standardized Root Mean Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). In order to confirm a factor model adequacy, χ^2 is expected not to present significant results; χ^2/df be lower than 3.0; CFI and TLI are higher than 0.90, and RMSEA be lower than 0.06 (Bentler, 1990; Brown, 2015).

RESULTS

Analysis of items, domains, and reliability

An analysis of the scores obtained in each of the PID-5-BF items indicated that the item with the highest mean score (of 2.15; see Table 2) was item 8 from the Negative Affect domain: "I worry about almost everything," while the lowest scores concerned item 17 ("It is no big deal if I hurt other people's feelings") and 25 ("It is easy for me to take advantage of others") both from the Antagonism domain. Note that almost all items presented a floor effect (except item 8); i.e., more than 15% of the answers obtained the lowest score ("Very false or often false") (cf., Terwee et al, 2007). These results are presented in detail in the Appendix.

Additionally, Table 2 shows that the total scale's (25 items) internal consistency (Cronbach's alpha) was equal to 0.87. The internal consistency of the different domains was also adequate ($\alpha > 0.69$; see Table 2). Despite the variation

between each item's correlation and the total score (0.27-0.60), removing any item would not significantly affect the alpha, thus reinforcing the instrument's consistency.

The test-retest reliability was verified for each item individually and was considered adequate ($ICC > 0.52$). As expected, the results met psychometric standards, i.e., the indicators concerning the reliability of the domains and total score were even more substantial ($ICC > 0.82$).

Convergent validity indicators

The NEO-FFI was used to assess the PID-5-BF's convergent validity; the results, presented in Table 3, confirm the presence of predominantly moderate significant correlations between the expected domains: Negative Affect and Neuroticism ($r = 0.59$), Detachment and Extraversion ($r = -0.50$), Antagonism and Agreeableness ($r = -0.38$), and Disinhibition and Conscientiousness ($r = -0.51$). Psychoticism had moderate correlations with Neuroticism and Conscientiousness ($r = 0.36$), but it was not significantly correlated with the Open to Experience domain ($r = -0.06$). The PID-5-BF domains also presented a significant moderate correlation with each other, showing convergent validity (Table 3).

Internal structure analysis

The EFA results concerning the one- and five-factor models are shown in Tables 4 (Goodness of fit) and 5 (Items' factor loadings). According to Table 4, the adjustment indexes ($\chi^2(df)/p$ -value, RMSEA, CFI and TLI) concerning the five-factor model proved to be adequate in relation to the parameters established by Bentler (1990) and Brown (2015). These indices are superior when compared to the indices related to the one-factor model.

Table 5 gives the factor loadings of the items in each of the five factors, based on the Exploratory Factor Analysis. As shown in Table 5, the distribution of the loadings of the items on the five-factor model replicates the original five model proposed by Krueger et al (2012). Note, that items related to the theoretically expected factor have a higher factor loading on the corresponding factor (shaded value),

Table 4. Goodness of fit concerning the PID-5-BF's Exploratory Factor Analysis

Indexes	EFA One-Factor Model	EFA Five-Factor Model
$\chi^2(df)/p$ -value	1430.152 (275)/ $p < 0.001$	291.538 (185)/ $p < 0.001$
RMSEA	0.089	0.033
CFI	0.908	0.991
TLI	0.899	0.986

Notes: EFA: Exploratory Factor Analysis; CFI: Comparative Fit Index; df: Degrees of Freedom; RMSEA: Root Mean Square Error of Approximation; TLI: Tucker-Lewis Index

except for item 19. Theoretically, this item belongs to the Antagonism domain, which presented a factor loading higher than the Negative Affect domain. The one-factor model presented borderline indicators, with all items presenting high factor loading; items 9 and 13 stand out, with borderline indicators equal to 0.34 and 0.35.

DISCUSSION

The psychometric properties concerning the validity and reliability of the Brazilian version of the PID-5-BF were assessed in a community sample. The results confirm that the instrument and its domains present adequate consistency. The same was found in previous studies addressing different cultural contexts and different samples, for example, with college students in the United States (Anderson et al, 2018), with a general population in Argentina (Góngora & Solano, 2017), adolescents in Italy (Fossati et al, 2017), inpatients in Brazil (Zatti et al, 2020), and psychiatric patients in Denmark (Bach et al, 2016).

Despite the small number of items (five) in each domain, the alpha values proved to be appropriate (Cortina, 1993), reinforcing the instrument's reliability. Temporal stability (15 to 30 days) was also confirmed, which is in line with Fossati et al. (2017) and Zhang et al. (2021). They considered one and two months for the retest, respectively, and found adequate results. Note that the temporal stability indicators of the brief version are slightly superior to those presented in the study applying the instrument's full version in the Brazilian population: ≥ 0.45 for the facets and ≥ 0.76 for the domains (Barchi-Ferreira & Osório, 2022).

A high floor effect was found in the items' response pattern, which is common in self-report instruments given potential social desirability bias (Barchi-Ferreira & Osório, 2022; Dodaj et al, 2012). The characteristics of a community sample might, however, also explain this floor effect, considering the fact that the presence and severity of pathological personality traits are less common in community samples, as compared to, for example, clinical samples of people with psychopathology. Studies addressing the ability of instruments to discriminate clinical and community samples are essential to obtain an in-depth understanding of such floor effects.

Moderate correlations were found between the target domains of PID-5_BF and NEO-FII, highlighting the associations between normative and pathological personality traits. According to theory, such correlations are expected and they provide evidence of convergent validity between the tests. Similar to Gongora and Solano (2017), when they assessed the PID-5-BF's Argentinian version,

we found a lack of convergence with the Psychoticism (PID-5-BF) and Open to Experience (NEO-FII) domains. These findings reinforce previous discussions on whether Psychoticism is a variant of the FFM (Pocnet, Antonietti, Handschin, Massoudi & Rossier, 2018) and whether Open to Experience is related to personality disorders (Krueger et al, 2012; Barchi-Ferreira & Osório, 2022). Other studies show a strong association between the PID-5-BF domains with different measures of personality traits, such as the Personality Assessment Screener (Porcerelli et al, 2018), the Big Five Inventory (Góngora & Solano, 2017), and the Personality Psychopathology Five (PSY-5; Anderson et al, 2018), reinforcing evidence of the PID-5-BF's convergent validity in different samples and cultures. Associations with other personality measures are frequently replicated in studies addressing the remaining versions of PID-5. The associations com outr are frequently replicated in studies addressing other PID-5 versions (Barchi-Ferreira & Osório, 2022; Pocnet et al, 2018; Al-Attayah, Megreya, Alrashidi, Dominguez-Lara & Al Sheerawi, 2017; Markon, Quilty, Bagby & Krueger, 2013).

The PID-5-BF domains were significantly intercorrelated (0.34 to 0.52), which is in line with data previously reported for this instrument (e.g., the average correlation between domains was 0.49 in Bach et al. (2016)). On the one hand, this finding reflects the complexity of personality structure models, in which the presence of interstitiality between domains and traits is inherent and inevitable (Crego, Gore, Rojas & Widiger, 2015). On the other hand, it may also reflect the presence of a general psychopathology factor (Caspi et al, 2014), which seems to be reinforced by findings such as those obtained by Wright et al. (2012), which suggest that a single factor can satisfactorily capture personality pathology. Studies assessing the PID-5's hierarchical structure (Gutiérrez et al, 2017; Roskam et al, 2015) reinforce this hypothesis by confirming the first-order factor's adequacy.

Crego et al (2015) also highlighted specific issues regarding the construction of the PID-5 to explain the moderate magnitude of the correlations between the domains. One of these issues was the fact that the selection of the items that made up the final instrument was not carried out based on factor analyzes between the domains. This characteristic may impact the purpose of the DSM-5 dimensional model to overcome one of the important limitations of the DSM-IV categorical model, which is the excessive co-occurrence of diagnostic categories APA (APA, 2013). Therefore, it was expected that the discriminating capacity of the new model, operationalized by PID-5, would be one of its strongest aspects (Crego et al, 2015). On the other hand, the results from factorial studies of the

Table 5. Items' factor loadings – PID-5-BF's Exploratory Factor Analysis

Items	One-Factor Model	Five-Factor Model				
		Psychoticism	Detachment	Antagonism	Disinhibition	Negative Affect
1	0.51	0.26	-0.05	-0.05	0.66	-0.39
2	0.68	-0.21	-0.04	0.04	0.86	0.23
3	0.74	-0.25	-0.05	0.07	0.96	0.24
4	0.69	0.25	0.31	0.05	0.17	0.13
5	0.70	0.37	0.05	-0.08	0.68	-0.36
6	0.41	0.16	0.09	-0.15	0.42	-0.12
7	0.72	0.69	0.06	-0.00	0.07	0.06
8	0.43	0.08	0.18	-0.04	-0.11	0.63
9	0.34	0.14	0.01	-0.19	-0.00	0.61
10	0.42	0.15	-0.08	-0.05	0.14	0.50
11	0.62	0.27	0.04	-0.06	0.26	0.32
12	0.66	0.57	-0.15	-0.02	0.28	0.08
13	0.35	0.12	0.22	0.06	0.12	-0.10
14	0.52	-0.19	0.86	0.00	0.06	0.02
15	0.61	-0.04	0.39	0.07	0.12	0.41
16	0.55	-0.06	0.90	0.03	-0.17	0.13
17	0.51	0.08	0.20	0.58	0.06	-0.16
18	0.51	0.20	0.65	-0.10	-0.02	-0.17
19	0.53	0.10	0.01	0.12	0.13	0.49
20	0.40	0.38	-0.09	0.39	-0.17	0.08
21	0.66	0.92	-0.09	0.07	-0.15	0.03
22	0.56	0.00	-0.02	0.92	-0.01	0.09
23	0.66	0.52	0.08	0.07	0.10	0.05
24	0.74	0.59	0.09	0.06	0.16	0.01
25	0.58	0.10	-0.04	0.95	0.02	-0.09

Note: Shading: factor loading of the item in the factor according to the original model; Bold: higher factor loading.

PID-5 in its different versions suggest that the instrument has adequate discriminant validity to also support the presence of distinct domains (Barchi-Ferreira & Osório, 2020). This study's findings regarding the superiority of the five-factor model to the one-factor model reinforce this hypothesis and are aligned with the results of the Brazilian study by Zatti et al. (2020).

In this sense, we chose to assess the internal structure of the PID-5-BF through EFA, considering the literature's previous findings (Barchi-Ferreira & Osório, 2020), which are not unanimous regarding the best factor model. Additionally, complex constructs, such as those found in personality domain scales (Hopwood & Donnellan, 2010), rarely have a simple structure, negatively impacting confirmatory factor analysis's goodness of fit indexes. As a result, satisfactory goodness of fit indexes substantiated the five-factor model, which grouped the theoretically expected items except item 19 ("I crave attention").

Additionally, some items cross-loaded with other factors, i.e., items 1 and 5 of the Disinhibition domain, item 15 of Negative Affect, and item 20 of the Antagonism domain. Some items also showed these characteristics in Dunne et al. (2021) and Fossati et al. (2017), among which items 5 and 15. These results reinforce the complexity and interstitiality of personality explanatory models (Krueger & Markon, 2014) involving the DSM-5's alternative model, which explicitly recognizes the presence of cross-loading (Dunne et al., 2021).

Such a fact may have implications for the instruments' psychometric indicators and explain a lack of consensus in the literature about the best configuration of the PID-5-BF's internal structure. For instance, similar to this study, Anderson et al. (2018), Dunne et al. (2021), Gongora & Solano (2017) and Hyatt et al. (2020) replicated the five-factor model (Barchi-Ferreira & Osório, 2022). The results presented by Fossati et al. (2017) only moderately support the model. Debast et al. (2017) indicate difficulties in replicating the Disinhibition domain, while Zhang et al. (2021) found better goodness of fit for a six-factor model. Such divergences concerning the PID's internal structure are found in its other versions (Byrne, 2010; Roskam et al., 2015; Somma et al., 2017).

Despite the fit indices being borderline, support was also found for the single-factor model, which supports using the instrument as a general measure of personality psychopathology, as proposed by Porcerelli et al. (2018). Dunne et al. (2021) and Fossati et al. (2017) tested the adequacy of a bifactor model, concluding that the items can be represented by a general factor and five specific factors, as suggested by published scoring procedures.

The findings presented here support using the PID-5-BF Brazilian version, which presented psychometric properties comparable to the PID-5-SRF Brazilian version, also verified in a community sample (Barchi-Ferreira & Osório, 2022). Hence, this instrument can be used in the clinical and research fields to screen general and specific traits of

personality pathology. Future studies are suggested to expand psychometric findings for clinical samples, confirming its breadth of use. This study's limitations concern the predominant use of the classical test theory and the sample comprising overwhelmingly female, young professionals with high educational levels.

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Appendix

Percentage of answers in the different response categories of the PID-5-BF items

Items	Score (%)			
	0	1	2	3
1	66.0	16.7	9.9	7.4
2	32.8	36.8	23.9	6.5
3	50.5	25.4	18.0	6.1
4	45.9	24.9	18.6	10.6
5	79.9	13.9	3.8	2.5
6	49.0	28.5	15.4	7.2
7	16.9	31.3	16.1	5.7
8	7.2	17.3	28.8	46.7
9	16.3	27.1	31.3	25.2
10	46.1	26.8	16.1	11.0
11	45.2	30.7	18.0	6.1
12	83.5	9.7	4.4	2.5
13	58.6	16.1	15.2	10.1
14	62.4	21.6	11.8	4.2
15	30.0	32.4	24.5	13.1
16	50.3	22.6	21.4	5.7
17	85.6	8.3	5.1	0.9
18	56.4	26.0	12.3	5.3
19	40.0	32.4	19.0	8.5
20	75.3	13.1	9.1	2.5
21	54.5	24.3	14.0	7.2
22	77.2	12.9	7.2	2.7
23	58.4	20.9	12.7	8.0
24	77.2	12.9	7.2	2.7
25	86.1	8.0	4.7	1.1

Note: 0 = Very false or often false; 1 = Sometimes or somewhat false; 2 = Sometimes or somewhat true; 3 = Very true or often true.