





Brazilian Version of the Level of Personality Functioning Scale-Brief Form 2.0: Evidence of Reliability and Validity

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ABSTRACT – The goal of this research was to investigate the psychometric properties of the Level of Personality Functioning Scale – Brief Form – 2.0 (LPFS-BF-2.0) in Brazilian samples. Therefore, two samples were used in this study, one with 415 and the other with 1,011 Brazilians. Participants completed the Brazilian version of the LPFS-BF-2.0 and other measures of common mental disorder symptoms, suicide risk, the severity of personality pathology, and pathological personality traits. The results indicated that the two-factor model (including self-functioning and interpersonal functioning domains) fits the Brazilian samples better than a one-factor model. The LPFS-BF-2.0 scales indicated adequate reliability coefficients and evidence of convergent validity.

KEYWORDS: personality, psychopathology, psychometry

Versão Brasileira da Escala de Nível de Funcionamento da Personalidade – Forma Breve – 2.0: Evidência de Fidedignidade e Validade

RESUMO – O objetivo desta pesquisa foi investigar as propriedades psicométricas da Escala de Nível de Funcionamento da Personalidade – Forma Breve – 2.0 (LPFS-BF-2.0) em amostras brasileiras. Assim, duas amostras foram utilizadas, uma com 415 e outra com 1.011 brasileiros. Os participantes responderam a versão brasileira da LPFS-BF-2.0 e outras medidas de sintomas de transtornos mentais comuns, de risco de suicídio, de severidade da patologia da personalidade e de traços patológicos da personalidade. Os resultados indicaram que o modelo de dois fatores (incluindo os fatores de funcionamento do self e interpessoal) ajustou melhor às amostras de brasileiros do que o modelo de um fator. As escalas da LPFS-BF-2.0 indicaram adequados coeficientes de fidedignidade e evidência de validade convergente.

PALAVRAS-CHAVE: personalidade, psicopatologia, psicometria

Impaired personality functioning is the central feature of personality pathology (Skodol, 2012). There is a growing consensus in the scientific community that the core of personality pathology can be operationalized through impairments in self-functioning and interpersonal functioning (Sharp & Wall, 2021). The alternative model for personality disorders (AMPD) presented in Section III of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013)

provides in Criterion A an empirical and transtheoretical-based approach to assessing the general features and severity of personality dysfunction (Bender, 2013; Bender et al., 2011; Morey et al., 2011). From this perspective, self-functioning is operationalized through the domains of identity and self-direction, whereas interpersonal functioning consists of the domains of empathy and intimacy (APA, 2013). Research supports the validity of this generalized severity dimension in predicting personality disorder diagnostic categories from

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DSM-IV, as well as in establishing their association with many pathological personality traits (Zimmermann et al., 2019).

To assess the level of personality functioning of an individual, researchers and clinicians can rely on specific instruments developed for this purpose. The Level of Personality Functioning Scale – Brief Form (Hutsebaut et al., 2016; Weekers et al., 2019), is a short self-report measure including 12 items developed to assess the impairments in personality functioning according to the AMPD. The LPFS-BF is currently in its second version, i.e., LPFS-BF-2.0 (Weekers et al., 2019). The first version (see Hutsebaut et al., 2016) was improved in terms of item content and response scale (see Weekers et al., 2019). In particular, the authors modified three items (4, 6, and 11) to improve structural validity and reliability, and changed the binary yes/no response format to a response scale ranging from 1 (completely untrue) to 4 (completely true). Several studies indicated appropriate reliability, validity, and clinical utility of the LPFS-BF-2.0 (Bach & Hutsebaut, 2018; Spitzer et al., 2021; Weekers et al., 2019).

Criterion A can be conceptualized as a hierarchical model with a strong general factor indicating global impairments in personality functioning. From this perspective, the second stratum of the hierarchy is composed of two broad domains, which describe impairments in self-functioning and interpersonal functioning. On the third tier are the domains of identity and self-direction linked to the dimension of the self-functioning and the domains of empathy and intimacy that are related to the dimension of interpersonal functioning (APA, 2013). On the lowest tier each domain is represented by three subdomains. For example, identity is defined by 1) experience of oneself as unique, 2) stability of self-esteem, and 3) ability to regulate a range of emotional experiences. The 12 items of the LPFS-BF-2.0 were developed to cover these 12 subdomains of the AMPD Criterion A (Weekers et al., 2019). Previous studies have indicated that the items of the LPFS-BF-2.0 show a better fit to a two-factor model than a one-factor model, with the first six items explained by the self-functioning factor and the last six items explained by the interpersonal functioning factor (Bach & Hutsebaut, 2018; Minarčíková et al., 2019; Schetsche, 2021; Spitzer et al., 2021; Weekers et al., 2019).

Although the LPFS-BF-2.0 was constructed according to AMPD Criterion A model, it is also useful for assessing the severity of personality pathology of the dimensional personality disorder model of the 11th edition of the International Classification of Diseases (ICD-11; see empirical evidence in Bach et al., 2021; Gamache et al., 2021). Both AMPD's Criterion A and ICD-11's severity of personality disorders is conceptualized based on the construct of self-functioning and interpersonal functioning (for a more comprehensive discussion of similarities and differences of the two models see Zimmermann et al., 2023). Thus, the LPFS-BF-2.0 may be a useful tool to assess the severity of personality pathology in both models. In addition, the

LPFS-BF-2.0 is also useful for identifying vulnerability to psychological distress, such as depression, anxiety, and stress (see Stricker & Pietrowsky, 2022), once people with personality pathology often show symptoms of other mental disorders (see for example Lenzenweger et al., 2007).

The current study aims to evaluate the psychometric properties of the Brazilian-Portuguese version of the LPFS-BF-2.0. Therefore, the specific aims of the present study are to: (1) analyze the factor structure that best fits the sample of Brazilians; examine the degree of (2) reliability and (3) convergent validity of the LPFS-BF-2.0 scale scores. In order to accomplish these aims, the following hypotheses were tested:

Hypothesis 1: We expected that a two-factor model (self-functioning and interpersonal functioning) will better fit the data from Brazilian samples than a one-factor model, following the international trend (Bach & Hutsebaut, 2018; Bliton et al., 2022; Minarčíková et al., 2019; Schetsche, 2021; Spitzer et al., 2021; Weekers et al., 2019). We will also compare these two models with further candidate models from the literature, including a four-factor model (identity, self-direction, empathy, and intimacy), a four-factor model with a second-order general factor, and a bifactor model with a general factor and two-specific factors (self-functioning and interpersonal functioning) (e.g., Bliton et al., 2022).

Hypothesis 2: We expected that the total score and the two domain scores of self- and interpersonal functioning can be measured with adequate reliability. Previous studies showed adequate internal consistency coefficients ($> .70$) for the scales of the LPFS-BF-2.0 (Spitzer et al., 2021; Stricker & Pietrowsky, 2022; Weekers et al., 2019). Thus, our hypothesis is that we will find similar coefficients in Brazilian samples.

Hypothesis 3: We expected that LPFS-BF-2.0 scores are positively correlated with a range of similar constructs. First, given the similarity between the DSM-5 and ICD-11 models previously presented (Bach & First, 2018), positive and strong correlations ($r \geq .50$) are expected between the LPFS-BF-2.0 scores and the score of a measure of severity of personality disorder according to the ICD-11 model (Hypothesis 3a). Second, LPFS-BF-2.0 scores should be positively correlated with pathological personality traits according to both DSM-5 and ICD-11 trait models (Hypothesis 3b). As the LPFS-BF-2.0 construct is at the core of personality pathology (Skodol, 2012), its scores are expected to show statistically significant and at least moderate ($r \geq .30$) positive correlations with pathological personality traits. Third, we expected that LPFS-BF-2.0 scores are positively correlated with psychological distress, specifically, the number of symptoms of common mental disorders (depression, anxiety, and somatic complaints) and risk for suicidal behavior (Hypothesis 3c). As people with personality pathology are likely to present psychological distress (Stricker & Pietrowsky, 2022), we expect to find positive and statistically significant correlations with measures of common mental disorders and suicidality

($r \geq .30$). Finally, we expected that LPFS-BF-2.0 scores are statistically significantly and moderately higher (Hedges' $g \geq .50$) in people who self-reported clinical indicators, such

as having a psychiatric diagnosis or being in psychological or psychiatric treatment, than in people without these indicators (Hypothesis 3d).

METHOD

Participants

The present study is composed of two samples. A total of 415 participants with ages ranging from 12 to 86 years took part of the first data collection in 2016. Another sample of 1,011 participants with ages ranging from 13 to 67 years participated of data collection in 2020. Details of sociodemographic and health data are displayed in Table 1. The samples were obtained from two studies carried out by the research group led by the first author.

Measures

Sociodemographic and Health Questionnaire (SHQ): We developed a questionnaire to obtain sociodemographic (e.g., age, gender, socioeconomic level, educational level etc.), and health (e.g., psychiatric diagnosis, psychotropic medication etc.) data. In total, the SHQ comprises nine items that are answered on different response formats (see Table 1).

Level of Personality Functioning Scale – Brief Form – 2.0 (LPFS-BF-2.0; Weekers et al., 2019): This instrument was built upon Criterion A in the AMPD and includes 12 items (i.e., one item per subdomain). The items are answered on a Likert scale ranging from 1 (very false or often false) to 4 (very true or often true). Responses are usually aggregated to one scale for self-functioning and to one scale for interpersonal functioning, each scale comprising six items. Higher scores represent more severe impairments in personality functioning. The LPFS-BF-2.0 was translated from English to Brazilian-Portuguese for two independent mental health professionals, a psychiatrist, and a psychologist, who are proficient in the English language. A synthesized version was formulated by the first author of this paper and then this version was submitted to the back-translation procedure, which was performed by a citizen of the United States of America who lives in Brazil for more than five years. The back-translated version was then evaluated by one of the original authors of the LPFS-BF-2.0, and after the needed changes and final approval, the instrument was used in this study.

Suicidality Module of the Mini International Neuropsychiatric Interview (MINI-Suicidality; Sheehan et al., 1998): We used the six items of the Suicidality Module of the MINI in a self-report format. The items are answered in a dichotomous format (yes/no) and include questions about suicidal thoughts and behavior in the last month, except the sixth item which investigates previous suicide attempts

throughout life. We used the Brazilian-Portuguese version of the MINI (Amorim, 2000).

Self-Reporting Questionnaire (SRQ-20; Harding et al., 1980): The SRQ-20 is a 20-item questionnaire requiring yes or no responses. It is a screening tool for common mental disorders, with items describing symptoms such as anxiety, depression, and psychosomatic illness. We used the Brazilian-Portuguese version adapted by Mari and Williams (1985).

Standardized Assessment of Severity of Personality Disorder (SASPD; Olajide et al., 2018): The SASPD consists of nine items reflecting different maladaptive trait domains. Each item consists of four descriptions representing different levels of severity (ranging from 0 to 3), and participants have to select the description that fits best to their personality. The sum score across items represents the general severity of personality pathology according to an early draft of the ICD-11 model for personality disorders. We used the Brazilian version which is not yet published.

Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012): This instrument assesses pathological personality traits according to AMPD's pathological personality traits model. In the first sample, the short-form version of the PID-5, which comprises of 100 items, was used (PID-5-SF; Maples et al., 2015). In the second sample, we used the Personality Inventory for DSM-5-Brief Form-Plus-Modified (PID-5-BF+M; Bach et al., 2020). This version has 36 items, two per facet, and includes the Anankastic domain of the ICD-11's trait model. Items are answered on 4-point Likert scales ranging from 0 (very false or often false) to 3 (very true or often true). We used the Brazilian version of the PID-5 adapted by Oliveira et al. (2021), which presents adequate evidence of validity and reliability (Bach et al., 2020; Lugo et al., 2019; Oliveira et al., 2020; Oliveira et al., 2021; Zatti et al., 2020).

Procedures

First, the linguistic adaptation of the LPFS-BF-2.0 to Brazilian-Portuguese was performed, as previously described. Next, an online data collection platform was built using the open-source FormR software (Arslan et al., 2020). For the first survey, the research protocol included the SHQ, LPFS-BF-2.0, MINI-Suicidality, SRQ-20, and PID-5-SF. For the second data collection, the survey included the SHQ, LPFS-BF-2.0, SASPD, and PID-5-BF+M. The platforms were announced on social media to recruit participants. Snowball sampling (Goodman, 1961) was encouraged by

Table 1
Sociodemographic and Health Characteristics of the Participants (Study I)

	Sample 1		Sample 2		Total	
	(n = 415)		(n = 1,011)		(n = 1,426)	
Age						
Min / Max	12	86	13	67	12	86
M / SD	29,31	11.35	31.66	9.98		
Gender						
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Female	310	74.70	729	72.11	1,039	72.86
Male	105	25.30	274	27.10	379	26.58
Region						
North	11	2.65	41	4.06	52	3.65
Northeast	19	4.58	122	12.07	141	9.89
Middle-West	251	60.48	356	35.21	607	42.57
Southeast	66	15.90	357	35.31	423	29.66
South	68	16.39	135	13.35	203	14.24
Ethnic						
White	236	56.87	555	54.90	791	55.47
Black	42	10.12	100	9.89	142	9.96
Yellow	11	2.65	16	1.58	27	1.89
Brown	118	28.43	323	31.95	441	30.93
Indian	2	0.48	9	0.89	11	0.77
Other	6	1.45	8	0.79	14	0.98
Educational Level						
High	371	89.40	913	90.31	1,284	90.04
Medium	31	7.47	76	7.52	107	7.50
Low	13	3.13	22	2.18	35	2.45
Socioeconomic Level						
High	112	26.99	196	19.39	308	21.60
Medium-High	115	27.71	250	24.73	365	25.60
Medium	90	21.69	314	31.06	404	28.33
Medium-Low	81	19.52	200	19.78	281	19.71
Low	17	4.10	117	11.57	134	9.40
Psychiatric Diagnoses						
Yes	80	19.28	308	30.46	388	27.21
No	335	80.72	703	69.54	1,038	72.79
Psychiatric Treatment						
Yes	55	13.25	206	20.38	261	18.30
No	360	86.75	805	79.62	1,165	81.70
Psychological Treatment						
Yes	107	25.78	289	28.59	396	27.77
No	308	74.22	722	71.41	1,030	72.23

asking participants to share the research platform with their friends, family, and acquaintances. To motivate participants' collaboration for the study, when they had completed the questionnaires, a performance report was made available to them. Participants who failed the content control items were excluded from the analysis (a control item example,

“Show you are paying attention by selecting number two). This research was approved by an Ethical Committee. The first data collection was approved under the protocol number CAAE 79083417.3.0000.5540, and the second data collection was also approved by an Ethical Committee (CAAE 45817421.6.0000.5540).

Data Analysis

To test the factorial structure (hypothesis 1) of the Brazilian version of the LPFS-BF-2.0 we run confirmatory factor analysis (CFA) using the WLSMV estimator based on polychoric correlations. We tested five different models: (1) a one-factor model with a single dimension of generalized severity; (2) a two-factor model including self and interpersonal dimensions; (3) a four-factor model including identity, self-direction, empathy, and intimacy domains; (4) the same four-factor from the model 3 with a second-order general factor; and (5) a bi-factor model with a general factor and two specific uncorrelated factors of self and interpersonal styles. We considered the following fit measures: chi-square test (χ^2), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Recommendations for model fit cutoff criteria are: χ^2 with p -value $> .05$; CFI and TLI $\geq .95$; RMSEA $< .08$; SRMR $< .06$ (Browne & Cudeck, 1993). The CFA were run using lavaan package (Rosseel, 2012). The reliability (hypothesis 2) of the LPFS-BF-2.0 scales were evaluated by Cronbach's alpha, McDonald's omega methods, and average inter-item correlation. Reliability analyses were conducted using the JASP software (Love et al., 2019).

The association of the LPFS-BF-2.0 scores with the severity of personality disorder conceptualized according to the ICD-11 model (hypothesis 3a) was examined through Spearman's ρ correlation with the SASPD. Likewise, to verify the association of the LPFS-BF-2.0 scores with pathological personality traits according to the DSM-5 and ICD-11 models (hypothesis 3b), the correlations with the PID-5-SF and PID-5-BF+M scores were examined. In an exploratory manner, we also tested whether the two LPFS-BF-2.0 domain scores jointly predict variance in the severity of personality pathology and pathological personality traits using multiple linear regression analyses. In order to evaluate the expected association of the LPFS-BF-2.0 scores with psychological distress measures (hypothesis 3c), we performed Spearman's ρ correlation analyses with the SRQ-20 and Suicidality Module of the MINI measures. Also, the convergent validity of the LPFS-BF-2.0 was examined through Welch one-tailed, two-sample t -test comparing mean differences between groups of participants (hypothesis 3d) who responded positively or negatively to the SHQ questions: Do you have a psychiatric diagnosis? Are you in psychiatric treatment? Are you in psychological treatment? The effect sizes of the differences were estimated using Hedge's g . These analyses were conducted using the JASP software (Love et al., 2019).

RESULTS

The Factor Structure of the LPFS-BF-2.0

To identify the structure that best fits Brazilian samples we performed CFA considering a general factor model (Figure 1), a two strongly correlated factors including self-functioning and interpersonal functioning (Figure 2), a correlated factor model with four factors including identity, self-direction, empathy, and intimacy domains (Figure 3), the same four-factor model with a general factor on second order (Figure 4), and a bi-factor model (Figure 5) with the items account primarily for a general factor and for two specific uncorrelated factors (self and interpersonal). Results from CFAs are shown in Table 2 and Figures 1 to 5. All models showed acceptable to good fit. When considering the parameters, the two-dimensional model seemed to be the most convincing model because all factor loadings were substantial ($> .50$; see Figure 2) and all factors were sufficiently distinct from each other (latent correlations were $\leq .85$). In the one-factor model (see Table 2), the RMSEA values were $> .08$. In the four-factor model (see Figure 3), there were too high factor intercorrelations (e.g., between identity and self-direction), and in the bifactor model (see Figure 5), there were negative loadings on specific factors. The four-factor model with a general second-order factor presented a Heywood case in Sample 1 (see Figure 4). Thus, hypothesis 1 was confirmed.

Evidence of Reliability of the LPFS-BF-2.0

The reliability coefficients of the Brazilian version of the LPFS-BF-2.0 are shown in Table 3. The results of the internal consistency estimation methods were quite similar within and between samples. The empathy and intimacy domains showed the weakest reliability coefficients. Based on this, to estimate the level of personality functioning of an individual more accurately, researchers and practitioners should use the broader dimensions of self-functioning and interpersonal functioning, or the total score. These results confirm hypothesis 2.

Evidence of Convergent Validity of the LPFS-BF-2.0

The expected strong positive correlations between the LPFS-BF-2.0 scores and the SASPD were observed (hypothesis 3a). The results are shown in Table 4. All the pathological personality trait domains were positively correlated with the domains of personality functioning (hypothesis 3b), with negative affectivity and detachment showing the strongest associations in sample 1. The same pattern of positive correlations between the LPFS-BF-2.0 domains and the pathological personality traits was observed in sample 2. The results confirm much of hypothesis 3b in

sample 2. Correlations with the Anankastia factor did not reach the expected minimum magnitude ($\rho < .30$). The domain of self-functioning also presented a correlation

slightly below .30 with the Antagonism/Dissociability factor. About the other pathological personality traits, the correlations were positive, statistically significant, and

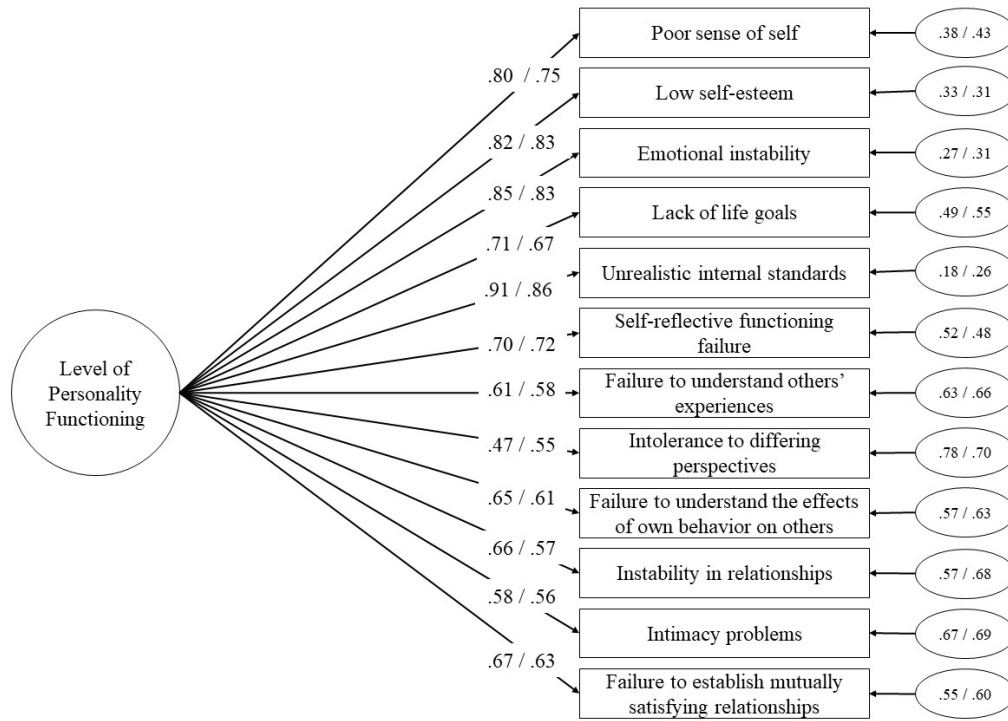


Figure 1. Standardized Coefficients of Confirmatory Factor Analysis for One-Factor Model of the LPFS-BF-2.0
 Note. Values from the left side are from sample 1 ($n = 415$), and from right side are from sample 2 ($n = 1,011$).

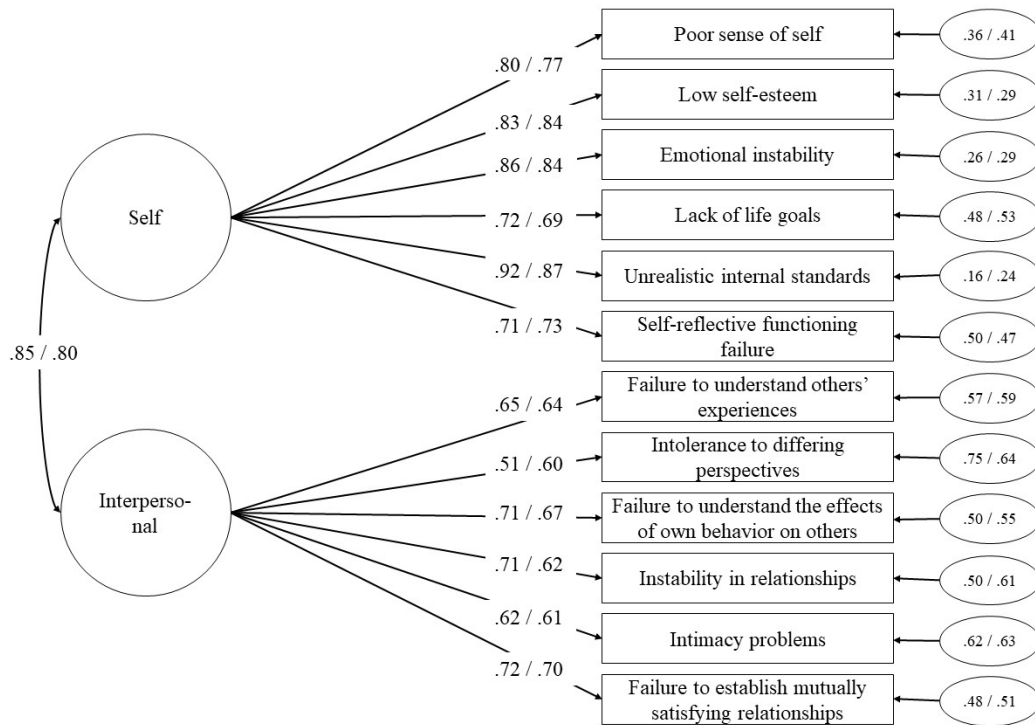


Figure 2. Standardized Coefficients of Confirmatory Factor Analysis for Two-Factor Model of the LPFS-BF-2.0
 Note. Values from the left side are from sample 1 ($n = 415$), and from right side are from sample 2 ($n = 1,011$).

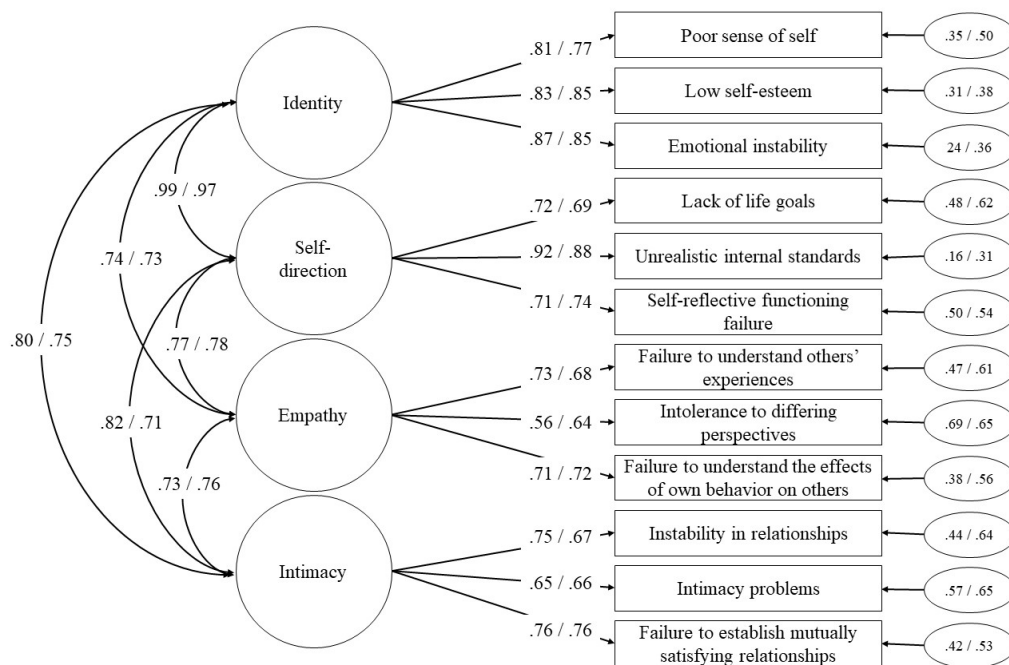


Figure 3. Standardized Coefficients of Confirmatory Factor Analysis for Four-Factor Model of the LPFS-BF-2.0
 Note. Values from the left side are from sample 1 (n = 415), and from right side are from sample 2 (n = 1,011).

Table 2
 Fit Indices of Confirmatory Factor Analysis for Alternative Models of the LPFS-BF-2.0

		χ^2	d.f.	p	CFI	TLI	SRMR	RMSEA	90% CI
M1	S1	229.408	54	< .001	.964	.956	.060	.089	.077; .101
	S2	559.129	54	< .001	.952	.942	.061	.096	.089; .104
M2	S1	156.840	53	< .001	.979	.973	.050	.069	.056; .081
	S2	273.453	53	< .001	.979	.974	.043	.064	.057; .072
M3	S1	107.344	48	< .001	.988	.983	.039	.055	.041; .069
	S2	179.782	48	< .001	.988	.983	.033	.052	.044; .060
M4	S1*	115.142	50	< .001	.987	.982	.042	.056	.043; .070
	S2	264.052	50	< .001	.980	.973	.042	.065	.057; .073
M5	S1	90.091	42	< .001	.990	.984	.033	.053	.038; .068
	S2	167.579	42	< .001	.988	.981	.030	.054	.046; .063

Note. M1, one-factor model; M2, two-factor correlated model (self and interpersonal); M3, four-factor correlated model (identity, self-direction, empathy, and intimacy); M4, four-factor model with a general second-order factor; M5, bi-factor model, with two specific uncorrelated factors (self and interpersonal); S1, sample of 415 participants; S2, sample of 1,011 participants; * A latent variable from this model showed negative variance.

with magnitudes greater than .40. Finally, as can be seen in Table 4, the number of symptoms of common mental disorders is positively correlated with greater personality dysfunction. Also, the risk for suicide behavior showed a positive correlation with the impairment of personality functioning. These results confirm hypothesis 3c.

Table 5 presents the standardized regression coefficients of the two LPFS-BF-2.0 dimensions predicting pathological personality traits and severity of personality pathology according to ICD-11. The results show that the self-

functioning score predicted more strongly the negative affectivity and disinhibition domains while the interpersonal functioning score was a more relevant predictor of detachment, antagonism/dissociality, anankastia and psychoticism domains. The self-functioning score was also the strongest predictor of ICD-11 severity of personality pathology.

The results of group comparisons are shown in Table 6. As hypothesized, participants with clinical indicators had higher levels of impairment in personality functioning than

Table 3
Reliability Coefficients of the LPFS-BF-2.0 score domains and subdomains

Sample 1 (n = 415)								
	<i>M</i>	<i>SD</i>	<i>α</i>	95% CI	<i>ω</i>	95% CI	AIC	95% CI
Total	1.93	0.67	.89	.87; .90	.89	.88; .91	.40	.36; .43
Self	2.10	0.85	.88	.86; .90	.88	.86; .90	.55	.51; .59
Interpersonal	1.77	0.60	.74	.70; .76	.74	.71; .78	.33	.28; .37
Identity	2.10	0.91	.82	.78; .84	.82	.79; .85	.60	.54; .65
Self-direction	2.09	0.88	.75	.70; .79	.76	.73; .80	.50	.44; .57
Empathy	1.69	0.63	.65	.59; .71	.67	.62; .73	.38	.32; .45
Intimacy	1.85	0.77	.67	.61; .72	.68	.62; .73	.41	.35; .48
Sample 2 (n = 1,011)								
	<i>M</i>	<i>SD</i>	<i>α</i>	95% CI	<i>ω</i>	95% CI	AIC	95% CI
Total	2.19	0.69	.88	.87; .89	.89	.87; .90	.38	.36; .40
Self	2.36	0.86	.87	.86; .88	.88	.86; .89	.53	.51; .56
Interpersonal	2.02	0.66	.75	.72; .77	.75	.72; .77	.33	.30; .36
Identity	2.34	0.94	.81	.79; .83	.81	.79; .83	.58	.55; .61
Self-direction	2.37	0.90	.74	.72; .77	.76	.74; .78	.49	.46; .53
Empathy	2.19	0.77	.66	.63; .70	.66	.63; .70	.40	.36; .43
Intimacy	1.85	0.76	.66	.62; .69	.66	.63; .70	.39	.35; .44

Note. CI, confidence interval; α , Cronbach's alpha; ω , McDonald's omega; AIC, average interitem correlation.

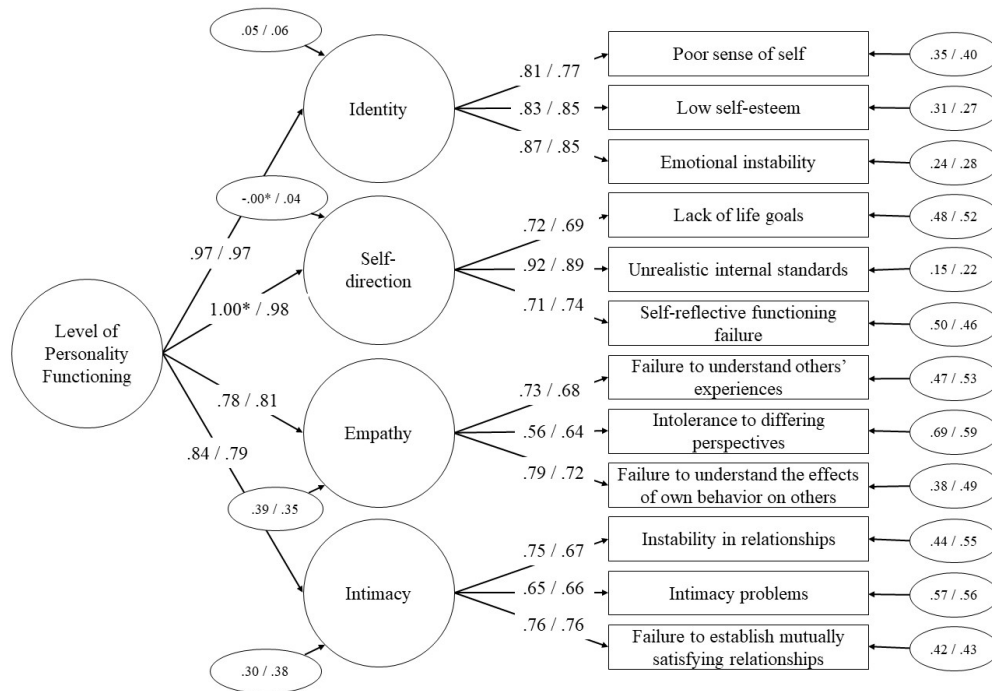


Figure 4. Standardized Coefficients of Confirmatory Factor Analysis for Four-Factor Model with a General Second-Order Factor of the LPFS-BF-2.0
Note. Values from the left side are from sample 1 (n = 415), and from right side are from sample 2 (n = 1,011). * Latent variable presented negative variance (-.003) and a Heywood case (loadind = 1.002).

participants without clinical indicators (hypothesis 3d). The only exception was about the psychological treatment criterion, in which the groups did not show statistically significant differences in Sample 1, although they showed statistically significant differences in Sample 2. In any case,

the effect sizes of the differences in the scores of the self-functioning and interpersonal functioning domains for the psychological treatment criterion were below the moderate level as expected in hypothesis 3d.

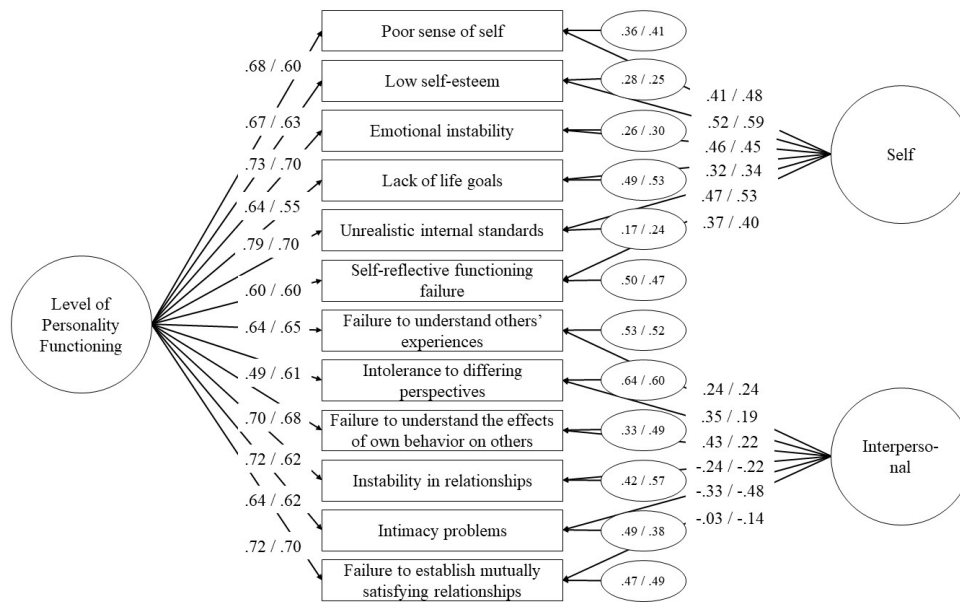


Figure 5. Standardized Coefficients of Confirmatory Factor Analysis for Bi-Factor Model with Two Specific Factors of the LPFS-BF-2.0
 Note. Values from the left side are from sample 1 ($n = 415$), and from right side are from sample 2 ($n = 1,011$).

Table 4
 Spearman's Correlation Between LPFS-BF-2.0 and Psychopathological Variables

Sample 1 (n = 415)	Total	Self	Interpersonal	Identity	Self-direction	Empathy	Intimacy
SRQ-20 Common Mental Disorder ($\alpha = .87, \omega = .87$)	.68 ^c	.71 ^c	.50 ^c	.70 ^c	.63 ^c	.37 ^c	.48 ^c
MINI Suicidality Module ($\alpha = .81, \omega = .84$)	.55 ^c	.55 ^c	.44 ^c	.55 ^c	.49 ^c	.30 ^c	.45 ^c
PID-5-SF Negative affectivity ($\alpha = .91, \omega = .91$)	.76 ^c	.78 ^c	.60 ^c	.76 ^c	.71 ^c	.48 ^c	.52 ^c
PID-5-SF Detachment ($\alpha = .92, \omega = .92$)	.76 ^c	.71 ^c	.68 ^c	.68 ^c	.65 ^c	.50 ^c	.65 ^c
PID-5-SF Antagonism ($\alpha = .90, \omega = .89$)	.44 ^c	.37 ^c	.45 ^c	.35 ^c	.34 ^c	.50 ^c	.30 ^c
PID-5-SF Disinhibition ($\alpha = .81, \omega = .80$)	.53 ^c	.49 ^c	.49 ^c	.46 ^c	.46 ^c	.46 ^c	.39 ^c
PID-5-SF Psychoticism ($\alpha = .88, \omega = .89$)	.64 ^c	.60 ^c	.58 ^c	.59 ^c	.54 ^c	.48 ^c	.49 ^c
Sample 2 (n = 1,011)	Total	Self	Interpersonal	Identity	Self-direction	Empathy	Intimacy
SASPD Severity of Personality Pathology ($\alpha = .68, \omega = .69$)	.70 ^c	.66 ^c	.60 ^c	.65 ^c	.58 ^c	.51 ^c	.51 ^c
PID-5-BF+M Negative Affectivity ($\alpha = .76, \omega = .76$)	.63 ^c	.66 ^c	.45 ^c	.67 ^c	.58 ^c	.41 ^c	.35 ^c
PID-5-BF+M Detachment ($\alpha = .77, \omega = .78$)	.61 ^c	.52 ^c	.61 ^c	.50 ^c	.47 ^c	.41 ^c	.63 ^c
PID-5-BF+M Antagonism/ Dissociality ($\alpha = .78, \omega = .79$)	.37 ^c	.28 ^c	.41 ^c	.26 ^c	.27 ^c	.40 ^c	.31 ^c
PID-5-BF+M Disinhibition ($\alpha = .76, \omega = .77$)	.57 ^c	.54 ^c	.49 ^c	.51 ^c	.50 ^c	.42 ^c	.42 ^c
PID-5-BF+M Anankastia ($\alpha = .83, \omega = .83$)	.26 ^c	.23 ^c	.25 ^c	.20 ^c	.23 ^c	.28 ^c	.16 ^c
PID-5-BF+M Psychoticism ($\alpha = .77, \omega = .77$)	.53 ^c	.46 ^c	.51 ^c	.44 ^c	.43 ^c	.43 ^c	.44 ^c

Note. ^a $p < .05$; ^b $p < .01$; ^c $p < .001$; SRQ-20, Self-Reporting Questionnaire; MINI, Mini International Neuropsychiatric Interview; PID-5-SF, Personality Inventory for DSM-5 – Short Form; SASPD, Standardized Assessment of Severity of Personality Disorder; PID-5-BF+M, Personality Inventory for DSM-5-Brief Form-Plus-Modified.

Table 5
Standardized Regression Coefficients of the LPFS-BF-2.0 Scales Predicting Pathological Personality Traits of the DSM-5 and ICD-11 Models (n = 1,011)

	Adj. R ²	β_{Self}	$\beta_{\text{Interpersonal}}$
PID-5-BF+M			
Negative Affectivity	.45	.64 ^c	.04
Detachment	.40	.20 ^c	.49 ^c
Antagonism/Dissociality	.18	.02	.42 ^c
Disinhibition	.35	.36 ^c	.29 ^c
Anankastia	.07	.12 ^b	.18 ^c
Psychoticism	.30	.22 ^c	.39 ^c
SASPD			
Severity of Personality	.50	.45 ^c	.33 ^c

Note. ^a p < .05; ^b p < .01; ^c p < .001; LPFS-BF-2.0, Level of Personality Functioning Scale – Brief Form – Version 2.0; SASPD, Standardized Assessment of Severity of Personality Disorder; PID-5-BF+M, Personality Inventory for DSM-5-Brief Form-Plus-Modified.

Table 6
LPFS-BF-2.0 Mean Differences Between Participants With and Without Clinical Indicators

	<i>n</i>	Psychiatric diagnosis				Psychological treatment				Psychiatric treatment			
		Sample 1 (n = 415)		Sample 2 (n = 1,011)		Sample 1 (n = 415)		Sample 2 (n = 1,011)		Sample 1 (n = 415)		Sample 2 (n = 1,011)	
		No 335	Yes 80	No 703	Yes 308	No 308	Yes 107	No 722	Yes 289	No 360	Yes 55	No 805	Yes 206
Total	<i>M</i>	1.84	2.34	2.03	2.55	1.91	2.00	2.12	2.34	1.88	2.30	2.08	2.59
	<i>SD</i>	0.64	0.64	0.65	0.65	0.68	0.63	0.69	0.69	0.65	0.65	0.66	0.66
	<i>g</i>	-0.78 ^c		-0.81 ^c		-0.12		-0.32 ^c		-0.65 ^c		-0.77 ^c	
Self	<i>M</i>	1.97	2.62	2.14	2.84	2.06	2.20	2.26	2.60	2.03	2.55	2.23	2.87
	<i>SD</i>	0.82	0.77	0.81	0.77	0.86	0.81	0.86	0.83	0.58	0.63	0.83	0.79
	<i>g</i>	-0.80 ^c		-0.89 ^c		-0.17		-0.40 ^c		-0.64 ^c		-0.79 ^c	
Interpersonal	<i>M</i>	1.70	2.06	1.91	2.23	1.77	1.79	2.00	2.08	1.73	2.06	1.94	2.32
	<i>SD</i>	0.57	0.62	0.62	0.68	0.61	0.58	0.65	0.68	0.58	0.63	0.63	0.69
	<i>g</i>	-0.59 ^c		-0.53 ^c		-0.04		-0.14 ^a		-0.54 ^c		-0.57 ^c	
Identity	<i>M</i>	1.97	2.65	2.10	2.89	2.06	2.22	2.23	2.61	2.03	2.57	2.20	2.90
	<i>SD</i>	0.89	0.79	0.88	0.84	0.92	0.86	0.93	0.92	0.90	0.82	0.90	0.88
	<i>g</i>	-0.80 ^c		-0.92 ^c		-0.17		-0.41 ^c		-0.62 ^c		-0.79 ^c	
Self-direction	<i>M</i>	1.98	2.58	2.18	2.80	2.06	2.19	2.29	2.59	2.03	2.53	2.26	2.83
	<i>SD</i>	0.85	0.87	0.86	0.85	0.90	0.84	0.90	0.87	0.86	0.91	0.88	0.83
	<i>g</i>	-0.71 ^c		-0.73 ^c		-0.15		-0.34 ^c		-0.57 ^c		-0.68 ^c	
Empathy	<i>M</i>	1.65	1.88	2.09	2.41	1.69	1.70	2.16	2.25	1.67	1.87	2.11	2.48
	<i>SD</i>	0.61	0.71	0.74	0.77	0.64	0.62	0.77	0.77	0.62	0.67	0.74	0.78
	<i>g</i>	-0.35 ^b		-0.42 ^c		-0.00		-0.12 ^a		-0.32 ^a		-0.48 ^c	
Intimacy	<i>M</i>	1.76	2.23	1.73	2.10	1.84	1.88	1.82	1.92	1.79	2.24	1.77	2.15
	<i>SD</i>	0.74	0.77	0.71	0.83	0.79	0.71	0.75	0.79	0.75	0.79	0.72	0.84
	<i>g</i>	-0.63 ^c		-0.48 ^c		-0.05		-0.13 ^a		-0.58 ^c		-0.50 ^c	

Note. Criterion variables were collected through self-report; *g*, Hedges' *g* effect size; differences were calculated through Welch's one-tailed *t*-test; ^a p < .05; ^b p < .01; ^c p < .001.

DISCUSSION

The current study aimed to investigate the psychometric properties of the Brazilian version of the LPFS-BF-2.0, which is a brief measure developed to assess impairments in personality functioning according to the AMPD's criterion A described in the DSM-5 (APA, 2013). The assessment of impairments in personality functioning is essential for diagnosing a personality disorder for both DSM-5's AMPD (APA, 2013) and in the ICD-11's dimensional model of personality disorders (Mulder & Tyrer, 2019). Both the DSM-5 and the ICD-11 models assume that the severity of the personality disorder can be operationalized by impairments in the self and interpersonal functioning (Reed, 2018; Skodol, 2012). The current study adds to evidence that these two strongly correlated factors adequately represent the expression of impairments in personality functioning, which is in agreement with other studies (Bach & Hutsebaut, 2018; Hutsebaut et al., 2016; Minarčíková et al., 2019; Schetsche, 2021; Spitzer et al., 2021; Weekers et al., 2019). Our findings support the generalization of the two-factor model of the severity of personality pathology also for the Brazilian population. However, it is important to mention that this strong correlation between the factors is largely in line with a general factor of impairment in personality functioning, which is considered as theoretically sufficient to describe the severity of personality pathology and which has been shown to predict different life outcomes (Hopwood et al., 2011; 2018). The generalized severity of personality pathology is well-known in the literature (Widiger et al., 2019; Zimmermann et al., 2020), and can be used to adjust the level of care for different levels of severity (Bach & Simonsen, 2021).

The Brazilian version of the LPFS-BF-2.0 presented good reliability coefficients, mainly for the general factor and for the broader domains of self-functioning and interpersonal functioning. These results, together with those of the instrument's internal structure, may be useful for clinicians and researchers to make their decision on whether or not to use a measure translated and adapted from another country. The current study provides empirical support for the use of the Brazilian version of the LPFS-BF-2.0.

Regarding the evidence of validity based on relationships to other variables found in the current study, our results underscored the relationship between the impairment of personality functioning and the severity of personality disorder. Therefore, the greater the impairment in personality functioning according to LPFS-BF 2.0, the greater the level of severity of personality pathology according to the SASPD, highlighting the theoretical and empirical (McCabe & Widiger, 2020; Gamache et al., 2021; Zimmermann et al., 2020) equivalence between the DSM-5 personality functioning impairment and the ICD-11 personality pathology severity constructs. Moreover, our results underscored the relationship between the impairment of personality

functioning and pathological personality traits (Few et al., 2015; Morey et al., 2013; Morey & Skodol, 2013). As hypothesized, the self and other functioning domains were positively correlated with all pathological personality traits included in this study. As the LPFS-BF-2.0 aims to measure the core of personality pathology through the personality functioning construct (Bender, 2013; Bender et al., 2011; Morey et al., 2011; Sharp & Wall, 2021; Skodol, 2012), is expected and the results confirm that its scores are associated with the stylistic traits of personality pathology according to the DSM-5 and ICD-11 models. Thus, the greater the impairment in personality functioning, the more intense pathological personality traits tend to be.

In the multivariate approach, via multiple linear regression analysis, our results showed that the self-functioning score predicted more strongly the negative affectivity domain while the interpersonal functioning score was a more relevant predictor of detachment, antagonism/dissociality, and psychoticism domains. For the disinhibition and anankastia domains, the coefficients of self- and interpersonal functioning were similar. Our results are close to those observed by Sorrel et al. (2022). The authors, despite the different measures used in relation to our study, found that the negative affectivity domain was more strongly correlated with the identity and self-direction domains (self-functioning domain). The authors also found that the dissociality domain showed the strongest correlations with the identity and intimacy domains. Overall, these findings show us that impairments in the self-functioning domain are important predictors of intense and poorly regulated experiences of negative emotions. In contrast, impairments in interpersonal functioning contribute significantly to the prediction of varied behavioral patterns, especially those related to antisocial attitudes. According to Zimmerman et al. (2022), the most robust association patterns available in the literature are between the dimensions of self-functioning and negative affectivity and between interpersonal functioning and facets of antagonism.

We also observed in our study the well-established relationship between the level of personality functioning and psychological distress (Stricker & Pietrowsky, 2022; Widiger et al., 2019). Widiger et al. (2019) argued that the level of impairment in personality functioning may be closely related to the general factor of psychopathology, as it would be difficult to imagine a person with high vulnerability for diffuse psychopathological expression to present an adaptive and healthy functioning of the personality. Sleep et al. (2019) observed that the level of personality functioning is strongly correlated to several mental disorder syndromes. Thus, the well-known overlap between personality and psychopathological symptoms (see for example Kotov et al., 2017) is confirmed in our study.

Limitations and Future Studies

Some limits of this research, as well as future directions of investigation, need to be highlighted. The present study has a monomethod bias, since only self-report instruments were used, which may have inflated the effect sizes of the correlations. New studies including a multitrait-multimethod approach can increase information about the relationships of the LPFS-BF-2.0 with other constructs of interest measured by methods other than self-report. Another limitation refers to the samples in this study. Participants do not adequately represent the Brazilian

population, as more than 90% of them claim to have higher education and the percentage of the Brazilian population estimated to this level is 17.4% according to the Brazilian Institute of Geography and Statistics. Thus, the results obtained in this study are limited to the characteristics of the samples studied, and it is recommended that future research include participants with greater sociodemographic heterogeneity. For that, collections with probabilistic or even non-probabilistic methods, but in the face-to-face format (instead of online surveys) in places of different social classes, can increase the representation of the Brazilian population.

FINAL CONSIDERATIONS

The present study shows that the LPFS-BF-2.0 scores are useful and have empirical support to reliably and validly estimate the level of personality functioning of Brazilians. The results confirm that higher scores on the LPFS-BF-2.0 are predictors of higher levels of pathological personality traits.

We expect that the study presented in this paper can provide technical, scientific, and theoretical support for scientists and practitioners in the use of the Brazilian version of the LPFS-BF-2.0 for the assessment of the level of personality functioning in clinical and scientific contexts in Brazil.

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