

Proposal for an HiTOP-based evaluation scale of traits of the Paranoid Personality Disorder

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Abstract

Aim of the study: This study aimed to operationalize a version of the Dimensional Clinical Personality Inventory 2 (IDCP-2) for the screening of typical traits of the Paranoid personality disorder (PPD) from the perspective of the HiTOP, as well as investigate its internal and external validity.

Material and methods: We selected IDCP-2 factors that appropriately represented PPD traits according to the HiTOP. We created new items for the Rudeness factor. The participants were 454 Brazilian adults (aged 18-70 years). We administered the following scales: IDCP-PPD, PID-5, and CAT-PD-SV.

Results: We found a one higher-order factor structure for the IDCP-PPD. The factors that composed this higher-order factor reflect traits from both HiTOP spectra with PPD is represented, Thought disorder and Antagonistic externalizing. The expected correlations between IDCP-PPD factors and external measures were observed. Groups comparison indicated people with high levels of pathological traits in the external measures showing higher means in the IDCP-PPD scores in comparison to people with lower means in these measures.

Discussion: The factors of the IDCP-PPD demonstrated a good capacity for the assessment of PPD traits.

Conclusion: The findings of our study indicate the IDCP-PPD scale as a useful tool for operationalizing HiTOP for clinical practice. Future studies should test our findings in patients with a PPD diagnosis.

dimensional models; psychopathology; Cluster A; pathological traits; psychological assessment

1 INTRODUCTION

Traditionally, mental disorders have been recognized based on categorical models, as presented in diagnostic manuals such as ICD-10 and DSM-5. Despite being used worldwide, studies indicate flaws in these models (e.g., excessive comorbidities, heterogeneity of symptoms) and suggest the best suitability and applicability of dimensional models [1]. In a recent meta-anal-

ysis, Haslam et al. [2] found ample evidence of dimensionality for almost all mental disorders.

Based on dimensional assumptions, the Hierarchical Taxonomy of Psychopathology (HiTOP; [3,4] has emerged as a robust taxonomic model for mental disorders. The HiTOP was developed from empirical evidence on the classification of psychopathologies and is hierarchically organized into five levels, from the broadest to the most specific: super-spectra, spectra, sub-factors, syndromes/disorders and, maladaptive traits. Although empirically based, the model lacks studies that expand its use in clinical practice [5,6]. Besides, the developers of the mod-

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el recommend as high priority the development or update of assessment scales based on the HiTOP [3].

Following these recommendations, previous studies sought to revise and validate versions of the Dimensional Clinical Personality Inventory 2 (IDCP-2) [7] for the assessment of pathological traits based on HiTOP. The IDCP-2 is a self-report tool for the evaluation of 47 pathological traits organized in 12 dimensions (Dependency, Aggressiveness, Mood instability, Eccentricity, Attention seeking, Distrust, Grandiosity, Isolation, Criticism avoidance, Self-sacrifice, Conscientiousness, and Inconsequence).

Previous studies indicate correspondence between the IDCP-2 factors and the maladaptive traits present in the HiTOP [8]. Updated and validated versions of IDCP-2 for HiTOP are now available, such as the IDCP Avoidant Personality Disorder Scale (IDCP-AvPD) [9], the IDCP Borderline Personality Disorder Scale (IDCP-BPD; [10], and the IDCP Histrionic Personality Disorder Scale (IDCP-HPD; [11]. We did not find studies focusing on the evaluation of the pathological traits of the Paranoid PD (PPD), the focus of this study.

PPD is characterized by a pattern of excessive distrust and suspicion concerning others and their intentions [12]. Individuals with PPD tend to show an increase in traits such as suspiciousness, hostility, and unusual thoughts and beliefs [13,14], which are manifested through interpersonal problems [15], cognitive rigidity, and hostile or aggressive tendencies towards others [16].

In HiTOP, the PPD is a component of the Thought disorder and Antagonistic externalizing spectra [3–5,17]. The Thought disorder spectrum captures distortions in perception and cognition, as well as the tendency to move away from reality [3]. Mistrust, suspiciousness, and deficit in interpersonal relationships are represented by the perceptual dysregulation and eccentricity traits of this spectrum. The Antagonistic externalizing spectrum represents an aggressive and insensitive style to other people [3]. The rudeness trait of this spectrum captures the hostile and aggressive tendencies typical of PPD. Although the PPD traits are represented in the model, we did not find studies focusing on these traits under the perspective of the HiTOP.

Combining the clinical relevance of the PPD traits with the need for studies that seek to provide empirical bases for the implementation of HiTOP in professional practice [5,6], this study aimed to operationalize a version of IDCP-2 for the screening of typical traits of the PPD from the perspective of HiTOP. Therefore, we created the IDCP Paranoid Personality Disorder Scale (IDCP-PPD), as well as investigated its internal and external validity.

2 MATERIAL AND METHODS

The method was divided into two stages. The first (Stage I) referred to the procedures for the development of the IDCP-PPD, a self-report measure focusing on the evaluation of typical PPD traits, based on the HiTOP; the second (Stage II) aimed to verify the psychometric properties of the IDCP-PPD, in a community sample.

2.1 Stage 1 – Development of the IDCP Paranoid Personality Disorder Scale (IDCP-PPD)

2.1.1 Procedure

At first, we selected the spectra of HiTOP that cover PPD. Relevant traits for PPD were selected, deliberately attempting to maintain as many traits as possible. Based on this, we searched for traits definitions in the literature, mainly according to the measurement tests mentioned in Table 1 of Kotov et al., [3]. We use definitions from Personality Inventory for DSM-5 (PID-5) [18] and Computerized Adaptive Test of Personality Disorder static form (CAT-PD-SF) [19]. Then, IDCP-2 factors that appropriately represented PPD traits were selected. In this procedure, we identified that some relevant traits were not covered by any IDCP-2 factors. We created new items aiming to operationalize traits not covered by any factor from IDCP-2. Items development was conducted independently by the authors. We selected items by consensus according to three criteria: content (presenting information relevant to the construct), clarity (present information in a straightforward way), and redundancy (avoiding items with ambiguous or repeated information). After this stage, the first version of the IDCP-PPD was delineated. We administered this

version of IDCP-PPD and verified its validity, as described in Stage 2.

2.2 Stage 2 – Verification of the Psychometric Properties of the IDCP-PPD Participants

The sample consisted of 454 Brazilian adults recruited by convenience. The inclusion criterion was age ≥ 18 . Participants' age ranged from 18 to 70.8 years old ($M = 27.82$; $SD = 9.04$). The majority of the sample was female (67.2%), Caucasian (46.7%), and with a high school diploma (41.6%). Some of them reported having attended psychiatric treatment (13.4%), and 16.4% to psychotherapy. Specifically, concerning mental disorders and symptoms, some participants reported past or current suicidal ideation (52.2%), suicide attempts (20.5%), and having received a psychiatric diagnosis (13.4%).

The expectation for PPD occurrence in community samples is about 2.3% [12], and 3.8% for PD from Cluster A [20]. In an epidemiological study in Brazil, where our study was placed, a frequency of 4.3% of cases of PD from Cluster A was observed [21]. Therefore, for the present study, we expected people with elevation in typical traits of PPD, although there should be a small number of people with PPD diagnosis.

2.2.1 Measures

Dimensional Clinical Personality Inventory – Paranoid Personality Disorder scale (IDCP-PPD)

The IDCP-PPD is a scale originated from Dimensional Clinical Personality Inventory 2 (IDCP-2) [7] based on the PPD traits according to HiTOP [3,5]. The IDCP-2 is a self-report scale for the evaluation of pathological personality traits. This scale is composed of 206 items, 47 factors, and 12 dimensions: Dependency, Aggressiveness, Mood instability, Eccentricity, Attention seeking, Distrust, Grandiosity, Isolation, Criticism avoidance, Self-sacrifice, Conscientiousness, and Inconsequence). The items should be answered on a 4-point Likert scale ranging from 1 = Has nothing to do with me to 4 = Has everything to do with me. In this study, we administered five factors of IDCP-2 (23 items): Intimacy avoidance, Intimate relationship avoidance, Suspiciousness, Persecutoriness, and Antago-

nism. The validity of these factors was observed in previous studies [22–26]. The IDCP-PPD version is also composed of a new score, the Rudeness factor, best described further in this paper. In total, the IDCP-PPD is composed of 30 items.

Personality Inventory for DSM-5 (PID-5) [18,27]

The PID-5 is a self-report test aimed at assessing the 25 facets of maladaptive personality traits described in section III of the DSM-5, which can be combined into five domains (Negative Affect, Detachment, Antagonism, Disinhibition, Psychoticism). This test is composed of 220 items that should be responded on a 4-point Likert scale ranging from 0 = Very false or often false to 3 = Very true or often true. In this study, we administered three facets (23 items): Intimacy avoidance ($\alpha = .80$), Withdrawal ($\alpha = .90$) and Suspiciousness ($\alpha = .53$). Studies support the psychometric properties of PID-5 [28].

Computerized Adaptive Assessment of Personality Disorder Static Form (CAT-PD-SF) [19]

The CAT-PD-SF contains 216 items assessing 33 maladaptive personality traits organized within five domains of Negative Emotionality, Detachment, Antagonism, Disinhibition, and Psychoticism. Participants rate how well the statements describe themselves using a 5-point Likert-type scale ranging from 1 = for very untrue of me to 5 = for very true of me. For this study, we selected the Rudeness factor ($\alpha = .84$; seven items).

2.2.2 Procedures

This study followed the ethical research procedures after the Declaration of Helsinki [29], and was approved by a Brazilian research ethics committee. Data collection was performed online. We shared the research link on the social media website Facebook, inviting individuals to participate and relying on the snowball strategy to reach a more substantial number of participants.

2.2.3 Data Analysis

We investigated the psychometric properties of IDCP-PPD through exploratory factor analysis,

with Geomim rotation and Maximum Likelihood Robust (MLR) estimator. We determined the number of factors using parallel analysis for polychoric variables [30]. We calculated internal consistency (Cronbach’s α and McDonald’s ω) for all the scores. Internal structure analysis was performed on Mplus software version 7.

The IDCP-PPD’s external validity was verified using correlations between these factors and the respective external measures (see Table 1). We also proceeded to bootstrap ($k=10.000$; bias-corrected 95% confidence intervals – *CI*) two-sample t-test, including the Levene’s test for equality of variances. We used .05 as a significance level and the Cohen’s *d* as an effect size indicator. The Cohen’s *d* was interpreted as 0.01 (very small), 0.20 (small), 0.50 (medium), 0.80 (large), 1.20 (very large), and 2.0 (huge) [31,32]. The groups were created by the sum of the fol-

lowing external measures scores: Intimacy Avoidance, Withdrawal, e Suspiciousness (PID-5), and Rudeness (CAT-PD-SF). We standardized the scores in *z* ($M = 0$; $SD = 1$). Composed the pathological group ($n = 70$) people with one or more standard deviations above mean, and people with one or more standard deviations below mean composed the healthy group ($n = 71$). We used the SPSS software version 23 for mean comparisons.

3 RESULTS

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

Table 1. Spectra, HiTOP traits, HiTOP relevant traits, IDCP-2 Factors, and developed measures and respective external measures

Spectra	HiTOP traits	HiTOP Relevant traits	IDCP-2 factors	Respective external measures
Thought Disorder	Eccentricity	Eccentricity	Intimacy avoidance Intimate relationships avoidance	Intimacy Avoidance (PID-5) Withdrawal (PID-5)
	Cognitive/perceptual dysregulation	Cognitive/perceptual dysregulation	Suspiciousness Persecutoriness	Suspiciousness (PID-5)
	Unusual beliefs and experiences	-	-	-
	Fantasy proneness	-	-	-
Antagonistic externalizing	Attention seeking	-	-	-
	Callousness	-	-	-
	Deceitfulness	-	-	-
	Grandiosity	-	-	-
	Manipulativeness	-	-	-
	Rudeness	Rudeness	Rudeness (6/10) Antagonism	Rudeness (CAT-PD)
	Egocentricity	-	-	-
	Dominance	-	-	-
	Flirtatiousness	-	-	-
(low) Timorousness	-	-	-	

Note. We bold the factor created for the study (final number of items/number of created items).

We selected three core pathological traits of the PPD of the Thought disorder and Antagonistic

externalizing spectra, according to previous evidence on PPD [3,13–16]. As the factors of IDCP-2 did not cover the Rudeness trait, we developed a new set of items to measure this trait. From the 10 items created to compose this new score, six were selected for administration in Stage 2. The new factor was labeled as Rudeness (item example: “I get angry when I think that I cannot trust in people.”).

We investigated the psychometric properties of IDCP-PPD. Parallel analysis indicated a one-factor structure. Based on that, we performed an AFE. We obtained the following fit indices: $\chi^2/df = 4.45$; RMSEA = .08; CFI = .95; TLI = .91 e SMR = .04. Table 2 shows the factor loadings and internal consistency for the factors and higher-order factors.

Table 2. Factor loadings of factors in the one-factor solution.

Measures	α	ω	Distrust
Intimacy avoidance	.85	.85	.59
Intimate relationships avoidance	.89	.89	.40
Suspiciousness	.76	.77	.85
Persecutoriness	.68	.69	.74
Rudeness ^a	.79	.79	.62
Antagonism	.81	.82	.51
α			.90
ω			.90

Note. a = developed measures.

All factor loadings were higher than .40. The internal consistency estimates were higher than .70 for all factors excepted Persecutoriness ($\alpha=.68$; $\omega=.69$). The internal consistency for

the IDCP-PPD total score was excellent ($\alpha=.90$; $\omega=.90$). Table 3 presents the correlations between the IDCP-2 factors and the higher-order factor and external measures.

Table 3. Correlations between IDCP-PPD scores and external measures.

	Intimacy avoidance (PID-5)	Withdrawal (PID-5)	Suspiciousness (PID-5)	Rudeness (CAT-PD)
Intimacy avoidance	.30**	.75**	.33**	.27**
Intimate relationships avoidance	.80**	.40**	.25**	.18**
Suspiciousness	.27**	.51**	.54**	.30**
Persecutoriness	.18**	.35**	.54**	.31**
Rudeness ^a	.21**	.40**	.52**	.45**
Antagonism	.13**	.29**	.40**	.50**
IDCP-PPD	.47**	.65**	.61**	.47**

Note. a = developed measure; In bold are higher correlations; In gray shading are the expected correlations according to Table 1.

The expected correlations were observed (see Table 1), with exception to some cases where larger effect sizes were found for other measures beyond the predicted. Rudeness factor from IDCP-2 showed a higher correlation with the Suspi-

ciousness facet (PID-5). The IDCP-PPD total score showed significant correlations with all external measures, and especially with the Withdrawal facet (PID-5). Table 4 presents the mean comparisons between the healthy and pathological groups.

Table 4. Mean comparison between healthy and pathological groups in the IDCP-PPD scores.

Factors	Groups	M	SD	CI 95%		t (df=139)	d (p)
				Lower	Upper		
Intimacy avoidance	Healthy	1.08	.21	1.03	1.13	-11.62	1.97* (<.001)
	Pathological	2.25	.82	2.06	2.44		
Intimate relationships avoidance	Healthy	1.07	.24	1.02	1.13	-7.58	1.28* (<.001)
	Pathological	1.98	.97	1.74	2.21		
Suspiciousness	Healthy	1.18	.28	1.11	1.24	-9.66	1.64* (<.001)
	Pathological	2.19	.83	1.99	2.38		
Persecutoriness	Healthy	1.33	.40	1.23	1.42	-8.64	1.46* (<.001)
	Pathological	2.26	.80	2.07	2.45		
Rudeness	Healthy	1.45	.43	1.34	1.55	-12.44	2.10** (<.001)
	Pathological	2.65	.68	2.48	2.81		
Antagonism	Healthy	1.30	.37	1.22	1.39	-1.28	1.74* (<.001)
	Pathological	2.34	.77	2.16	2.53		
IDCP-PPD Total score	Healthy	1.23	.18	1.19	1.28	-14.72	2.49** (<.001)
	Pathological	2.28	.56	2.14	2.41		

Note. a = developed measures; M= Mean; SD = Standard deviation; CI = Confidence interval for the mean; df = degrees of freedom; *=very large effect sizes; **=huge effect sizes.

The pathological group presented significantly higher means in all scores of the IDCP-PPD. The effect sizes varied from large to huge, with the Rudeness factor and the total score showing the larger effect sizes.

4 DISCUSSION

HiTOP is a hierarchical dimensional taxonomic model that aims to change the current panorama of the classification of mental disorders based on empirical evidence [3,4]. Clinical scales should be based on this model, enabling the operationalization of HiTOP in professional practice [5,6]. We aimed to operationalize and validate a version of IDCP-2 for the evaluation of pathological traits of PPD based on HiTOP. Our findings indicate the usability of the IDCP-PPD in the clinical context for the identification and screening of pathological traits of the PPD.

We found a one-factor solution for the IDCP-PPD. This factor is composed of items assessing the tendency to distrust others, difficulties in interpersonal relationships, hostility, and aggressiveness. These are typical characteristics of PPD [13–16]. These characteristics are represented in the Thought disorder and Antagonistic external-

izing spectra [3,17], where the PPD is allocated in the HiTOP [5].

We found the expected associations between the IDCP-PPD factors and external measures [18,19] according to the HiTOP specifications [3]. An exception to this was the Rudeness factor, which was more associated with the Suspiciousness facet of PID-5 and not with the Rudeness factor of CAT-PD. Although we did not expect this association, it is consistent with the content evaluated by the factors Rudeness (i.e., generalized irritation, and anger based on the belief that people always want to harm) and Suspiciousness (i.e., the tendency to distrust the intentions of others, and feeling to be persecuted and mistreated). The effect size of the association between these factors was similar to what we observed with the CAT-PD Rudeness factor. Moreover, it is worth noting that in our study, the Suspiciousness facet of PID-5 had low internal consistency ($\alpha = .53$), which may also explain the lower correlation with this facet.

The comparison between groups indicated that the IDCP-PPD is useful to discriminate individuals high in the PPD traits from individuals low in these traits. In other words, the group with high scores had higher means in the factors and the total score of the IDCP-PPD. The Rude-

ness and Intimacy avoidance factors were those to present the best performance to differentiate the groups. The Rudeness trait is a representative of the hostile tendency of PPD [16], and was created specifically for this study. The Intimacy avoidance factor, which assesses the difficulty of establishing close relationships [24], represents the interpersonal difficulty to trust even in intimate people, a typical trait of the PPD [15].

Furthermore, although not presented as a formal hypothesis in this study, we expected that two IDCP-PPD factors evaluating the PPD's core pathological traits, Persecutoriness and Suspiciousness, would be those to present the best performances to discriminate the groups. However, this expectation was not observed. Maybe the results were impacted by the low internal consistency reliability of the Suspiciousness facet (PID-5), the external measure representing the core pattern of the PPD.

Our findings are consistent with previous empirical evidence with PPD [13,14], and more specifically, with the HiTOP model [3,5,17]. We recommend that future studies investigate the associations between the Suspiciousness and Persecutoriness factors, as the findings over them were not consistent with what was expected. For instance, the use of the network analysis approach can assist in investigating the role of these factors in the associations with the PPD pathological traits.

The factors of the IDCP-PPD demonstrated a good capacity for the assessment of PPD traits, indicating the scale as a useful tool for operationalizing HiTOP for clinical practice. Although initial, the findings of this study suggest that the IDCP-PPD allows a global investigation of the presence of PPD, as well as of specific traits (Intimacy avoidance, Intimate relationships avoidance, Suspiciousness, Persecutoriness, Rudeness, Antagonism). Knowing the scores on pathological traits can assist the clinician in choosing the best intervention based on the observed impairments.

Although we recommend the use of IDCP-PPD in clinical practice for screening PPD traits, our findings should be considered in the light of some methodological limitations. First, the sample consisted of individuals from the general population, not including people with a known diagnosis of PPD. Second, the external measures used in this study do not have cutoffs, precluding to establish a group genuinely pathological. Given these limitations, we suggest the conduction of further studies verifying the discriminative capacity of the IDCP-PPD for people with and without a PPD diagnosis, as well as seeking to establish a clinical cutoff for the scale.

APPENDIX

IDCP-PPD general structure

IDCP-PPD factor	Factor definition	Number of items	Item example
Intimacy avoidance	Difficulty in establishing intimate relationships and sharing private information with others.	4	I lack interest in having contact with people.
Intimate relationships avoidance	Difficult to get emotionally involved, and little interest in intimate friendships.	4	I prefer to be alone without a loving partner.
Suspiciousness	Exaggerates suspicion that others will cause harm.	5	I think it is necessary always to test people to see if they are not harming me.
Persecutoriness	Feelings and beliefs about being the target of secret plans or about being secretly monitored.	3	I know people are watching me.
Rudeness*	Generalized impatience and anger based on the belief that people always want to cause harm.	6	I get angry when I think that I cannot trust people.
Antagonism	aggressive behavior and interest in aggressiveness, with repression and enforcement initiatives.	7	People who have harmed me need to pay for it.
IDCP-PPD total score	The total score represents a tendency to exhibit a paranoid personality pattern	29	—

Note. * Factor developed in the study. The other factors are from the IDCP-2.

REFERENCES

1. Clark LA, Cuthbert B, Lewis-Fernández R, Narrow WE, Reed GM. Three Approaches to Understanding and Classifying Mental Disorder: ICD-11, DSM-5, and the National Institute of Mental Health's Research Domain Criteria (RDoC). *Psychol Sci Public Interes*. 2017;18(2):72–145.
2. Haslam N, McGrath MJ, Viechtbauer W, Kuppens P. Dimensions over categories: A meta-analysis of taxometric research. *Psychol Med*. 2020;50(9):1418–32.
3. Kotov R, Waszczuk MA, Krueger RF, Forbes MK, Watson D, Clark LA, et al. The hierarchical taxonomy of psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *J Abnorm Psychol*. 2017;126(4):454–477.
4. Kotov R, Krueger RF, Watson D. A paradigm shift in psychiatric classification: the Hierarchical Taxonomy Of Psychopathology (HiTOP). *World Psychiatry*. 2018;17(1):24–5.
5. Conway CC, Forbes MK, Forbush KT, Fried EI, Hallquist MN, Kotov R, et al. A Hierarchical Taxonomy of Psychopathology Can Transform Mental Health Research. *Perspect Psychol Sci*. 2019;14(3):419–36.
6. Conway CC, Simms LJ. Maximizing the applied value of structural models of psychopathology: Introduction to a special issue of *Personality and Mental Health*. *Personal Ment Health*. 2020;14(1):3–8.
7. Carvalho, LF, Primi R. Manual técnico do Inventário Dimensional Clínico da Personalidade 2 (IDCP-2) e versão triagem (IDCP-triagem). São Paulo: Pearson; in press.
8. Pianowski G, Carvalho LF, Miguel FK. Investigating the spectra constellations of the hierarchical taxonomy of psychopathology (HiTOP) model for personality disorders based on empirical data from a community sample. *Rev Bras Psiquiatr*. 2019;41(2):148–152.
9. Carvalho LF, Ferraz AS, Otoni F. Development of the Dimensional Clinical Personality Inventory – Avoidant version based on the HiTOP. *Aval psicol*. 2020;19(1):29–37.
10. Carvalho LF, Pianowski G, Bacciotti J, Reis AM. Assessing borderline personality disorder based on the Hierarchical Taxonomy of Psychopathology (HiTOP): Dimensional Clinical Personality Inventory 2 – BPD. *Arch Psychiatry Psychother*. 2018;20(4):77–87.
11. Carvalho LF, Sette CP, Ferrari BL. Development of a Scale to Measure Histrionic Traits According to the Hierarchical Taxonomy of Psychopathology. *Temas em Psicol*. 2019;27(3):707–720.
12. American Psychiatry Association. *Diagnostic and Statistical Manual of Mental Disorders – DSM-5*. 5th ed. Washington: American Psychiatric Association; 2013.
13. Anderson J, Snider S, Sellbom M, Krueger R, Hopwood C. A comparison of the DSM-5 Section II and Section III personality disorder structures. *Psychiatry Res*. 2014;216(3):363–72.
14. Hopwood CJ, Thomas KM, Markon KE, Wright AGC, Krueger RF. DSM-5 personality traits and DSM-IV personality disorders. *J Abnorm Psychol*. 2012;121(2):424–432.
15. Hengartner MP, Müller M, Rodgers S, Rössler W, Ajdacic-Gross V. Interpersonal functioning deficits in association with DSM-IV personality disorder dimensions. *Soc Psychiatry Psychiatr Epidemiol*. 2014;49(2):317–25.
16. Lee RJ. Mistrustful and Misunderstood: a Review of Paranoid Personality Disorder. *Curr Behav Neurosci Reports*. 2017;4(2):151–165.
17. Kotov R, Jonas KG, Carpenter WT, Dretsch MN, Eaton NR, Forbes MK, et al. Validity and utility of Hierarchical Taxonomy of Psychopathology (HiTOP): I. Psychosis superspectrum. *World Psychiatry*. 2020;19(2):151–72.
18. Krueger RF, Derringer J, Markon KE, Watson D, Skodol AE. Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychol Med*. 2012;42(9):1879–90.
19. Simms LJ, Goldberg LR, Roberts JE, Watson D, Welte J, Rotterman JH. Computerized adaptive assessment of personality disorder: Introducing the CAT-PD project. *J Pers Assess*. 2011;93(4):380–9.
20. Winsper C, Bilgin A, Thompson A, Marwaha S, Chanen AM, Singh SP, et al. The prevalence of personality disorders in the community: A global systematic review and meta-analysis. *Br J Psychiatry*. 2020;216(2):69–78.
21. Santana GL, Coelho BM, Wang YP, Filho ADPC, Viana MC, Andrade LH. The epidemiology of personality disorders in the Sao Paulo Megacity general population. *PLoS One*. 2018;13(4).
22. Carvalho LF, Pianowski G, Miguel FK. Revisão da dimensão agressividade do inventário dimensional clínico da personalidade. *Psicol Teor e Prática*. 2015;17(3):146–63.
23. Carvalho LF, da Silva GFC. Review of the self-sacrifice dimension of the dimensional clinical personality inventory. *Psicol Reflex e Crit*. 2016;29(1).
24. Carvalho LF, Arruda W. Revisão da dimensão isolamento do inventário dimensional clínico da personalidade. *Temas em Psicologia*. 2016;24:47–61.
25. Carvalho LF, Pianowski G. Revision of the Dependency Dimension of the Dimensional Clinical Personality Inventory. *Paideia*. 2015;25(60):57–65.
26. Carvalho LF, Martins DF. Revisão da dimensão desconfiança do Inventário Dimensional Clínico da Personalidade. *Psico*. 2017;48(2):152.
27. Krueger RF, Derringer J, Markon KE, Watson D, Skodol AE. *The Personality Inventory for DSM-5 (PID-5)—Adult*. Washington: American Psychiatric Association; 2014.
28. Al-Dajani N, Gralnick TM, Bagby RM. A Psychometric Review of the Personality Inventory for DSM-5 (PID-5): Current Status and Future Directions. *J Pers Assess*. 2016;98(1):62–81.
29. World Medical Association. *World Medical Association declaration of Helsinki: Ethical principles for medical research*

- involving human subjects. *Journal of the American Medical Association*. 2013;310:2191–2194.
30. Horn JL. A rationale and test for the number of factors in factor analysis. *Psychometrika*. 1965;30(2):179–185.
31. Cohen J. *Statistical power analysis for the behavioral sciences*. 2th ed. New Jersey: Erlbaum; 1988.
32. Sawilowsky SS. New Effect Size Rules of Thumb. *J Mod Appl Stat Methods*. 2009;8(2):597–599.