

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2020-12-16

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Pires, R., Sousa Ferreira, A., Gonçalves, B., Henriques-Calado, J. & Paulino, M. (2019). The Portuguese version of the Personality Inventory for the DSM-5 in a community and a clinical sample. *Personality and Mental Health*. 13 (1), 40-52

Further information on publisher's website:

[10.1002/pmh.1437](https://doi.org/10.1002/pmh.1437)

Publisher's copyright statement:

This is the peer reviewed version of the following article: Pires, R., Sousa Ferreira, A., Gonçalves, B., Henriques-Calado, J. & Paulino, M. (2019). The Portuguese version of the Personality Inventory for the DSM-5 in a community and a clinical sample. *Personality and Mental Health*. 13 (1), 40-52, which has been published in final form at <https://dx.doi.org/10.1002/pmh.1437>. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Title: The Portuguese version of the Personality Inventory for the DSM-5 (PID-5) in a community and a clinical sample

Running head: Portuguese PID-5 in a community and a clinical sample

Authors: Rute Pires^{1,2}, Ana Sousa Ferreira^{1,3}, Bruno Gonçalves^{1,2}, Joana Henriques-Calado^{1,2}, Marco Paulino^{1,4}

¹Faculdade de Psicologia, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal

²CICPSI, Faculdade de Psicologia, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal

³Instituto Universitário de Lisboa - Business Research Unit (BRU-IUL), Av. Forças Armadas, 1649-026 Lisboa, Portugal

⁴Faculdade de Medicina, Universidade de Lisboa, Avenida Professor Egas Moniz, 1649-028 Lisboa, Portugal

Acknowledgments.

This work was supported by Fundação para a Ciência e a Tecnologia, grant UID/GES/00315/2013

Corresponding author: Rute Pires

Address: Faculdade de Psicologia, Universidade de Lisboa, Alameda da Universidade, 1649-013 Lisboa, Portugal. Tel.: +351 21 794 36 55.

E-mail address: rpires@psicologia.ulisboa.pt

Abstract

The Personality Inventory for DSM-5 (PID-5) measures the maladaptive traits of the model for personality and its disorders, as proposed in Section III of the DSM-5. The current study aimed to examine whether the Portuguese PID-5 distinguished non-clinical participants ($N = 1223$, $M_{age} = 36.73$, $SD = 15.72$) from clinical participants ($N = 202$, $M_{age} = 43.82$, $SD = 11.33$) with respect to dysfunctional personality traits and to explore the PID-5 factor structure in both samples. The PID-5 scale medians were higher in the clinical sample than in the community sample. All analyses were statistically significant ($p \leq .001$) with medium size effects. In the community sample, a five factor structure emerged and the factors resembled the PID-5 domains. However, in the clinical sample, a four factor structure was retained, in which the Psychoticism domain did not clearly emerge. The composition of the clinical sample along with its small size may account for these unexpected results. Overall, the results provide evidence of the PID-5's ability to distinguish between psychiatric and community individuals, and of the model's structural similarity in community samples, across studies and nationalities. More research is required to understand the Portuguese PID-5 structure in clinical samples.

Key words: DSM-5 personality trait model, personality disorders, Portuguese PID-5, psychometric properties

Introduction

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM; APA, 2013), in its Section III, proposes a hybrid dimensional-categorical model for conceptualizing Personality Disorders (PD) that provides an alternative to the official PD categorical classification (Section II). In this alternative personality model, the diagnosis of

personality disorder includes an assessment of the level of personality functioning (Criterion A) and of specific patterns of pathological traits (Criterion B), the latter assessed through the Personality Inventory for DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012). The PID-5 characterizes 25 maladaptive traits in which individuals differ (facets), nested within five higher order domains of personality variation (Negative Affectivity vs. Emotional Stability, Detachment vs. Extraversion, Antagonism vs. Agreeableness, Disinhibition vs. Conscientiousness, and Psychoticism vs. Lucidity). The development of the PID-5 dimensions was influenced by previous existing models and measures of maladaptive personality traits and operationalized experts' views of the most important clinical features of the PD considered in the DSM-IV-TR (DeYoung, Carey, Krueger, & Ross, 2016; Krueger et al., 2012).

The DSM-5 trait model has received substantial empirical support with research consistently revealing that at least four of the PID-5 domains (the association between Psychoticism and Openness is the most ambiguous and requires further investigation, e.g., Sleep, Hyatt, Lamkin, Maples-Keller, & Miller, 2017) appear to be maladaptive extensions of the five-factor model (FFM; Costa & Widiger, 2012; Gore & Widiger, 2013; Krueger & Markon, 2014; Maples et al., 2015; Skodol et al., 2011; Suzuki, Samuel, Pahlen, & Krueger, 2015; Suzuki, Griffin, & Samuel, 2017; Thomas et al., 2013; Wright, Phalen, & Krueger, 2017). Resemblance with the domains of Harkness' Personality Psychopathology Five model (PSY-5; Harkness & McNulty, 1994) has also been empirically supported (Anderson et al., 2013; Finn et al., 2014).

The PID-5 has recently been translated into a number of different languages including Italian (Fossati, Krueger, Markon, Borroni, & Maffei, 2013), Dutch (De Fruyt et al., 2013; De Clercq et al., 2014), German (Zimmermann et al., 2014), French (Roskam et al., 2015),

Danish (Bach, Maples-Keller, Bo, & Simonsen, 2016), Arabic (Al-Attiyah, Megreya, Alrashidi, Dominguez-Lara, & Al-Sheerawi, 2017), Spanish (Gutiérrez et al., 2017), Portuguese (Pires, Ferreira, & Guedes, 2017a) and Czech (Riegel et al., 2017). Research on its psychometric properties (internal consistency, temporal stability, concurrent validity and factor structure) has revealed that the PID-5 is a reliable measure and that its structure replicates across samples and countries, even non-Western countries, converging conceptually with other personality and psychopathology measures.

Despite research supporting the DSM-5 trait model and the PID-5, the American Psychiatric Association has rejected replacement of the categorical classification of personality disorders by this alternative model, sustaining that the dimensional model requires further studies. The recently published International Classification of Diseases, 11th edition (ICD-11; WHO, 2018) however, has shifted to a dimensional classification of personality disorders. The new model proposes a single overarching personality disorder classification, which is to be rated according to its severity (mild, moderate, severe) and to five domain traits, that describe the specific nature of the personality dysfunction (Grenyer, 2018; Tyrer, 2017). These traits are comparable to the DSM-5 personality traits in all domains (Negative Affectivity, Detachment, Antagonism, Disinhibition), except in the Psychoticism domain. Instead of the Psychoticism domain, the ICD-11 trait model proposes the Anankastia domain, which is highly relevant in identifying obsessive-compulsive features. Given that one of the main uses of diagnostic systems is to enable communication among clinicians, in view of the potential harmonization of the ICD-11 and DSM-5 dimensional models, research is required on the empirical structure of these two models both separately, and concurrently, in Western and non-Western cultures. Bach, Sellbom, Skjernov and Simonsen (2018) recently, examined the ability of the DSM-5 and ICD-11

personality trait domains to predict DSM-IV categorical personality disorders. Each personality disorder was largely predicted by the expected DSM-5 and ICD-11 trait domains, although, as foreseen, the obsessive-compulsive personality disorder and the schizotypal personality disorder were better identified by the ICD-11 and the DSM-5 models, respectively. These findings suggest that the transition from categorical to dimensional diagnoses may be less abrupt than previously assumed. In the same vein, Lotfi, Bach, Amini and Simonsen, (2018) found evidence for the structural validity of DSM-5 and ICD-11 personality disorders trait models in a non-Western community sample. Despite the apparent differences between both classification systems, research points to a substantial overlap and a desirable potential harmonization between the ICD-11 and DSM-5 dimensional models.

The current study is part of a larger research project concerning the adaptation of the PID-5 for the Portuguese population (Pires et al., 2017a; Pires, Ferreira, Guedes, Gonçalves, & Henriques-Calado, 2018). The study aims are (i) to compare a community sample results on the PID-5 with those obtained with a clinical sample and (ii) to explore the factor structure of the Portuguese PID-5 in both the community sample and the clinical sample.

Considering the first aim, and in line with previously published studies on clinical population (e.g., Bach, Sellbom, & Simonsen, 2018), we expect the PID-5 to be able to distinguish clinical samples from community samples with regard to maladaptive personality traits. As for the latter aim, the majority of studies on the factor structure of the PID-5 have found a five-factor structure (Al-Attayah et al., 2017; Bach et al., 2016; Fossati et al., 2013; Roskan et al., 2015; Skodol et al., 2011; Suzuki et al., 2015; Zimmermann et al., 2014), even though some authors have also explored other solutions (De Clercq et al.,

2014; Gutiérrez et al., 2017; Maples et al., 2015; Morey, Krueger, & Skodol, 2013; Wright et al., 2012). To our knowledge, at least two studies have suggested other possibilities (Ashton, Lee, de Vries, Hendrickse, & Born, 2012; Pires, Sousa Ferreira, & Gonçalves, 2017b). Pires et al. (2017b) found a six-factor structure in a Portuguese community sample ($N = 379$, $M_{\text{age}} = 31.49$, $SD = 14.16$, 25.3% males, 74.7% females) with the Kaiser's eigenvalue-greater-than-one method. Currently, the authors of the present paper are interested in examining the PID-5 structure in a larger Portuguese sample by relying on other extraction criteria (e.g., Minimum Average Partial and Parallel Analysis) and, possibly, in exploring other factor solutions, which, in turn, may enrich the DSM-5 model. Finally, very few studies have studied dimensionality in clinical samples and therefore, it is necessary to replicate previous findings on clinical population (Bach et al., 2018; Gutiérrez et al., 2017) in different countries and samples.

Method

Sample

The community sample consisted of 1223 volunteers aged between 18 to 91 years ($M_{\text{age}} = 36.73$, $SD = 15.72$, 33.6% male, 66.4% female), recruited from the relatives and acquaintances of undergraduate students from the University of Lisbon.

The clinical sample was composed of 202 patients aged between 18 to 68 years ($M_{\text{age}} = 43.82$, $SD = 11.33$, 72.1% male, 27.9% female), who, at the time, were having treatment at mental health units, mostly for substance abuse. Selection of participants was carried out by the mental health units' clinicians according to the exclusion criteria of not including the diagnoses of intellectual disability, schizophrenia, and major and mild neurocognitive disorders. The clinicians were also requested to report each participant's main diagnosis, in

addition to mentioning any other observed secondary diagnosis. In order to overcome the variability in the degree of detail with which each clinician recorded the DSM-5 diagnoses, they were subsequently reclassified, to consider the more overarching disorder category of the DSM-5 (e.g, instead of reference to unspecified substance use disorder, the category of substance-related and addictive disorders was added). The most common diagnoses included substance-related and addictive disorders (92.6%), affective disorders (5.0%), and personality disorders (2.5%). Under the overarching disorder of substance-related and addictive disorders, the majority of the patients were diagnosed with substance use disorders (i.e., alcohol and/or unspecified drugs consumption) and only one patient was diagnosed with addictive disorder (gambling disorder). Compared to the other diagnoses, in which only one patient met the criteria for a secondary diagnosis, the substance-related and addictive disorders sub-sample had several comorbidities: personality disorders (34.7%), affective disorders (18.8%) and anxiety disorders (3.5%). Considering the personality disorders diagnoses, the most represented was the borderline personality disorder (71.4%).

Instruments

Personality Inventory for DSM-5 (Krueger et al., 2012)

The PID-5 is a self-report measure which operationalizes the DSM-5 model of pathological personality traits. It is composed of 220 items, rated on a 4-point Likert scale ranging from 0 (very false or often false) to 3 (very true or often true) which characterize 25 empirically derived lower level facets grouped into five main domains of maladaptive personality variation. The PID-5 is to be used with adults (18 years or above) and most individuals finish the task within 40 minutes.

Data Analysis

Analyses were undertaken with the *IBM SPSS Statistics* (v.23, SPSS Inc., Chicago, IL). Descriptive statistics for the facets and domains were obtained and internal reliability was examined through Cronbach's alphas, in both community and clinical samples. In order to explore the normality of the scales' distributions, the following criteria were used: skewness, kurtosis, Kolmogorov-Smirnov Goodness-of-Fit Test ($N > 30$), stem and leaf diagrams and Q-Q plots. Given that the majority of the PID-5 scales did not follow a normal distribution, the independent sample Mann-Whitney U test was used to compare the psychiatric patients' results in the PID-5 with those obtained from the community sample. Size effect was tested through $r = Z/\sqrt{N}$, $N = n_{\text{community sample}} + n_{\text{clinical sample}}$, in which the size of the effect was considered small when: $.10 \leq r < .30$, medium when: $.30 \leq r < .50$ and large when: $r \geq .50$. In order to examine the PID-5 structure, a number of exploratory factor analyses (EFA) were performed at the facet level in both community and clinical samples in order to ascertain which factor solution best fit the data. To evaluate the number of factors to be extracted and interpreted, we considered the commonly used Kaiser criterion and the Minimum Average Partial (MAP) and Parallel Analysis criteria, both more validated procedures (Lorenzo-Seva & Ferrando, 2006; Horn, 1965; Velicer, 1976b; Zwik & Velicer, 1986). In line with Krueger et al. (2012), given that the PID-5 factors are strongly intercorrelated, we used the Equamax oblique rotation, which combines features of the Quartimax and Varimax criteria. Internal reliabilities of the factor structures obtained were reported.

Results

Distributions, Descriptives, Internal Consistency and Median Differences between the Results of the Community and Clinical samples

Table 1 presents means, standard deviations and Cronbach's alphas of the PID-5 scales in the community and clinical samples.

(Insert Table 1)

Regarding the community sample, the mean Cronbach's alpha for the facets was .81, ranging from .68 at the lowest level for Suspiciousness to .94 for Eccentricity. All but four facets (Grandiosity, Irresponsibility, Manipulativeness and Suspiciousness) showed alpha coefficients above or equal to .75, thus revealing adequate internal consistencies. As for the clinical sample, although the mean Cronbach's alpha for the facets was .79, low internal consistencies were reported for two facets: Suspiciousness and Submissiveness. At the domain level, the mean Cronbach's alpha was .90 in both the community and clinical samples.

Considering the aforementioned normality criteria, in the community sample, only seven of the 30 PID-5 scales leaned toward normality. Frequency distributions were moderately right-skewed and leptokurtic. Conversely, in the clinical sample, all scales presented asymptotically normal frequency distributions.

Table 2 presents the independent sample Mann-Whitney U test and respective size effect.

(Insert Table 2)

The PID-5 scale medians were higher in the clinical sample than in the community sample and all the analyses were statistically significant ($p \leq .001$). However, the fact that the size effects were small to medium does not guarantee that the differences are real and not due to the disparity between sample sizes. Thus, the analysis was repeated with a randomly extracted subsample of the community sample with a similar size to the clinical sample ($n = 200$). Given that medium size effects were obtained for the majority of the PID-5 scales, the comparison between the community subsample and the clinical sample confirmed that the PID-5 scale medians were higher in the clinical sample than in the community sample and that these statistically significant differences were real and not due to the size of the samples.

Exploratory Factor Analysis

The structure of the PID-5 in the community and clinical samples were tested through EFA of the 25 facets. As aforementioned, in order to evaluate the number of factors to extract and interpret, we considered the Kaiser criterion, MAP and Parallel Analysis criteria. In the community sample, the former suggested 6 factors, but the latter two pointed to five factors. In the clinical sample, the Kaiser criterion also pointed to six factors whereas the MAP and Parallel Analysis criteria suggested four factors. Considering that Kaiser's eigenvalue-greater than-one has been found to be consistently suboptimal and biased, we present here a five-factor EFA for the community sample and a four-factor EFA for the clinical sample.

In the community sample, the model showed excellent fit indices (KMO = .912; Sharma, 1996) and the total explained variance was 63.60%. Communalities showed that the percentage of variance explained by the extracted factors was above 50% for all but three facets (Impulsivity, Intimacy avoidance and Suspiciousness)

Table 3 presents the five factor Equamax rotated solution, factor loadings, eigenvalues, communalities and the percentage of explained variance per factor in the community sample.

(Insert Table 3)

The facets Anxiousness, Depressivity, Emotional lability, Perseveration, Separation insecurity and Submissiveness, all loaded mainly onto Factor 1, the latter closely resembling the Negative Affectivity domain. The majority of the domain facets, with the exception of Hostility and Suspiciousness, loaded onto Factor 1.

Factor 2 was similar to Detachment and was composed of Anhedonia, Intimacy avoidance, Restricted affectivity and Withdrawal. According to the DSM-5 personality model, three facets, namely Depressivity, Restricted affectivity and Suspiciousness, simultaneously characterized the Negative Affectivity domain and the Detachment domain. EFA's results showed that Depressivity loaded secondarily onto Factor 2, reporting a value of .495. As for Restricted affectivity, despite loading primarily onto Factor 2, as would be expected, it displayed a negative correlation with Factor 1. In the model, the Negative Affectivity domain is characterized by a lack of Restricted affectivity.

Factor 3, composed of Distractibility, Impulsivity, Irresponsibility and Risk taking, resembled the Disinhibition domain. According to the model, the Disinhibition domain is

also characterized by a lack of Rigid perfectionism. As would be expected, this facet displayed a negative correlation with the factor. Unexpectedly, Cognitive and perceptual dysregulation and Eccentricity, facets of the Psychoticism domain, loaded primarily onto Factor 3, although loading secondarily onto Factor 5.

Factor 4, onto which facets Attention seeking, Callousness, Deceitfulness, Grandiosity, Hostility and Manipulativeness were primarily loaded, was akin to Antagonism.

Finally, Factor 5 was the least similar to the DSM-5 personality model domains, composed of Unusual beliefs and experiences, Suspiciousness and Rigid perfectionism. Given that Cognitive and perceptual dysregulation and Eccentricity loaded secondarily onto Factor 5, perhaps we may consider this factor akin to the Psychoticism domain.

Although this five factor solution bore great resemblance to the DSM-5 personality trait model, the composition of each factor did not fully overlap to the model domains. The internal reliabilities of the new factors were calculated on the basis of all the facets that encompassed each factor (see Table 3). The alpha obtained for Factor 1, akin to the Negative Affectivity domain, was .95, for Factor 2, akin to the Detachment domain, .91, for Factor 3, similar to the Disinhibition domain, .94, for Factor 4, akin to Antagonism, .92. Finally, Factor 5, the less clear and interpretable factor, obtained an alpha of .86. An alpha of .94 was obtained when we considered not only the three facets that loaded primarily onto Factor 5, but also the Cognitive and perceptual dysregulation and Eccentricity facets that loaded secondarily onto it and which, along with Unusual beliefs and experiences, characterize the Psychoticism domain.

All alphas were high, even the one obtained originally for factor 5, confirming the suitability of the five factor structure found in the Portuguese version of the PID-5.

Considering the clinical sample, the four factor solution suggested by MAP and Parallel Analysis criteria revealed excellent fit indices ($KMO = .914$; Sharma, 1996). The total explained variance was 64.71% and communalities showed that the percentage of variance explained by the extracted factors was above 50% for all but four facets (Intimacy avoidance, Separation insecurity, Submissiveness, Suspiciousness).

Table 4 presents the four factor Equamax rotated solution, factor loadings, eigenvalues, communalities and the percentage of explained variance per factor in the clinical sample.

(Insert Table 4)

As for the factors' composition, Attention seeking, Callousness, Deceitfulness, Grandiosity and Manipulativeness loaded onto Factor 1, which closely resembled Antagonism. As would be expected according to the DSM-5 model, Hostility, that loaded primarily onto Factor 3, had its secondary load onto Factor 1.

Factor 2 was similar to Detachment and was composed of Anhedonia, Depressivity, Intimacy avoidance, Restricted affectivity and Withdrawal. Eccentricity unexpectedly loaded onto Factor 2, rendering interpretation of its meaning rather difficult.

Factor 3, composed of Distractibility, Impulsivity, Irresponsibility and Risk taking, resembled the Disinhibition domain. As aforementioned, in the DSM-5 model, the Disinhibition domain is also characterized by a lack of Rigid perfectionism and this facet displayed a negative correlation with the factor. In the clinical sample, the Hostility facet which, in the model, characterizes both the Negative Affectivity and the Antagonism domains, loaded onto Factor 3.

The facets Anxiousness, Emotional lability, Perseveration, Separation insecurity, Submissiveness and Suspiciousness all loaded mainly onto Factor 4, the latter closely resembling the Negative Affectivity domain. Although in the DSM-5 model, the Rigid perfectionism facet does not belong to the Negative Affectivity Domain, this facet loaded strongly onto Factor 4 in this sample.

In the clinical sample, the Psychoticism domain does not clearly emerge, with the facets Cognitive and perceptual dysregulation and Unusual beliefs and experiences mixed with the facets that compose Factor 4.

In order to replicate the DSM-5 personality model, the extraction of factors was limited to 5 factors in the clinical sample. Compared to the four factor solution, the five factor solution did not entirely reproduce the original DSM-5 trait model. Therefore, the internal reliabilities of the four, but not of the five factors, were calculated. The alphas for Factors 1, 2, 3 and 4 were .94, .95, .93 and .94, respectively. The high reliability of the four factors supported the structure obtained in the clinical sample.

Discussion

The current study addressed the PID-5's potential for distinguishing non-clinical participants from clinical participants with respect to dysfunctional personal traits, and also explored the factor structure of the Portuguese PID-5 in community and clinical samples.

In the community sample, results on the internal consistency of the Portuguese PID-5 were similar to those obtained with the original test (Krueger et al., 2012) and in other cross-cultural adaptations of the test (Al-Attayah et al., 2017; Al-Dajani, Gralnick, & Bagby, 2016; Bach et al., 2016; De Clercq et al., 2014; De Fruyt et al., 2013; Fossati et al., 2013; Gutiérrez et al., 2017; Krueger & Markon, 2014; Zimmermann et al., 2014). Even the

lowest alpha obtained in Suspiciousness, pointing to the lower reliability of this facet, has previously been reported in other studies (De Clercq et al., 2014; Gutiérrez et al., 2017). Regarding the clinical sample, the low internal consistencies found for Suspiciousness and Submissiveness call for further research with larger samples.

The Portuguese PID-5 was able to differentiate the clinical and community samples. The PID-5 scale medians were higher in the clinical sample than in the community sample, all the analyses were statistically significant ($p \leq .001$) and the majority reported medium size effects. Thus, the current study contributes to the validation of PID-5 usage in clinical contexts.

Considering the factorial validity of the Portuguese PID-5, and in line with several studies (for a review see Al-Dajani et al., 2016) reporting similar factor solutions to the originally proposed five-factor solution, a five factor solution emerged in the community sample.

Apart from Factor 5, the extracted factors were similar to the domains described in the DSM-5 trait model (Krueger et al., 2012; Krueger & Markon, 2014). Factors 1, 2, 3 and 4 closely resembled the Negative Affectivity domain, the Detachment domain, the Disinhibition domain and the Antagonism domain, respectively. The fifth extracted factor was composed of Suspiciousness, which in the DSM-5 trait model cross loads onto the Negative Affectivity domain and the Detachment domain, Rigid perfectionism, which characterizes the Disinhibition domain when it is missing, and Unusual beliefs and experiences, from the Psychoticism domain. If we consider that Cognitive and perceptual dysregulation and Eccentricity loaded secondarily onto Factor 5, perhaps we may consider this factor akin to the Psychoticism domain.

The PID-5 departure from its original structure has been reported in the literature and justified by the interstitial location of some of the facets (such as, Rigid perfectionism). Indeed, in the current study, the gist of Factors 1 to 4 remained the same and therefore, it appears acceptable that the exact structure of the PID-5 shifts slightly from study to study as a consequence of the complexity of the personality structure (Gutiérrez et al., 2017; Krueger & Markon, 2014).

A limitation of the current study relates to the potential hierarchical structure of the community data. Indeed, community-dwelling participants were recruited from the relatives and acquaintances of students, and this convenience sampling strategy may result in the presence of clusters in the sample (e.g., families). Although this sampling strategy may account for the less clearly interpretable Psychoticism domain, the fact that our community sample replicated the five factor structure found in other studies contributed to the decision to not re-analyze data relying on multilevel modeling techniques.

In the clinical sample, the extraction limited to five factors did not clearly replicate other findings (Bach et al., 2017; Gutiérrez et al., 2017) and, therefore, the five factor solution was not adopted. In the four factor solution retained, the Psychoticism domain did not emerge, with Cognitive and perceptual dysregulation and Unusual beliefs and experiences loading onto Factor 4, akin to the Negative Affectivity domain, and Eccentricity loading onto Factor 2, similar to the Detachment domain. It is quite possible that the absence of this domain, which in the DSM-5 model is relevant to the characterization of schizotypal personality disorder, stems from the composition of the clinical sample, which is, along with its small size, one of the greatest limitations of the current study. A broader clinical sample, specifically to cover diagnoses other than substance consumption, in addition to a more detailed DSM-5 diagnostic recording

procedure, are some of the most anticipated developments for this study, which may, perhaps, clarify the aforementioned puzzling result.

However, the fact that the Psychoticism domain did not appear in this sample may be of clinical relevance if we consider that the ICD-11 proposes a personality disorder dimensional model which is comparable to the DSM-5 personality model in all its domains, except in the Psychoticism domain. Although the debate around DSM-5 and ICD-11 personality traits models is beyond the scope of this manuscript, it should be noted that on the basis of both systems, there are different diagnostic assumptions regarding symptoms. Consequently, the ICD has never considered schizotypy as a personality disorder, but as part of the schizophrenia spectrum (Bach, Sellbom, Skjernov, & Simonsen, 2018; Tyrer, 2017).

These results, if confirmed elsewhere, may give rise to stimulating research on the empirical structure of the ICD-11 and DSM-5 dimensional models in Western and non-Western cultures, towards the harmonization of both personality disorders classification and the long-awaited step forward to dimensional and empirically developed official classification systems.

References

1. American Psychiatric Association (APA). *Diagnostic and Statistical Manual of Mental Disorders*. APA, 2013.
2. 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.

3. DeYoung CG, Carey BE, Krueger RF, Ross SR. Ten aspects of the Big Five in the Personality Inventory for DSM–5. *Personal Disord* 2016; **7**(2): 113-23.
4. Sleep CE, Hyatt CS, Lamkin J, Maples-Keller JL, Miller JD. Examining the relations among the DSM–5 Alternative Model of Personality, the Five-Factor Model, and externalizing and internalizing behavior. *Personal Disord* Advance online publication 2017; **26**: 1-6.
5. Costa Jr PT, Widiger TA. *Personality Disorders and the Five-Factor Model of Personality, 3rd Edition*. Washington: American Psychological Association, 2012.
6. Gore WL, Widiger TA. The DSM-5 dimensional trait model and five-factor models of general personality. *J Abnorm Psychol* 2013; **122**(3): 816-21.
7. Krueger RF, Markon KE. The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. *Annu Rev Clin Psycho* 2014; **10**: 477-501.
8. Maples JL, Carter NT, Few LR, Crego C, Gore WL, Samuel DB, et al. Testing whether the DSM-5 personality disorder trait model can be measured with a reduced set of items: An item response theory investigation of the Personality Inventory for DSM-5. *Psychol Assess* 2015; **27**(4): 1195-210.
9. Skodol AE, Clark LA, Bender DS, Krueger RF, Morey LC, Verheul R, et al. Proposed changes in personality and personality disorder assessment and diagnosis for DSM-5 Part I: Description and rationale. *Personal Disord* 2011; **2**(1): 4-22.
10. Suzuki T, Samuel DB, Pahlen S, Krueger RF. DSM-5 alternative personality disorder model traits as maladaptive extreme variants of the five-factor model: An item-response theory analysis. *J Abnorm Psychol* 2015; **124**(2): 343-54.

11. Suzuki T, Griffin SA, Samuel DB. Capturing the DSM-5 alternative personality disorder model traits in the five-factor model's nomological net. *J Pers* 2017; **85**(2): 220-31.
12. Thomas KM, Yalch MM, Krueger RF, Wright AG, Markon KE, Hopwood CJ. The convergent structure of DSM-5 personality trait facets and five-factor model trait domains. *Assessment* 2013; **20**(3): 308-11.
13. Wright ZE, Pahlen S, Krueger RF. Genetic and environmental influences on Diagnostic and Statistical Manual of Mental Disorders (DSM–5) maladaptive personality traits and their connections with normative personality traits. *J Abnorm Psychol* 2017; **126**(4): 416-28.
14. Harkness AR, McNulty JL. The Personality Psychopathology Five (PSY-5): Issues from the pages of a diagnostic manual instead of a dictionary. In: Strack S, Lorr M, eds. *Differentiating normal and abnormal personality*, pp. 291-315. New York: Springer, 1994.
15. Anderson JL, Sellbom M, Bagby RM, Quilty LC, Veltri CO, Markon KE, Krueger RF. On the convergence between PSY-5 domains and PID-5 domains and facets: Implications for assessment of DSM-5 personality traits. *Assessment* 2013; **20**(3): 286-94.
16. Finn JA, Arbisi PA, Erbes CR, Polusny MA, Thuras P. The MMPI–2 restructured form personality psychopathology five scales: Bridging DSM–5 section 2 personality disorders and DSM–5 section 3 personality trait dimensions. *J Pers Assess* 2014; **96**(2): 173-84.
17. Fossati A, Krueger RF, Markon KE, Borroni S, Maffei C. Reliability and validity of the Personality Inventory for DSM-5 (PID-5) predicting DSM-IV personality disorders and psychopathy in community-dwelling Italian adults. *Assessment* 2013; **20**(6): 689-708.

18. De Fruyt F, De Clercq B, De Bolle M, Wille B, Markon K, Krueger RF. General and maladaptive traits in a five-factor framework for DSM-5 in a university student sample. *Assessment* 2013; **20**(3): 295-307.
19. De Clercq B, De Fruyt F, De Bolle M, Van Hiel A, Markon KE, Krueger RF. The hierarchical structure and construct validity of the PID-5 trait measure in adolescence. *J Pers* 2014; **82**(2): 158-69.
20. Zimmermann J, Altenstein D, Krieger T, Holtforth MG, Pretsch J, Alexopoulos J, et al. The structure and correlates of self-reported DSM-5 maladaptive personality traits: Findings from two German-speaking samples. *J Personal Disord* 2014; **28**(4): 518-40.
21. Roskam I, Galdiolo S, Hansenne M, Massoudi K, Rossier J, Gicquel L, et al.. The psychometric properties of the French version of the Personality Inventory for DSM-5. *PLoS One* 2015; **10**(7): 1-13.
22. Bach B, Maples-Keller JL, Bo S, Simonsen E. The alternative DSM-5 personality disorder traits criterion: A comparative examination of three self-report forms in a Danish population. *Personal Disord* 2016; **7**(2): 124-35.
23. Al-Attayah AA, Megreya AM, Alrashidi M, Dominguez-Lara SA, Al-Sheerawi A. The psychometric properties of an Arabic version of the Personality Inventory for DSM-5 (PID-5) across three Arabic-speaking Middle Eastern countries. *Int J Cul Ment Health* 2017; **10**(2): 197-205.
24. Gutiérrez F, Aluja A, Peri JM, Calvo N, Ferrer M, Baillés E, et al. Psychometric properties of the Spanish PID-5 in a clinical and a community sample. *Assessment* 2017; **24**(3): 326-36.
25. Pires R, Ferreira AS, Guedes D. The psychometric properties of the Portuguese version of the Personality Inventory for DSM-5. *Scand J Psychol* 2017a; **58**(5): 468-75.

26. Riegel KD, Preiss M, Ksinan A, Michalec J, Samankova D, Harsa P. Psychometric properties of the Czech version of the Personality Inventory for DSM-5: Internal consistency, validity and discrimination capacity of the measure. *Cesk Psychol* 2017; **61**(2): 128-43.
27. World Health Organization (WHO). *The 11th Revision of the International Classification of Diseases*. WHO, 2018 Retrieved from <http://www.who.int/classifications/icd/en/>
28. Grenyer BF. Revising the diagnosis of personality disorder: Can it be single, clinical and factorial? *Aust N Z J Psychiatry* 2018; **52**(2): 202-3.
29. Tyrer P. Personality disorder: Good reasons to reclassify. *Aust N Z J Psychiatry* 2017; **5**(11): 1077-78.
30. Bach B, Sellbom M, Skjernov M, Simonsen E. ICD-11 and DSM-5 personality trait domains capture categorical personality disorders: Finding a common ground. *Aust N Z J Psychiatry* 2018; **52**(5): 425-34.
31. Lotfi M, Bach B, Amini M, Simonsen E. Structure of DSM-5 and ICD-11 personality domains in Iranian community sample. *Personal Ment Health* 2018; **12**(2): 155-69.
32. Pires R, Ferreira AS, Guedes D, Gonçalves B, Henriques-Calado J. Estudo das propriedades psicométricas - formas longa, reduzida e breve - da versão Portuguesa do Inventário da Personalidade para o DSM-5 (PID-5). *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica* 2018; **47**(2): 197-212.
33. Bach B, Sellbom M, Simonsen E. Personality Inventory for DSM-5 (PID-5) in clinical versus nonclinical individuals: Generalizability of psychometric features. *Assessment* 2018; **25**(7): 815-25.

34. Morey LC, Krueger RF, Skodol AE. The hierarchical structure of clinician ratings of proposed DSM–5 pathological personality traits. *J Abnorm Psychol* 2013; **122**(3): 836-41.
35. Wright AG, Thomas KM, Hopwood CJ, Markon KE, Pincus AL, Krueger RF. The hierarchical structure of DSM-5 pathological personality traits. *J Abnorm Psychol* 2012; **121**(4): 951-57.
36. Ashton MC, Lee K, de Vries RE, Hendrickse J, Born MP. The maladaptive personality traits of the Personality Inventory for DSM-5 (PID-5) in relation to the HEXACO personality factors and schizotypy/dissociation. *J Personal Disord* 2012; **26**(5): 641-59.
37. Pires R, Ferreira AS, Gonçalves B. The factor structure of the Portuguese version of the personality inventory for DSM-5 (PID-5). *Eur Psychiatry* 2017b; **41**: S259.
38. Lorenzo-Seva U, Ferrando PJ. FACTOR: A computer program to fit the exploratory factor analysis model. *Behav Res Methods* 2006; **38**(1): 88-91.
39. Horn JL. A rationale and test for the number of factors in factor analysis. *Psychometrika* 1965; **30**(2): 179-85.
40. Velicer WF. The relation between factor score estimates, image scores, and principal component scores. *Educ Psychol Meas* 1976; **36**(1): 149-59.
41. Zwick WR, Velicer WF. Comparison of five rules for determining the number of components to retain. *Psychol Bull* 1986; **99**(3): 432-42.
42. Sharma S. *Applied Multivariate Techniques*. John Wiley & Sons, 1996.
43. 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.

Table 1. PID-5 scales' means (*M*), standard deviations (*SD*) and Cronbach's alphas (α) in the community and clinical samples.

	Community			Clinical		
	(N=1223)			(N=202)		
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α
Anhedonia	.84	.56	.84	1.30	.59	.77
Anxiousness	1.44	.66	.85	1.78	.58	.77
Attention seeking	.68	.57	.86	1.29	.73	.86
Callousness	.32	.31	.75	.77	.50	.81
Cognitive and perceptual dysregulation	.52	.44	.82	1.04	.64	.86
Deceitfulness	.40	.39	.80	.93	.57	.82
Depressivity	.56	.53	.90	1.12	.65	.90
Distractibility	.95	.62	.87	1.37	.62	.83
Eccentricity	.64	.63	.94	1.13	.70	.92
Emotional lability	1.23	.68	.84	1.56	.68	.82
Grandiosity	.61	.53	.74	1.03	.64	.74
Hostility	.97	.52	.80	1.29	.63	.82
Impulsivity	.85	.63	.84	1.51	.70	.80
Intimacy avoidance	.54	.60	.78	.84	.72	.79
Irresponsibility	.36	.39	.71	1.05	.61	.75
Manipulativeness	.65	.53	.73	1.14	.72	.77
Perseveration	.88	.52	.80	1.30	.56	.76
Restricted affectivity	.91	.57	.76	1.21	.61	.72

Rigid perfectionism	1.21	.62	.86	1.41	.63	.84
Risk taking	1.11	.51	.84	1.48	.55	.84
Separation insecurity	.91	.63	.80	1.50	.65	.73
Submissiveness	.82	.65	.78	1.12	.62	.58
Suspiciousness	1.01	.53	.68	1.54	.47	.50
Unusual beliefs and experiences	.50	.50	.78	1.02	.65	.79
Withdrawal	.74	.58	.88	1.15	.63	.85
<hr/>						
Negative affectivity	1.19	.54	.91	1.61	.51	.87
Detachment	.70	.46	.91	1.09	.51	.88
Antagonism	.55	.40	.87	1.03	.57	.90
Disinhibition	.72	.44	.89	1.31	.55	.90
Psychoticism	.55	.45	.94	1.06	.60	.95
<hr/>						

Table 2. Mean ranks, Independent Samples Mann-Whitney U (Z) and size effects (r) in the community and clinical samples.

PID-5 scales	Samples	Mean ranks	Z	p	r
Anhedonia	Community	667.83	-10.22	.000	.27
	Clinical	986.45			
Anxiousness	Community	682.69	-6.85	.000	.18
	Clinical	896.50			
Attention seeking	Community	663.78	-11.14	.000	.30
	Clinical	1011.02			
Callousness	Community	653.23	-13.55	.000	.36
	Clinical	1074.89			
Cognitive and perceptual dysregulation	Community	663.20	-11.27	.000	.30
	Clinical	1014.52			
Deceitfulness	Community	656.52	-12.82	.000	.34
	Clinical	1054.95			
Depressivity	Community	659.48	-12.10	.000	.32
	Clinical	1037.05			
Distractibility	Community	673.71	-8.88	.000	.24
	Clinical	950.89			
Eccentricity	Community	670.34	-9.65	.000	.26
	Clinical	971.28			
Emotional lability	Community	684.85	-6.37	.000	.17
	Clinical	883.45			

Grandiosity	Community	674.03	-8.85	.000	.23
	Clinical	948.94			
Hostility	Community	683.55	-6.66	.000	.18
	Clinical	891.28			
Impulsivity	Community	660.94	-11.79	.000	.31
	Clinical	1028.21			
Intimacy avoidance	Community	685.12	-6.38	.000	.17
	Clinical	881.77			
Irresponsibility	Community	646.44	-15.21	.000	.40
	Clinical	1115.98			
Manipulativeness	Community	672.30	-9.25	.000	.25
	Clinical	959.41			
Perseveration	Community	671.24	-9.44	.000	.25
	Clinical	965.81			
Restricted affectivity	Community	684.85	-6.37	.000	.17
	Clinical	883.44			
Rigid perfectionism	Community	695.37	-3.98	.000	.11
	Clinical	819.71			
Risk taking	Community	674.14	-8.78	.000	.23
	Clinical	948.29			
Separation insecurity	Community	664.34	-11.01	.000	.29
	Clinical	1007.62			
Submissiveness	Community	685.46	-6.26	.000	.17

	Clinical	879.77			
Suspiciousness	Community	657.97			
			-12.46	.000	.33
Unusual beliefs and experiences	Clinical	1046.16			
	Community	663.04			
			-11.34	.000	.30
Withdrawal	Clinical	1015.46			
	Community	674.63			
			-8.67	.000	.23
<hr/>					
Negative affectivity	Community	669.17			
	Clinical	978.39			
			-9.89	.000	.26
Detachment	Community	668.08			
	Clinical	984.95			
			-10.14	.000	.27
Antagonism	Community	662.37			
	Clinical	1019.57			
			-11.43	.000	.30
Disinhibition	Community	652.37			
	Clinical	1080.10			
			-13.69	.000	.36
Psychoticism	Community	661.54			
	Clinical	1024.59			
			-11.62	.000	.31

Note. $R = Z/\sqrt{N}$, $N = n_{community\ sample} + n_{clinical\ sample}$; small effect: $.10 \leq r < .30$, medium effect: $.30 \leq r < .50$, large effect: $r \geq .50$

Table 3. Exploratory factor analysis with Equamax rotated solution in a sample of 1223 adults from the general population, 5 factor model.

PID-5 Facets	Factors					Communalities
	1	2	3	4	5	
Anhedonia	.472	.650	.243	-.020	.131	.72
Anxiousness	.679	.210	.143	-.056	.454	.74
Attention seeking	.344	-.251	.210	.674	.099	.69
Callousness	-.111	.476	.194	.555	.182	.62
Cog.Perc. dysregulation	.255	.284	.543	.123	.523	.73
Deceitfulness	.173	.194	.288	.748	.035	.71
Depressivity	.513	.495	.409	.006	.256	.74
Distractibility	.417	.318	.621	.065	.042	.67
Eccentricity	.114	.307	.571	.217	.412	.65
Emotional lability	.533	-.076	.430	-.019	.491	.72
Grandiosity	-.043	.070	.011	.666	.392	.60
Hostility	.319	.233	.250	.409	.352	.51
Impulsivity	.150	-.011	.601	.191	.228	.47
Intimacy avoidance	.049	.623	.027	-.045	.132	.41
Irresponsibility	.164	.211	.697	.333	-.193	.69
Manipulativeness	.077	.053	.152	.803	.133	.70
Perseveration	.496	.332	.367	.225	.371	.68
Restricted affectivity	-.055	.757	.064	.258	.058	.65
Rigid perfectionism	.290	.138	-.241	.223	.686	.68

Risk taking	-.427	-.146	.576	.286	.100	.63
Separation insecurity	.659	-.031	.097	.165	.278	.55
Submissiveness	.675	.091	.053	.235	-.066	.53
Suspiciousness	.155	.320	.110	.160	.568	.49
Unus. beliefs exp.	-.068	.119	.346	.213	.672	.64
Withdrawal	.189	.762	.110	.079	.273	.71
<hr/>						
Eigenvalues	8.76	2.49	1.89	1.52	1.25	
<hr/>						
% variance explained	35.04	9.96	7.56	6.07	4.98	
<hr/>						

Note. Unusual beliefs and experiences = Unus. beliefs exp.; Cognitive and perceptual dysregulation = Cog.Perc. dysregulation

Table 4. Exploratory factor analysis with Equamax rotated solution in a sample of 202 adults from the psychiatric population, 4 factor model.

PID-5 Facets	Factors				Communalities
	1	2	3	4	
Anhedonia	-.017	.703	.443	.069	.70
Anxiousness	-.057	.255	.397	.727	.75
Attention seeking	.630	-.073	.410	.422	.75
Callousness	.734	.385	.145	.061	.71
Cog.Perc. dysregulation	.261	.483	.454	.485	.74
Deceitfulness	.766	.205	.354	.156	.78
Depressivity	.032	.623	.496	.373	.77
Distractibility	.161	.494	.636	.296	.76
Eccentricity	.337	.493	.454	.350	.69
Emotional lability	.069	.126	.510	.628	.67
Grandiosity	.758	.066	-.025	.391	.73
Hostility	.454	.229	.525	.331	.64
Impulsivity	.229	.068	.798	.186	.73
Intimacy avoidance	.112	.609	-.052	.041	.39
Irresponsibility	.434	.478	.552	.010	.72
Manipulativeness	.807	.077	.307	.157	.78
Perseveration	.294	.397	.425	.514	.69
Restricted affectivity	.390	.617	.116	.112	.56
Rigid perfectionism	.212	.186	-.073	.749	.65

Risk taking	.394	-.302	.620	-.005	.63
Separation insecurity	.257	-.134	.149	.583	.45
Submissiveness	.265	.184	.302	.349	.32
Suspiciousness	.226	.316	.059	.419	.33
Unus. beliefs exp.	.353	.290	.243	.506	.52
Withdrawal	.076	.802	.038	.270	.72
<hr/>					
Eigenvalues	10.83	2.35	1.61	1.40	
<hr/>					
% variance explained	43.30	9.39	6.42	5.59	
<hr/>					

Note. Unusual beliefs and experiences = Unus. beliefs exp.; Cognitive and perceptual dysregulation = Cog.Perc. dysregulation