

Pathological Personality Traits (*DSM-5*), Risk Factors, and Mental Health

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Abstract

This study aimed to evaluate the psychometric properties of the brief version of the Personality Inventory for *DSM-5* (PID-5-BF) in a community sample of Argentine adult population, to establish its relationship with the Big Five normal personality traits, and to examine the association of pathological traits with mental and physical maladaptiveness assessed through the level of mental health and World Health Organization (WHO) health risk factors. The sample consisted of 1,032 subjects from the metropolitan area of Buenos Aires. The PID-5-BF, the Big Five Inventory, the Mental Health Continuum–Short Form, and the Survey on risk factors for noncommunicable diseases were used. A five-factorial structure that explained 59.48% of the variance was found, with reliability values higher than $\alpha = .86$ for each factor. Convergences among pathological personality traits and the five-factor personality model were found, except for Psychoticism and Openness to experience. The severity of personality traits was associated with low levels of mental health and higher number of WHO health risk factors. Nevertheless, the associations among these variables were low to moderate.

Keywords

personality, psychology, social sciences, assessment, clinical psychology, mental health, risk factors, Big Five, pathological traits

In Section III of the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013), a dimensional model of maladaptive personality traits is proposed. This model coexists with, and is an alternative to, the traditional categorical taxonomy and defines a personality trait as a tendency to feel, perceive, behave, and think in relatively consistent ways across time and across situations. Although consistent, traits may also change throughout one's life (APA, 2013).

The *DSM-5*'s new model consists of 25 lower order personality facets that are classified into five higher order domains: Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. These five broad domains are maladaptive variants of the five domains of the extensively validated and replicated Five-Factor personality model known as the "Big Five": Emotional Stability, Extraversion, Agreeableness, Conscientiousness, and Lucidity (or Openness; Krueger, Derringer, Markon, Watson, & Skodol, 2012). Although the *DSM-5* focuses on personality traits that are associated with psychopathology, which is the traditional interest of the *DSM* classification system, it also recognizes the existence of healthy polar opposites, that is, adaptive and resilient personality traits, which are usually assessed by "normal" personality inventories (American Psychiatric Association, 2013).

The Personality Inventory for the *DSM-5* (PID-5) was developed to assess the maladaptive personality traits proposed in the *DSM-5* (Krueger et al., 2012). There is an increasing body of research that supports the psychometric

properties of the PID-5, with an internal consistency $\alpha > .70$ for all of its dimensions. Evidence of the five-factorial structure has been found in student, community, and clinical samples (see Al-Dajani, Gralnick, and Bagby, 2016, for a review).

The relationship between the PID-5's pathological traits and the Five-Factor personality model was explored using different instruments, such as the Revised NEO Personality Inventory (NEO-PI-R), the Personality Psychopathology Five (PSY-5), the Five-Factor Model Rating Form, the Big Five Inventory (BFI), and the Faceted Inventory of the Five-Factor Model (Anderson et al., 2013; Griffin & Samuel, 2014; Watson, Stasik, Ro, & Clark, 2013). Findings have confirmed strong associations between the following: Negative Affectivity and Neuroticism (positive), Detachment and Extraversion (negative), Antagonism and Agreeableness (negative), and Disinhibition and Conscientiousness (negative). However, there have been inconsistent results regarding the relationship between Psychoticism and Openness to Experience. While some studies found a relationship between these two traits

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(e.g., Chmielewski, Bagby, Markon, Ring, & Ryder, 2014; Fruyt et al., 2013; Gore & Widiger, 2013; Thomas et al., 2012), others have not found any association (Few et al., 2013; Quilty, Ayearst, Chmielewski, Pollock, & Bagby, 2013; Suzuki, Samuel, Pahlen, & Krueger, 2015; Watson et al., 2013). The debate has focused partly on how researchers define Openness to Experience/Intellect. Those who expand the definition to include other related constructs such as absorption, unconventionality, experiential permeability, apophenia, or intelligence find a stronger relationship with Psychoticism (DeYoung, Grazioplene, & Peterson, 2012; Piedmont, Sherman, & Sherman, 2012). Alternatively, those who use the definition from the traditional Big Five instruments, such as NEO-PI or PSY-5, find a weak association with Psychoticism (Chmielewski et al., 2014). The conceptualization used in these latter instruments only captures the central core of Openness to Experience; consequently, only extreme scores or other related constructs that expand the range of trait scoring allow for a positive association between Openness and Psychoticism (DeYoung et al., 2012; Piedmont et al., 2012).

The relationships between the PID-5 traits and other clinically relevant constructs for personality disorders have also been studied. For instance, the PID-5 traits have been related to general interpersonal impairment (Wright et al., 2012) and dysfunctional beliefs (Hopwood, Schade, Krueger, Wright, & Markon, 2013). In addition, research has also shown the following associations between some specific PID-5 traits and clinical constructs: Antagonism was found to be associated with behavioral deviance (Fossati, Krueger, Markon, Borroni, & Maffei, 2013); Detachment and Antagonism were found to be associated with psychopathy (Strickland, Drislane, Lucy, Krueger, & Patrick, 2013); Negative Affectivity was found to be associated with anxiety (Few et al., 2013); Detachment and Negative Affectivity were found to be associated with depressive symptoms (Few et al., 2013); and Antagonism was found to be associated with problematic drug consumption but not with alcohol consumption (Few et al., 2013). In addition, Time 1 PID-5 assessment predicted mobility and self-care problems, impulse control, work problems, overall functioning, and life satisfaction (Wright et al., 2015). The PID-5 facets have been associated with measures of functional impairment in both student and clinical samples (Keeley, Flanagan, & McCluskey, 2014). For instance, the PID-5 traits appear to be more strongly associated with functioning domains that are conceptually aligned with personality pathology (e.g., getting along with others) than with more distal domains (e.g., mobility, self-care; Chmielewski, Ruggero, Kotov, Liu, & Krueger, 2016). These associations were also replicated using the PID-5 Brief Form (Chmielewski et al., 2016).

The PID-5 psychometric properties were also demonstrated in other languages, such as Italian (Fossati et al., 2013), French (Roskam et al., 2015), Dutch (De Clercq et al., 2014), German (Zimmermann et al., 2014), and Spanish (Gutiérrez et al., 2015). In particular, the Spanish version showed good internal consistency in both clinical and community samples ($\alpha = .79$

and $\alpha = .86$, respectively), presenting a unidimensional structure using both exploratory and confirmatory approaches. The hierarchical structure was also confirmed.

A shorter version of the PID-5 was developed for use as a screening instrument of personality disorders (Krueger, Derringer, Markon, Watson, & Skodol, 2013). This PID-5-BF contains 25 items that assess the five maladaptive traits and a total scale score that evaluates the overall profile across dimensions (Fossati, Somma, Borroni, Markon, & Krueger, 2015). To our knowledge, the psychometric properties of this PID-5-BF were assessed in three studies: one study on a sample of community-dwelling Italian adolescents (Fossati et al., 2015), one study on a clinical sample and a community-dwelling sample of Danish adults (Bach, Maples-Keller, Bo, & Simonsen, 2016), and one study in a U.S. undergraduate sample and a community U.S. sample (Anderson, Sellbom, & Salekin, 2016). The three studies supported the five-factor structure of the instrument. Cronbach's alpha coefficients were lower than in the original version, particularly in the study on Italian adolescents, and ranged from $\alpha = .59$ (Detachment) to $\alpha = .81$ (Psychoticism). The five scales that assessed maladaptive personality traits were related to the adolescents' level of personality dysfunction (Fossati et al., 2015) and to externalized and internalized (depression and dysphoria) measures of psychopathology (Anderson et al., 2016). The PID-5-BF proved to be useful in capturing personality pathology (Anderson et al., 2016; Bach et al., 2016; Fossati et al., 2015) and in adequately discriminating between clinical and community-dwelling populations (Bach et al., 2016). Given the limited existence of empirical studies on the PID-5-BF and the lack of research on Spanish-speaking populations, the current study aimed to evaluate the psychometric properties of this version in an Argentinian general adult population and to establish the relationships among the *DSM-5* pathological traits and the Big Five normal personality traits. We expected to find a five-factor structure of PID-5-BF and convergence between pathological personality traits and the normal personality traits derived from the Big Five model. Specifically, two positive correlations were expected: (a) between Negative Affectivity and Neuroticism and (b) between Psychoticism and Openness to Experience. In addition, three negative correlations were also expected: (a) between Antagonism and Agreeableness; (b) between Detachment and Extraversion; and (c) between Disinhibition and Conscientiousness.

In addition, this study will examine the relationship between PID-5-BF traits and *mental maladaptiveness* in terms of low levels of mental health, as well as *physical maladaptiveness* as assessed through the World Health Organization's (WHO) health risk factors. Keyes (2005) has defined the optimal level of mental health as flourishing, which comprises high levels of emotional, psychological, and social well-being. Keyes (2005) considered that hedonia or emotional well-being comprises the prevalence of positive affect and overall life satisfaction; psychological well-being consists of six dimensions of positive psychological functioning: self-acceptance, personal growth,

purpose in life, environmental mastery, autonomy, and positive relations with others; and social well-being includes five dimensions of positive social functioning: social actualization, social acceptance, social integration, social contribution, and social coherence. Research has shown that low levels of mental health are related to higher levels of generalized anxiety, panic disorders, and depressive symptoms in adult population. In addition, low levels of mental health have been associated to higher risk of suicide, alcohol dependence, and substance abuse (Keyes, 2005, 2007; Keyes, Dhingra, & Simoes, 2010). The association between physical maladaptiveness and the high prevalence of WHO health risk factors has not been explored yet. According to the WHO (2015), a risk factor refers to any attribute, characteristic, or exposure of an individual that increases the likelihood of developing a noncommunicable disease (NCD). The major risk factors that affect people above the age of 18 are tobacco use, harmful alcohol consumption, unhealthy diet, insufficient physical activity, being overweight or obese, high blood pressure, high blood glucose, and high cholesterol. These eight core risk factors have been found to have the greatest impact on NCD mortality and morbidity. Consequently, we expected to observe significant and moderate associations between pathological traits and mental and physical maladaptiveness: higher pathological traits will be related to lower levels of mental health (emotional, psychological, and social well-being) and to a higher number of WHO health risk factors.

Method

Participants

The sample consisted of 1,032 subjects (512 men, 49.6%, and 519 women, 50.3%) with an average age of 39.42 years ($SD = 14.33$) who were residents from Buenos Aires ($n = 702$, 68%) or the Buenos Aires suburbs ($n = 330$, 32%). Most participants were employed at the time of the study ($n = 822$, 79.7%), mainly as employees ($n = 518$, 50.19%), with a lower percentage of participants working independently ($n = 221$, 21%) or as employers ($n = 73$, 7%). Only 11 participants (1.51%) reported working without a salary.

Regarding education level, most subjects ($n = 650$, 63%) completed university or tertiary studies, and the remaining 40% completed secondary education ($n = 382$). Most participants reported middle ($n = 712$, 69%) or upper-middle ($n = 320$, 24%) socioeconomic status. Thus, this was a convenience sample of the urban general population that was highly educated, economically active, and at a middle or upper-middle socioeconomic level.

Instruments

PID-5-BF. The brief version of the 220-item PID-5 inventory (Krueger et al., 2012) that was adapted in Argentina by

Fernández Liporace and Castro Solano (2015) was used. The PID-5-BF (Krueger et al., 2013) consists of 25 items that assess the key five traits of dysfunctional personality proposed in Section III of the *DSM-5* (APA, 2013): Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. Satisfactory reliability values and evidence of validity confirming the proposed five-factorial structure were obtained (see “Results” section). The PID-5-BF uses a 4-point Likert-type scale ranging from 0 = *very false or often false* to 3 = *very true or often true*. Forward translation was the method used for translation of the PID-5-BF from English into Spanish. Two bilingual psychologists with a PhD level were independently involved in the translation process that occurred and did not discuss anything. The translators judged the versions were equivalent. Some final adjustments were made to guarantee psychological equivalence, comprehensibility, and the correctness of the translation.

BFI. The instrument consists of 44 items that assess the big five personality traits (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness To Experience; John, Donahue, & Kentle, 1991). The BFI uses a 5-point Likert-type scale from 1 (*disagree strongly*) to 5 (*agree strongly*). The test is derived from a test of personality adjectives turned into short phrases to facilitate understanding of the implied elements. Research has provided evidence of validity and reliability for the use of this technique in groups of the American general adult population by evaluating concurrent validity with other well-known instruments that assess personality. Studies in Argentina also found evidence of factorial validity of the instrument in adolescent, community, and military samples (Castro Solano & Casullo, 2001; Castro Solano, 2005). In all cases, a five-dimensional model that accounted for approximately 50% of the variance was obtained. Internal consistencies for this sample were $\alpha = .76$ for Extraversion, $\alpha = .79$ for Agreeableness, $\alpha = .82$ for Conscientiousness, $\alpha = .74$ for Neuroticism, and $\alpha = .69$ for Openness to Experience.

Mental Health Continuum—Short Form (MHC-SF). This scale contains 14 items that assesses emotional, psychological, and social well-being (Keyes, 2005). The MHC-SF uses a 5-point Likert-type scale with response options ranging from 0 (*never*) to 5 (*every day*). Several international studies have confirmed the three-factorial structure of the scale and the good internal consistency ($\alpha > .70$; Gallagher, Lopez, & Preacher, 2009; Joshanloo, Wissing, Khumalo, & Lamers, 2013). The validation studies of this instrument in Argentina have also replicated the factorial structure of the instrument and provided evidence of good convergent validity and internal consistency (Lupano Perugini, De la Iglesia, Castro Solano, & Keyes, 2017). In this sample, internal consistencies were .86 for emotional well-being, .75 for social well-being, and .86 for psychological well-being. In this study, the total score ($\alpha = .87$) is used as a measure of overall mental health.

Survey on risk factors for NCD. This survey (National Ministry of Health of Argentina, 2011) follows the guidelines of the WHO (2005) for the detection of risk factors for chronic diseases in people above the age of 18. It consists of 97 questions that are organized into modules on the following: perception of general health, physical activity, blood pressure, body weight, diet, cholesterol, alcohol consumption, use of tobacco, diabetes, and preventive health practices. This survey has been adapted to an Argentinian population and has been tested throughout the country as a part of national studies on risk factors. According to the WHO guidelines, the presence of more than one factor increases the risk of morbidity and mortality. For the current study, the total number of risk factors that were present in an individual (ranging from 0 to 8) was considered to be a measure of health risk.

Procedure

For this study, data from a sample of community-dwelling adults were used. Participation was voluntary and anonymous, and all participants provided their consent. No economic contribution was given for participation in the study. Advanced psychology students who were doing a research practice recruited participants. A senior researcher supervised their work. All instruments were completed in person.

Due to missing data, 12 protocols were removed. Data were analyzed using SPSS version 17, with the FACTOR program.

First, the psychometric properties of the PID-5-BF inventory were assessed by analyzing the internal validity (reliability and factorial structure). Second, relationships between pathological personality traits and normal personality traits were established. Third, associations between maladaptive personality traits and WHO health risk factors and level of mental health (emotional, psychological, and social well-being) were analyzed through correlation and regression analyses.

Results

Structure of Pathological Personality Traits

Analysis strategy. As variables were measured at an ordinal level, to conduct the exploratory factor analysis of the pathological personality traits, a matrix of polychoric correlations was used as input (Holgado-Tello, Chacón-Moscó, Barbero-García, & Vila-Abad, 2010). A fixed criterion of five factors was set for the extraction solution, given that a five-factorial structure of pathological traits had been hypothesized. The maximum likelihood criterion was the estimation method. Afterward, a certain degree of relationship among the obtained factors was assumed and an oblique rotation was performed (Costello & Osborne, 2005). A confirmatory analysis was not performed because it was assumed that the variables were correlated and some items loaded on more

than one factor. Nevertheless, the four-, five-, and six-factor solutions are included in the present study. The benefits of retaining a five-factor structure are commented below.

Exploratory factor analysis. The first step was to verify that the data were suitable for this type of analysis (Bartlett Test of Sphericity = 7,276.9, $df = 300$, $p < .001$; Kaiser–Meyer–Olkin index = .89). As a correlation between factors was assumed, the resulting solution was rotated using the Promin oblique method (Lorenzo-Seva, 2013). The five factors that were obtained explained 59.48% of the total variance. The first factor corresponding to the Antagonism dimension showed high loadings for Items 17, 19, 20, 22, and 25, and accounted for 32.68% of the total variance. The second factor presented high loadings for Items 4, 13, 14, 16, and 18, corresponding to the Detachment dimension, and explained 8.84% of the variance. Item 17, which originally corresponded to the Antagonism dimension, also loaded on the second factor with a relatively moderate load. The third factor included Items 8, 9, 10, 11, and 15 that corresponded to the Negative Affectivity dimension and accounted for 6.7% of the variance. In addition, Item 19 corresponded to the Antagonism dimension and also presented a high loading on this factor. The fourth factor included Items 1, 2, 3, 5, and 6, corresponding to the Disinhibition dimension, and explained 6.7% of the variance. Item 4, which originally belonged to the Detachment dimension, presented moderate loadings on this factor as well. Finally, the fifth factor explained 4.99% of the variance and presented high loadings for Items 7, 2, 21, 23, and 24, which corresponds to the Psychoticism dimension. The complete factorial structure is presented in Table 1. Finally, the estimated reliability for each factor ($\alpha = .87$, $\alpha = .88$, $\alpha = .90$, $\alpha = .89$, and $\alpha = .86$, respectively) and the reliability for the total score ($\alpha = .87$) presented adequate values.

In addition, the four- and six-factor solutions are presented. Regarding the four-factor solution, items are grouped according to the following factors: Detachment (Factor 1), Antagonism (Factor 2), Disinhibition (Factor 3), and Negative Affectivity (Factor 4). The items that correspond to Psychoticism are loaded on Factors 2, 3 and 4. This four-factor solution explained 54.5% of the total variance (refer to the table in the Supplementary Material for complete data). Regarding the six-factor solution, the following factors were clearly delimited: Antagonism, Disinhibition, Psychoticism, and Detachment. Factor 6, which contained items that corresponded to Negative Affectivity, also showed loadings on the Psychoticism factor; thus, it did not result in a neat factor for Negative Affectivity. Moreover, Factor 2 was unclear, and there was no possible interpretation. This factor structure explained 63.43% of the total variance (see the table in the Supplementary Material for complete data).

Considering the aforementioned results in terms of internal validity, the five-factor solution was deemed to be the most adequate structure.

Table 1. Factorial Structure of Pathological Personality Traits (DSM-5): Five-Factor Solution ($N = 1,032$).

	Factor 1 Antagonism	Factor 2 Detachment	Factor 3 Negative affectivity	Factor 4 Disinhibition	Factor 5 Psychoticism
Variance	32.68	8.84	6.70	6.27	4.99
25—It is easy for me to take advantage of others	0.82				
22—I use people to get what I want	0.78				
20—I often have to deal with people who are less important than me	0.58				
17—It's no big deal if I hurt other peoples' feelings	0.48	0.47			
19—I crave attention	0.44		0.65		
16—I don't like to get too close to people		0.84			
14—I'm not interested in making friends		0.77			
18—I rarely get enthusiastic about anything		0.66			
13—I steer clear of romantic relationships		0.55			
4—I often feel like nothing I do really matters		0.46		0.41	
8—I worry about almost everything			0.84		
10—I fear being alone in life more than anything else			0.73		
9—I get emotional easily, often for very little reason			0.70		
15—I get irritated easily by all sorts of things			0.50		
11—I get stuck on one way of doing things, even when it's clear it won't work			0.38		
5—Others see me as irresponsible				0.80	
1—People would describe me as reckless				0.77	
3—Even though I know better, I can't stop making rash decisions				0.75	
2—I feel like I act totally on impulse				0.74	
6—I'm not good at planning ahead				0.73	
23—I often "zone out" and then suddenly come to and realize that a lot of time has passed					0.88
24—Things around me often feel unreal, or more real than usual					0.80
12—I have seen things that weren't really there					0.76
21—I often have thoughts that make sense to me but that other people say are strange					0.61
7—My thoughts often don't make sense to others					0.30
<i>M</i>	1.17	0.59	0.58	0.82	0.62
<i>SD</i>	0.64	0.56	0.52	0.63	0.60

Note. *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013).

Relationship Between Pathological Personality Traits (DSM-5) and Normal Personality Traits (Big Five)

The next step was to estimate the correlations between pathological personality traits (PID-5-BF) and normal personality traits. To score the pathological traits, we used the key scoring from the English version (sum scores). As shown in Table 2, 22 out of the 25 possible correlations were statistically significant. Seven correlations presented moderate ($r \geq .30$) to large ($r \geq .50$) effect sizes.

This analysis confirmed four of the five hypothesized correlations, given that no association was found between Psychoticism and Openness to Experience. However, the Psychoticism trait correlated with the Neuroticism, Agreeableness, and Consciousness dimensions. Overall,

these results would confirm the hypothesis that pathological personality traits are associated with the Big Five model (Costa & Widiger, 1994). In terms of internal validity on the PID-5, data confirm a "Big Four" model of pathological personality traits, as no correlations were found between Psychoticism and Openness to Experience.

Relationship Between Pathological Personality Traits, WHO Health Risk Factors, and Level of Mental Health

As a next step, the relationship between pathological personality traits and other external variables was estimated. Table 3 shows that 25 out of 30 possible correlations were significant and followed the expected direction, with effect sizes ranging from small ($r \geq .10$) to moderate ($r \geq .30$). This

Table 2. Relationships Among Pathological (DSM-5) and Normal (Big Five) Personality Traits ($N = 1,032$).

	Antagonism	Detachment	Negative affectivity	Disinhibition	Psychoticism
Agreeableness	-.39**	-.35**	-.18**	-.28**	-.25**
Extraversion	.02	-.30**	-.07*	-.01	-.16**
Neuroticism	.26**	.28**	.54**	.30**	.34**
Conscientiousness	-.15**	-.22**	-.16**	-.45**	-.27**
Openness	-.04	-.18**	-.07*	-.10**	.09**

Note. Bold-faced values indicate effect sizes from moderate ($\geq .30$) to large ($\geq .50$). *DSM-5* = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013); Openness = Openness to experience.

* $p < .05$. ** $p < .01$.

Table 3. Correlations Among Pathological Personality Traits, WHO Health Risk Factors, and Level of Mental Health ($N = 1,032$).

	WHO health risk factors	Total mental health	Emotional well-being	Psychological well-being	Social well-being
Negative Affectivity	.18**	-.15**	-.17**	-.09	-.12**
Detachment	.21**	-.25**	-.24**	-.24**	-.18**
Antagonism	.16**	-.06	-.08	-.06	-.02
Disinhibition	.18**	-.18**	-.15**	-.17**	-.13**
Psychoticism	.20**	-.16**	-.14**	-.14**	-.10**
PID-5-BF Total	.25**	-.22**	-.22**	-.19**	-.15**

Note. All $p < .01$ have an effect size from small ($\geq .10$) to moderate ($\geq .30$). WHO = World Health Organization; PID-5-BF = Personality Inventory for *DSM-5*–Brief Version.

** $p < .01$.

analysis confirms the positive association between pathological personality traits and health risk factors and the negative relationship between pathological personality traits and mental health. These relationships occur for the overall PID-5 score and for each of the pathological traits (PID-5 scales).

Regression analysis. To predict mental and physical maladaptiveness from pathological personality traits, a series of multiple regression analyses were performed using the Enter method. Scores for each of the PID-5-BF scales were introduced as independent variables, and the total WHO risk factor score and the total mental health score were selected as dependent variables. The following three subscales relating to mental health were also included: Emotional, Psychological, and Social Well-Being. The first regression analysis explained 6% of the variance in WHO health risk factors ($F = 14.48$, $p < .001$) and showed that the following pathological traits of personality were significant predictors: Detachment ($\beta = .13$), Disinhibition ($\beta = .08$), and Negative Affectivity ($\beta = .07$).

In the second regression analysis, PID-5 traits accounted for 8% of the total mental health variance ($F = 18.41$, $p < .001$), and Detachment ($\beta = -.24$), Disinhibition ($\beta = -.10$) and Antagonism ($\beta = .09$) were found to be significant predictors. Regarding the three types of well-being, it was found that pathological personality traits, particularly Detachment ($\beta = -.22$) and Negative Affectivity ($\beta = -.10$), explained 7% of the variance in emotional well-being ($F = 15.96$, $p < .001$).

The contribution of PID-5-BF traits in explaining the variance of psychological and social well-being was less significant. The pathological traits accounted for 6% of the variance in psychological well-being ($F = 14.67$, $p < .001$), with Detachment ($\beta = -.22$) and Disinhibition ($\beta = -.11$) as significant predictors, whereas Detachment ($\beta = -.17$), Negative Affectivity ($\beta = -.08$), Disinhibition ($\beta = -.08$), and Antagonism ($\beta = .11$) were significant predictors of 4% of the variance in social well-being ($F = 10.05$, $p < .001$).

Discussion

The main aim of this study was to evaluate the psychometric properties of the PID-5-BF inventory in a sample of community-dwelling Argentinian adults, given both the limited existence of empirical studies on this version of a pathological traits instrument and the lack of research on Spanish-speaking populations. Regarding reliability, despite the few items that each scale contained, the internal consistency coefficients were adequate and values were similar to those that were obtained using the long PID-5 form (Al-Dajani et al., 2016). The values obtained in the Argentinian sample ($\alpha = .86$ –.90) were even higher than those reported in the three previous studies using the PID-5-BF, including those with adult samples (Anderson et al., 2016; Bach et al., 2016; Fossati et al., 2015).

In terms of internal validity, the factorial structure was consistent with the five pathological personality traits of the

theoretical model used. All items presented high loadings on the factor of their corresponding trait, except for three items (Items 4, 17, and 19) that exhibited high and mixed loadings on two factors. Bach et al. (2016) also found high loadings of these three items on the same second factor; however, in the Danish adult sample, loadings on the second factor were lower than in our sample, particularly on Items 17 and 19. Conversely, Fossati et al. (2015) reported that one item did not load on the hypothesized factor and the other seven items presented loadings on more than one factor. However, as that study was conducted on adolescents, it is possible to conclude that the PID-5-BF shows a clearer five-factor structure in adult samples.

This is the first investigation that used the PID-5-BF to study the association between pathological and normal personality traits. Regarding external validity, convergence was examined between the five pathological traits and the five normal personality traits models. Indeed, convergence among all pathological and normal traits was found, except for the hypothesized convergence between Psychoticism (pathological personality trait) and Openness to Experience (normal personality trait). In line with similar studies that used the long form of the PID-5, the association between these two traits could not be found (Anderson et al., 2013; Few et al., 2013; Quilty et al., 2013; Suzuki et al., 2015).

DeYoung et al. (2012) found that although Openness and Intellect can be considered distinct traits in the hierarchical organization of personality under the Big Five model, the Openness/Intellect domain itself reflects the shared variance of these two lower level traits. In fact, Chmielewski et al. (2014) posited that the Openness/Intellect domain *per se* is weakly associated with Psychoticism; however, when the shared variance between Openness to Experience and Intellect is removed and the unique contribution of these traits is considered, strong associations with Psychoticism emerged, often in opposing directions. The correlations tended to be positive with Openness and negative with Intelligence (Chmielewski et al., 2014). Consequently, the debate has turned to the definition of Openness to Experience/Intellect and several authors have proposed broadening its conceptualization. For instance, in a very interesting theoretical formulation, DeYoung et al. (2012) sustained that the Openness/Intellect domain can be described as a simplex ranging from intelligence to apophenia (positive psychoticism). Upon expanding the conceptualization of the domain, the authors found a positive association between Psychoticism and apophenia and a negative association with Intelligence. Therefore, it was argued that the traditional Openness to Experience/Intellect conceptualization only captures the central core of the construct, which would explain the weak association found with Psychoticism in many studies (DeYoung et al., 2012). This hypothesis can explain the weak association between Psychoticism and Openness to Experience that was found in the present study.

Although the Spanish version of PID-5-BF shows a clear five-factor structure, in terms of continuity from maladaptive to adaptive personality traits, the pathological Big Four model is more compatible with the data. The Big Four is composed of two internalizing factors—Detachment and Negative Affectivity—and two externalizing factors—Antagonism and Disinhibition (Widiger & Simonsen, 2005). The original proposal for a dimensional scheme for the *DSM-5* was the Big Four model but the *DSM-5* Personality Disorders Work Group recognized that these four domains failed to capture characteristics related to the “odd or eccentric” personality disorders (schizoid, schizotypal, and paranoid personality disorders); therefore, they added a fifth higher order domain labeled Psychoticism (Watson et al., 2013). However, the four-factor traits show consistent associations with normal personality traits; thus, it seems necessary for future studies to clarify and expand the conceptualization of Openness to Experience to provide further evidence of its association with Psychoticism.

We also examined the relationship among the PID-5-BF pathological traits and other external measures of mental and physical maladaptiveness assessed through the level of mental health and the number of WHO health risk factors. As expected, the severity of personality traits was associated with low levels of mental health and a higher number of WHO health risk factors. The PID-5-BF total scale was a good overall variable for assessing maladaptive traits and for replicating the associations with mental and physical maladaptiveness. Nevertheless, the associations among these variables were low to moderate, and the contribution of PID-5-BF domains to the total number of WHO risk factors and to mental health was weak.

Chmielewski et al. (2016) found that the PID-5 traits were more strongly associated with functioning domains that were conceptually aligned with personality pathology than with more distal domains. However, in this study, we considered the total number of health risk factors, some of which are more closely related to personality pathology (e.g., harmful alcohol consumption), while others are more distal from personality issues (e.g., elevated cholesterol). This diversity in the type of risk factors assessed may explain the low to moderate correlation that was found.

An interesting finding was the low to moderate association between pathological personality traits and the measures of mental health. Mental health (emotional, psychological, and social well-being) and mental illness are considered to be two different but related variables (Keyes, 2005). For instance, there is strong evidence showing the association between mental health and Axis I clinical disorders; higher levels of mental health are associated with lower incidence of some mental disorders such as depression or anxiety disorders years after. In addition, mental health was also related to alcohol dependence, risk of suicide, and substance abuse (Keyes, 2007; Keyes et al., 2010). However, the relationship between mental health and personality traits or disorders has not been studied. Our results indicate that mental health (and the

different types of well-being) has a weaker association with pathological personality traits than with clinical disorders. A low association between social well-being and pathological personality traits may be attributed to the fact that the items comprise content that is more socially oriented on the well-being measure in comparison with the PID-5 items, which focus more on individual characteristics. In addition, we used a nonclinical sample, which had low levels of clinical impairment. It is possible that the more general content of the PID-5-BF items, which are related to how individuals feel, perceive, behave, and think, is less associated with the level of individual well-being than the association found between a clinical disorder such as depression and well-being in which this variable is clearly low. Future studies using clinical samples should reexamine this association with mental health.

Among the five traits that were assessed in the PID-5-BF, Detachment was the most related to emotional, psychological, and social well-being. Detached individuals are considered to be emotionally depressed or anhedonic, and they may be inclined to avoid and withdraw from people who they may suspect of (Hopwood et al., 2013). Thus, a lower level of well-being in individuals who are high in this maladaptive trait may also be expected.

Some of the limitations of this research should be mentioned. First, although a large sample of an adult population was used ($N = 1,032$), it was a community sample with a low presence and low severity of pathological personality traits; therefore, it would be important to evaluate the psychometric properties and the screening ability of the instrument in clinical samples. In addition, the sample mainly consisted of individuals with high education levels and with a middle or upper-middle socioeconomic status; thus, future research should include participants from different socioeconomic statuses and of lower education levels. Conversely, biases may be found in participants' responses on questionnaires, as self-reports were used to evaluate all of the variables in this study.

Despite the limitations, the results of this study show that the PID-5-BF has good psychometric properties, such as reliability and internal and external validity, and it can be used as a valid and reliable instrument to assess maladaptive personality traits in adults, specifically in Spanish-speaking populations.

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Supplementary Material

The supplements for the article are available online.

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