

Research Paper

Cultural Validation of ICD-11 and DSM-5 Personality Models: Evidence From PiCD-11 and PID-5 in Iran



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ABSTRACT

Objective: The dimensional approaches to personality disorders (PDs) proposed in ICD-11 and DSM-5 were developed to address limitations of traditional categorical classifications. Despite growing interest in these models, cross-cultural evidence from non-Western populations remains limited.

Methods: The present study examined the psychometric characteristics of the personality inventory for ICD-11 (PiCD) and evaluated its associations with external variables in comparison with the personality inventory for DSM-5–brief form (PID-5-BF) within an Iranian sample. Participants included 347 university students from Tehran (61.9% female), consisting of 206 non-clinical and 141 help-seeking individuals. Participants completed the PiCD, PID-5-BF, BFI-10, LPFS-BF 2.0, SCL-25, BIS-11, and CAB. Confirmatory factor analysis (CFA), correlation analyses, and hierarchical regression analyses were conducted.

Results: The PiCD demonstrated acceptable reliability and supported a five-factor structure following the removal of four items. PiCD domains were significantly associated with personality dysfunction, psychological distress, impulsivity, and externalizing behaviors. Negative affectivity was most strongly related to anxiety and depression, whereas disinhibition showed stronger associations with impulsivity and externalizing tendencies. Regression analyses indicated that PiCD domains explained meaningful variance in psychological and behavioral outcomes. Overall, the PiCD and PID-5-BF showed broadly comparable patterns of associations with external measures.

Conclusion: The findings provide preliminary support for the reliability and structural validity of the ICD-11 dimensional personality trait model in an Iranian sample. The results also suggest considerable overlap between the ICD-11 and DSM-5 dimensional frameworks in the assessment of maladaptive personality traits and related psychopathology.

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Highlights

- The Persian PiCD demonstrated acceptable reliability and factorial validity in an Iranian sample.
- PiCD domains were significantly associated with personality functioning, psychological distress, impulsivity, and externalizing behaviors.
- CFA supported the five-factor structure of the ICD-11 personality trait model.
- PiCD and PID-5-BF showed broadly similar patterns of associations with external correlates.
- Findings provide preliminary cross-cultural evidence for the applicability of ICD-11 dimensional personality assessment in a non-Western context.

Plain Language Summary

Personality disorders (PDs) are characterized by long-standing patterns of emotions, thoughts, and behaviors that can negatively affect relationships, psychological well-being, and daily functioning. To overcome limitations of traditional categorical diagnostic systems, dimensional models of personality pathology have been introduced in DSM-5 and ICD-11. This study examined the Persian version of the personality inventory for ICD-11 (PiCD) in a sample of Iranian university students and compared its associations with a DSM-5-based personality measure (PID-5-BF). The results showed that the PiCD demonstrated acceptable reliability and was meaningfully associated with emotional difficulties, impulsivity, personality functioning, and externalizing behaviors. Overall, the findings suggest that the ICD-11 dimensional personality model is applicable in Iranian cultural contexts and shows considerable overlap with DSM-5 dimensional approaches. These results may support future research and clinical assessment of PDs in non-Western populations

Introduction

Personality disorders (PDs) are common mental health conditions associated with substantial psychological, interpersonal, and functional impairments. Epidemiological evidence suggests that approximately 7–8% of the general population meet diagnostic criteria for a PD, with considerably higher rates reported among psychiatric populations (Winsper et al., 2020). PDs are also frequently associated with other psychiatric disorders and adverse psychosocial outcomes, contributing to a significant public health burden (Hayward & Moran, 2008; Köhne & Isvoranu, 2021). Consequently, the assessment and conceptualization of personality pathology have remained central concerns. Traditionally, PDs were conceptualized using categorical diagnostic systems, such as earlier editions of the diagnostic and statistical manual of mental disorders (DSM) (APA, 2013). However, persistent concerns regarding excessive diagnostic comorbidity, within-category heterogeneity, temporal instability, and limited empirical support for categorical thresholds prompted increasing interest in dimensional conceptualizations of personality pathology (Bach et al.,

2015; Widiger & Trull, 2007). These developments contributed to the introduction of the alternative model for (AMPD) in DSM-5 section III (Morey et al., 2020).

Within the AMPD framework, PDs are conceptualized through two interconnected dimensions: Criterion A, which assesses impairments in self and interpersonal functioning, and criterion B, which captures maladaptive personality trait characteristics (Anderson et al., 2018). This dimensional framework has been considered a clinically and empirically informative alternative to categorical diagnosis and has contributed to contemporary perspectives on personality pathology (Hopwood et al., 2018; Lugo et al., 2019).

Parallel to these developments, the 11th edition of the international classification of diseases (ICD-11) introduced a dimensional model for PDs intended to address several limitations associated with the ICD-10 categorical approach (WHO, 2021). The ICD-11 model evaluates personality pathology in terms of severity and five maladaptive trait domains: negative affectivity, detachment, dissociality, disinhibition, and anankastia (Bach & First, 2018). Although the ICD-11 trait domains show

substantial conceptual overlap with the DSM-5 AMPD trait model, notable structural differences remain, including the absence of psychoticism in ICD-11 and the inclusion of Anankastia as a distinct domain (Bach et al., 2017; Bach et al., 2018).

A number of self-report instruments have been introduced to assess these dimensional frameworks, among which the Personality Inventory for DSM-5 (PID-5) and the personality inventory for ICD-11 (PiCD) are the most widely recognized (Oltmanns, 2018). Existing research has generally supported the psychometric adequacy of these instruments across different cultural settings, including studies conducted in Iran (Abdollahpur, 2023; Amini et al., 2023; Bach et al., 2020; Fossati, 2013; Lotfi et al., 2018). Nevertheless, empirical investigations of the ICD-11 model and the PiCD remain relatively limited compared with the broader literature on the DSM-5 AMPD, particularly in non-Western populations (Gutiérrez et al., 2021; Oltmanns, 2018). Additional cross-cultural research may therefore help clarify the applicability and contextual relevance of these dimensional models across diverse settings.

Although previous research has investigated the structural features of the ICD-11 and DSM-5, comparatively limited attention has been given to their relationships with clinically meaningful external variables, including internalizing symptoms, such as anxiety and depression, as well as externalizing tendencies, such as impulsive behavior. Investigating these associations may contribute further evidence regarding the convergent and discriminant validity of dimensional personality assessment models.

Accordingly, the current study sought to evaluate the psychometric properties of the PiCD in an Iranian mixed sample and to examine its relationships with external correlates in comparison with the PID-5. Rather than evaluating the superiority of one model over another, this study aimed to provide culturally informed evidence regarding the utility and correlational patterns of ICD-11 and DSM-5 dimensional personality assessments within a non-Western context.

Materials and Methods

This cross-sectional study was conducted with the participation of 347 individuals recruited from public universities in Tehran, Iran, consisting of 206 non-clinical participants (Mage=22.26, SD=3.51; 59.22% women) and 141 participants in the help-seeking subgroup (Mage=23.69, SD=3.18; 65.95% women). To avoid

overinterpretation of clinical status, the term “help-seeking subgroup” was used throughout the manuscript instead of “clinical group.” Participants in this subgroup were students who had sought psychological services at university counseling centers due to emotional, interpersonal, or behavioral concerns. Participants were not recruited based on confirmed PD diagnoses. All participants were native Persian speakers.

Participants were selected through convenience sampling using public advertisements and referrals from university counseling centers. Before participation, all individuals received information regarding the study objectives and procedures, and written informed consent was obtained prior to completion of the paper-based questionnaires. Ethical approval for the study was granted by the Research Ethics Committee of [Iran University of Medical Sciences](#). Participation was entirely voluntary, and confidentiality of participant information was preserved throughout the research process.

Formal structured diagnostic interviews (e.g. SCID-5-PD) were not administered as part of the recruitment or assessment process. Therefore, findings related to the help-seeking subgroup should be interpreted cautiously and should not be generalized to individuals with formally diagnosed PDs. Given the relatively young age of the participants, the findings are best interpreted within the context of dimensional personality traits in young adulthood rather than stable personality pathology across the lifespan.

Study instruments

The following validated instruments were administered to assess personality traits, personality functioning, and external correlates:

Demographic form

Participants completed a short demographic questionnaire that collected information on their race, gender, and age.

Personality inventory for ICD-11

The personality inventory for ICD-11 (PiCD) (Oltmanns, 2018) is a 60-item self-report instrument developed to evaluate five maladaptive personality trait domains derived from the ICD-11 dimensional framework. Responses are scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Previous Iranian research has reported acceptable internal con-

sistency for the Persian version of the instrument, with Cronbach's α values ranging from 0.73 for dissociality to 0.82 for negative affectivity (Amini et al., 2023).

Personality inventory for DSM-5–brief form

The personality inventory for DSM-5–brief form (PID-5-BF) (Krueger et al., 2012) is a 25-item self-report instrument designed to evaluate five maladaptive personality trait domains associated with the DSM-5 AMPD. Items are scored using a 4-point Likert scale ranging from 0 (very false) to 3 (very true). Prior studies have provided evidence supporting the reliability and validity of the Persian version of the PID-5-BF (Amini et al., 2018).

Big five inventory–10

The big five inventory–10 (BFI-10) (Rammstedt, 2007) is a short 10-item measure based on the five-factor model of personality. It evaluates the domains of neuroticism, extraversion, openness, agreeableness, and conscientiousness. Previous research has demonstrated acceptable psychometric characteristics, including satisfactory convergent validity and test–retest reliability. Comparable findings have also been documented in Iranian populations (Mohammad zadeh & Najafi, 2010).

Level of personality functioning scale–brief form 2.0

The level of personality functioning scale–brief form 2.0 (LPFS-BF 2.0) (Hutsebaut, 2016) is a 12-item self-report measure developed to assess personality functioning across four domains, including identity, self-direction, empathy, and intimacy. Responses are scored on a 4-point scale ranging from 1 (completely untrue) to 4 (completely true). Earlier psychometric studies have supported the reliability and construct validity of the instrument. In an Iranian sample, Ali-niyae et al. (2024) reported satisfactory internal consistency for both self-functioning and interpersonal functioning dimensions.

Symptom checklist–25

The symptom checklist–25 (SCL-25) (Najarian, 2001) is an abbreviated form of the SCL-90 designed to evaluate general psychological symptoms in non-hospitalized psychiatric populations. Previous studies conducted in Iran have reported favorable construct validity and strong internal consistency for the Persian version of the instrument.

Barratt impulsiveness scale–11

The Barratt impulsiveness scale–11 (BIS-11) (Patton et al., 1995) is a well-established instrument used to assess impulsivity across three domains: attentional impulsivity, motor impulsivity, and non-planning impulsivity. The Persian version of the scale has demonstrated adequate reliability and support for its three-factor structure (Javid et al., 2012).

Crime and analogous behavior scale

The crime and analogous behavior scale (CAB) (Miller & Lynam, 2003) is a self-report measure designed to assess externalizing and antisocial behaviors. In the present study, two composite indices were derived, including a lifetime drug-use variety score and an antisocial behavior variety score. Higher scores indicated greater endorsement of externalizing behaviors.

Statistical analysis

Descriptive statistics, including means, standard deviations, Cronbach's α and McDonald's omega, were computed for all study variables. Pearson correlation analyses were performed to examine the relationships among PiCD domains, PID-5 traits, and external correlates. Hierarchical regression analyses were conducted to assess the predictive contributions of PiCD and PID-5 domains. In addition, confirmatory factor analysis (CFA) was carried out to evaluate the factorial structure of the PiCD.

Because only a small number of responses were missing for three CAB items, missing values were replaced using mean substitution procedures (Schumacker, 2014). All statistical analyses were conducted using SPSS software, version 23, AMOS software, version 24, and R software, version 4.0.

Results

Descriptive analysis

Table 1 presents the sociodemographic characteristics of the study sample, including age, education level, and marital status. The total sample consisted of 347 participants (61.9% women) with a Mean $\pm$ SD age of 22.84 $\pm$ 3.71 years. The non-clinical group included 206 participants, while 141 participants were recruited from university counseling centers and classified as a help-seeking group (not formally diagnosed clinical cases). The two groups showed broadly similar distributions across educational level and marital status.

Table 1. Sociodemographic characteristic of samples

Variables	Mean±SD/No. (%)		
	Clinical	Non-clinical	Total
	(n=141; 65.95% Female)	(n=206; 59.22% Female)	(n=347; 61.9% Female)
Age (y)	23.69±3.18	22.26±3.51	22.84±3.71
Education	Bachelor' degree	155(75.2)	228(65.7)
	Masters' degree	19(9.2)	75(21.6)
	PhD	25(12.1)	30(8.6)
	Others	7(3.4)	14(4)
Marital status	Single	179(86.9)	301(86.7)
	Married	27(13.1)	42(12.1)
	Others	-	4(1.2)

Abbreviation: M: Mean; SD: Standard deviation; OCD: Obsessive compulsive disorder.

Table 2 presents descriptive statistics for PID-5-BF and PiCD domains in both non-clinical and help-seeking subgroups.

Internal consistency

Internal consistency was evaluated using Cronbach's α and McDonald's omega coefficients. For the PiCD, alpha coefficients ranged from 0.7 (dissociality) to 0.84 (negative affectivity), with an overall alpha of 0.83. Omega coefficients indicated similar levels of reliability ($\omega=0.8$ overall). For the PID-5-BF, alpha coefficients ranged from 0.67 (psychoticism) to 0.76 (detachment), with an overall alpha of 0.86. Omega coefficients also indicated acceptable reliability ($\omega=0.88$). In overall, both instruments showed acceptable levels of internal consistency in the present sample

Correlation analysis

Pearson correlation analyses were performed to assess the associations between PiCD and PID-5-BF domains and external variables, including Big Five personality traits, personality functioning, psychological symptoms, impulsivity, and externalizing behaviors.

In **Table 3** scale statistics and reliability indices for the PiCD and PID-5-BF. As shown in **Tables 4** and **5**, PiCD domains were significantly associated with personality functioning (LPFS-BF), psychological symptoms (SCL-25), and impulsivity (BIS-11). In general, stronger associations were observed with personality dys-

function and distress-related variables. Similarly, PID-5-BF domains showed significant associations with these external correlates.

Overall, both instruments showed broadly similar patterns of associations, with some differences in effect sizes across domains.

Hierarchical regression analysis

To further examine the predictive utility of the PiCD and PID-5, hierarchical regression analyses were performed. In the first step, external correlates were regressed onto PiCD, followed by PID-5 in the second step. Coefficients of determination (R^2) and change coefficients (ΔR^2) were calculated to determine the predictive contribution of each model. Steiger's z-tests were used to compare the strength of correlations. The VIF and tolerance were utilized to assess the collinearity for predictive variables for models ($VIF<3.88$, tolerance >0.36). Results indicate that PiCD significantly predicted external correlates, including LPFS ($\Delta R^2=0.39$, $P<0.001$), anxiety ($\Delta R^2=0.12$, $P<0.001$), depression ($\Delta R^2=0.11$, $P<0.001$), impulsivity ($\Delta R^2=0.12$, $P<0.001$), and criminal behavior ($\Delta R^2=0.04$, $P<0.001$). PID-5 primarily predicted impulsivity ($\Delta R^2=0.13$, $P<0.001$), LPFS ($\Delta R^2=0.08$, $P<0.001$), anxiety ($\Delta R^2=0.03$, $P<0.001$), depression ($\Delta R^2=0.03$, $P<0.001$), with no significant differences between the models in predicting BFI scores except neuroticism ($\Delta^2=0.01$, $P<0.001$) (**Table 6**).

Table 2. Descriptive statistics for PID-5-BF and PiCD in nonclinical and clinical samples

Domains & Facets	Mean±SD	
	Non Clinical	Clinical
PID-5-BF	1.07±0.49	1.11±0.44
Negative affectivity	1.2±0.65	1.4±0.81
Detachment	1.15±0.62	1.07±0.57
Antagonism	0.86±0.61	0.81±0.47
Disinhibition	1.05±0.66	1.14±0.65
Psychoticism	1.11±0.63	1.11±0.61
PiCD	2.69±0.32	2.75±0.32
Negative affectivity	2.84±0.58	3.11±0.67
Disinhibition	2.44±0.56	2.48±0.55
Detachment	2.49±0.6	2.45±0.68
Dissociality	2.3±0.54	2.27±0.52
Anakastia	3.37±0.55	3.43±0.43

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Confirmatory factor analysis

Confirmatory factor analysis (CFA) was performed using AMOS to assess the five-factor structure of the PiCD. The model showed acceptable fit indices (CMIN/df=1.44; RMSEA=0.036; CFI=0.9; IFI=0.9; GFI=0.93; AGFI=0.95; RMR=0.08). Four items (items 10, 14, 20, and 26) were removed due to factor loadings below 0.50. Item removal was based on statistical criteria and theoretical consistency.

After modification, all retained items demonstrated loadings above 0.5, supporting the factorial validity of the PiCD in this sample. Table 7 presents intercorrelations among PiCD domains.

Conceptual model of PiCD

Figure 1 presents the five-factor structure of the PiCD, comprising negative affectivity, detachment, dissociality, disinhibition, and Anankastia.

Discussion

The present study sought to investigate the factorial structure of the ICD-11 model of PDs, to evaluate the psychometric properties of the Persian version of the PiCD, and to compare its external correlates with those of the personal-

ity inventory for DSM-5 (PID-5). The research was conducted in an Iranian university-based sample comprising both non-clinical and help-seeking participants, thereby contributing to the expanding literature on dimensional models of personality pathology in non-Western cultural contexts.

Novelty and context of the study

The ICD-11 model of PDs constitutes a relatively recent advancement within the field of psychopathology, and empirical research on its operationalization through instruments, such as the PiCD is still evolving. Existing studies have primarily focused on initial translation and psychometric evaluation in Western and a limited number of non-Western contexts (Bach et al., 2018; Gaebel, 2017).

Cross-cultural validation remains an important issue in personality assessment, as emphasized in previous comparative research on DSM-5 and ICD-11 trait models (Lugo et al., 2019). In this regard, the present study provides preliminary evidence regarding the applicability of the PiCD in an Iranian sample, extending previous findings reported in Iranian and related cultural contexts (Lotfi et al., 2018; Amini et al., 2023). However, these findings should be interpreted as context-specific evidence rather than definitive validation of the model.

Table 3. Scale statistics and reliability indices (cronbach's α and McDonald's omega) for the PiCD and PID-5-BF

Domains and Facets	Mean $\pm$ SD	Alpha (N.items)	McDonald's Omega
PiCD	2.71 $\pm$ 0.32	0.83(60)	0.8
NA	2.95 $\pm$ 0.63	0.84(12)	0.84
DN	2.46 $\pm$ 0.56	0.77(12)	0.76
DT	2.48 $\pm$ 0.63	0.81(12)	0.79
DL	2.29 $\pm$ 0.53	0.70(12)	0.71
AN	3.39 $\pm$ 0.5	0.74(12)	0.7
PID-5-BF	1.09 $\pm$ 0.47	0.86(25)	0.88
NE	1.28 $\pm$ 0.73	0.68(5)	0.7
DE	1.12 $\pm$ 0.6	0.76(5)	0.77
ANT	0.84 $\pm$ 0.56	0.73(5)	0.67
DI	1.08 $\pm$ 0.66	0.75(5)	0.76
PSY	1.11 $\pm$ 0.62	0.67(5)	0.69
BFI	3.48 $\pm$ 0.38	-	-
N	3.11 $\pm$ 0.81	-	-
E	3.35 $\pm$ 0.87	-	-
O	3.73 $\pm$ 0.82	-	-
A	3.67 $\pm$ 0.69	-	-
C	3.31 $\pm$ 0.74	-	-
LPFS-BF	1.05 $\pm$ 0.6	-	-
SFS	1.09 $\pm$ 0.74	-	-
IFS	1.01 $\pm$ 0.57	-	-
SCL	1.43 $\pm$ 0.90	-	-
Anxiety	1.49 $\pm$ 0.97	-	-
Depression	1.35 $\pm$ 1.08	-	-
CAB	0.19 $\pm$ 0.12	-	-
Alcohol/drug	0.32 $\pm$ 0.13	-	-
Property crime	0.1 $\pm$ 0.23	-	-
Violent crime	0.10 $\pm$ 0.14	-	-
BIS-11	2.18 $\pm$ 0.43	-	-
Attentional	2.35 $\pm$ 0.46	-	-
Motor	1.78 $\pm$ 0.59	-	-
Non-planning	2.36 $\pm$ 0.69	-	-

Abbreviation: PiCD: Personality inventory for ICD-11; NA: Negative affectivity; DN: Disinhibition; DT: Detachment; DL: Dissociality; AN: Anankastia; PID-5-BF: Personality inventory for DSM-5-Breif form; NE: Negative affectivity; DE: Detachment; ANT: Antagonism; DI: Disinhibition; PSY: Psychoticism; BFI: Big five inventory; E: Extraversion; A: Agreeableness; C: Conscientiousness; N: Neuroticism; O: Openness; LPFS: Level of personality functioning; SFS: Self-functioning scale; IFS: Interpersonal functioning scale; SCL: Symptom checklist; CAB: Crime and analogous behavior scale; BIS: Barratt impulsiveness scale.

Table 4. Correlations among PiCD-11 domains and other instruments

Variables	NA	DN	DT	DL	AN	PiCD-total
BFI	0.157**	-0.123*	-0.268**	0.006	-0.26**	-0.003
N	0.345**	0.036	0.014	0.084	0.07	0.0203**
E	-0.015	-0.019	-0.474**	0.114*	0.062	-0.142**
O	0.104	0.071	-0.057	0.033	0.126*	0.094
A	-0.121*	-0.182**	-0.01	-0.186**	0.115*	-0.14**
C	0.042	-0.245**	-0.08	-0.075	0.276**	-0.038
LPFS	0.645**	0.452**	0.42**	0.249**	-0.094	0.627**
SFS	0.647**	0.424**	0.371**	0.185**	-0.118*	0.571**
IFS	0.513**	0.398**	0.399**	0.282**	-0.045	0.575**
SCL	0.667**	0.386**	0.325**	0.221**	-0.4	0.583**
Anxiety	0.632**	0.34**	0.257**	0.164**	0.008	0.524**
Depression	0.544**	0.349**	0.333**	0.242**	-0.096	0.515**
CAB	0.104	0.276**	0.064	0.253**	-0.129*	0.204**
Alcohol/Drug	0.052	0.122*	0.063	0.062	-0.047	0.093
Property crime	0.02	0.239**	-0.001	0.217**	-0.148**	0.12**
Violent crime	0.133**	0.294**	0.059	0.316**		0.24**
BIS	0.302**	0.643**	0.175**	0.244**	0.482**	0.34**
Attentional	0.182**	0.391**	0.017	0.148**	-0.349**	0.153**
Motor	0.421**	0.584**	0.139**	0.306**	-0.259**	0.442**
Non-planning	0.102	0.481**	0.222**	0.111*	-0.468**	0.183**

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Abbreviation: PiCD: Personality inventory for ICD-11; NA: Negative affectivity; DN: Disinhibition; DT: Detachment; DL: Dis-sociality; AN: Anankastia; BFI: Big five inventory; E: Extraversion; A: Agreeableness; C: Conscientiousness; N: Neuroticism; O: Openness; LPFS: Level of personality functioning; SFS: Self-functioning scale; IFS: Interpersonal functioning scale; SCL: Symptom checklist; CAB: Crime and analogous behavior scale; BIS: Barratt impulsiveness scale.

**P<0.01, *P<0.05.

Psychometric properties of the PiCD

The results demonstrated acceptable internal consistency for the total PiCD scale and its domains, with Cronbach's α coefficients ranging from 0.70 to 0.84, while McDonald's omega values indicated comparable levels of reliability. These findings align with previous psychometric studies of the PiCD conducted in other cultural contexts (Gutiérrez et al., 2021).

The PID-5-BF similarly demonstrated adequate reliability, although slight differences in internal consistency between instruments may reflect differences in scale length and item coverage rather than substantive

differences in construct validity (Fossati et al., 2013). Therefore, reliability comparisons should be interpreted cautiously.

External correlates and convergent validity

Correlation analyses demonstrated that PiCD domains were meaningfully associated with personality functioning, psychological distress, impulsivity, and externalizing behaviors. These associations are consistent with the theoretical assumptions of the ICD-11 trait model as well as prior empirical findings (Bach & First, 2018; Amini et al., 2023).

Table 5. Correlations among PID-5-BF domains and other instruments

Variables	NE	DE	ANT	DIS	PSY	PID5-total
BIS	0.314**	0.27**	0.291**	0.566**	0.354**	0.484**
Attentional	0.198**	0.1	0.185**	0.325**	0.213**	0.276**
Motor	0.398**	0.234**	0.255**	0.571**	0.356**	0.495**
Non-planning	0.132*	0.265**	0.22**	0.391**	0.238**	0.331**
BFI	0.116	-0.109*	-0.006	-0.032	-0.006	-0.004
BFI.N	0.31**	-0.08	0.107*	0.074	0.165**	0.205**
BFI.E	0.001	-0.236**	0.007	0.021	-0.099	-0.079
BFI.O	-0.038	-0.013	0.025	0.049	0.054	0.019
BFI.A	-0.053	-0.031	-0.104	-0.134*	-0.091	-0.11*
BFI.C	-0.038	-0.013	0.025	0.049	0.054	0.019
LPFS	0.503**	0.419**	0.304**	0.442**	0.494**	0.587**
SFS	0.515**	0.386**	0.237**	0.428**	0.471**	0.556**
IFS	0.387**	0.377**	0.331**	0.373**	0.425**	0.509**
SCL	0.431**	0.295**	0.194**	0.374**	0.439**	0.474**
Anxiety	0.436**	0.216**	0.184**	0.321**	0.397**	0.427**
Depression	0.315**	0.327**	0.159**	0.351**	0.384**	0.417**
CAB	0.078	0.075	0.14**	0.145**	0.122*	0.149**
Alcohol/Drug	-0.01	0.027	0.036	0.051	0.057	0.042
Property crime	0.026	0.009	0.153**	0.131*	0.065	0.099
Violent crime	0.141**	0.109*	0.16**	0.163**	0.144**	0.192**

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Abbreviation: PID-5-BF: Personality inventory for DSM-5-brief form; NE: Negative affectivity; DE: Detachment; ANT: Antagonism; DI: Disinhibition; PSY: Psychoticism; BFI: Big five inventory; E: Extraversion; A: Agreeableness; C: Conscientiousness; N: Neuroticism; O: Openness; LPFS: Level of personality functioning; SFS: Self-functioning scale; IFS: Interpersonal functioning scale; SCL: Symptom checklist; CAB: Crime and analogous behavior scale; BIS: Barratt impulsiveness scale.

**P<0.01, *P<0.05.

Similar patterns were observed for PID-5-BF, indicating substantial convergence between ICD-11 and DSM-5 trait frameworks in their nomological networks (Bach et al., 2017). Associations with five-factor model traits further provided support for convergent validity, particularly for domains, such as negative affectivity and disinhibition (Bach et al., 2018).

Overall, the results suggest that both models capture similar underlying dimensions of maladaptive personality traits, although differences in effect sizes should not

be interpreted as evidence of superiority of one model over the other.

Personality functioning and model integration

Both PiCD and PID-5-BF domains were significantly associated with levels of personality functioning (LPFS-BF), in line with previous research linking pathological personality traits to impairments in self and interpersonal functioning (Hopwood et al., 2018; Hutsebaut et al., 2016).

Table 6. Correlation and hierarchical regression analyses

Domains/Facets	PiCD			PID-5-BF			Steiger's z Test
	r	R ²	ΔR ²	r	R ²	ΔR ²	
BFI	-0.003	0	0	-0.004	0	0	0.019
N	0.2**	0.038**	0.012*	0.2**	0.039**	0.012*	0
E	-0.14**	0.017**	0.014*	-0.07	0.003	0	-1.37
O	0.09	0.006	0.01	0.01	0	0.002	1.56
A	-0.14**	0.017**	0.009	-0.11*	0.009*	0.002	-0.59
C	-0.03	0.001	0	-0.06	0.001	0.002	0.58
LPFS	0.62**	0.391**	0.39**	0.58**	0.342**	0.083**	1.04
SFS	0.57**	0.324**	0.1**	0.55**	0.307**	0.083**	0.49
IFS	0.57**	0.328**	0.124**	0.5**	0.257**	0.053**	1.7
SCL	0.58**	0.338**	0.34**	0.47**	0.222**	0.033**	2.65**
Anxiety	0.52**	0.272**	0.12**	0.42**	0.18**	0.027**	2.29*
Depression	0.51**	0.263**	0.116**	0.41**	0.171**	0.025**	2.27*
CAB	0.2**	0.039**	0.042**	0.15**	0.019**	0.002	0.99
Alcohol/Drug	0.09	0.006	0.007	0.04	0.002	0	0.98
Property crime	0.12**	0.011*	0.005	0.09	0.007	0.002	0.59
Violent crime	0.24**	0.055**	0.026**	0.19**	0.034**	0.005	1
BIS	0.34**	0.112**	0.115**	0.48**	0.232**	0.127**	3.08**
Attentional	0.15**	0.021**	0	0.27**	0.074**	0.053**	-2.41*
Motor	0.44**	0.193**	0.041**	0.49**	0.242**	0.09**	-1.14
Non-planning	0.18**	0.031**	0	0.33**	0.107**	0.076**	-3.06**

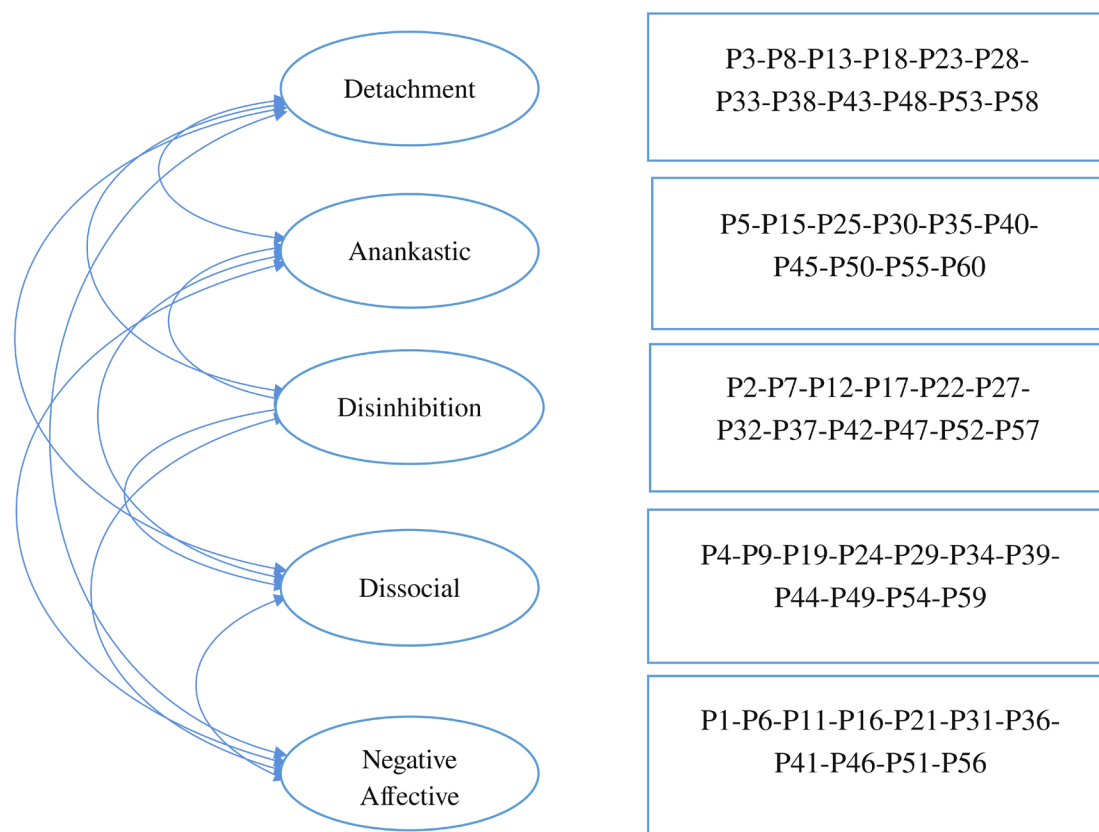
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Abbreviation: PiCD: Personality inventory for ICD-11; PID-5-BF: Personality inventory for DSM-5; BFI: Big five inventory; E: Extraversion; A: Agreeableness; C: Conscientiousness; N: Neuroticism; O: Openness; LPFS: Level of personality functioning; SFS: Self-functioning scale; IFS: Interpersonal functioning scale; SCL: Symptom checklist; CAB: Crime and analogous behavior scale; BIS: Barratt impulsiveness scale.

**P<0.01, *P<0.05.

PID-5-BF domains exhibited slightly stronger associations with personality functioning in the present sample. This pattern may be attributable to conceptual overlap between criterion A and criterion B within the DSM-5 AMPD (Anderson et al., 2018), whereas, in contrast, the ICD-11 model conceptualizes severity and trait expression within a unified framework (Bach & Hutsebaut, 2018; Bach et al, 2017).

From a clinical perspective, the ICD-11 approach may offer a more parsimonious structure by linking trait expression directly to severity of dysfunction. However, the present findings do not provide sufficient evidence to support claims of superior clinical utility for either model.

**Figure 1.** Conceptual model of PiCD's structurePRACTICE in
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Relationship		Correlation	SE	C.R	P
Negative affectivity	Detachment	0.54	0.04	6.55	<0.001
Detachment	Dissociality	0.32	0.03	3.9	<0.001
Disinhibition	Detachment	0.43	0.02	4.73	<0.001
Detachment	Anankastia	-0.29	0.01	-3.35	<0.001
Negative affectivity	Disinhibition	0.61	0.03	5.36	<0.001
Negative affectivity	Anankastia	-0.17	0.01	-2.28	0.02
Negative affectivity	Dissociality	0.35	0.03	4	<0.001
Disinhibition	Anankastia	-0.75	0.02	-3.97	<0.001
Dissociality	Anankastia	-0.26	0.01	-2.8	0.005
Disinhibition	Dissociality	0.59	0.03	4.36	<0.001

SE: Standard error; C.R: Critical ratio.

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Factor structure of the PiCD

CFA supported the five-factor structure of the PiCD, including negative affectivity, detachment, dissociality, disinhibition, and Anankastia. Model fit indices indicated acceptable fit across the total sample and subgroup analyses, consistent with previous validation studies of the ICD-11 trait model (Bach et al., 2018; Oltmanns & Widiger, 2018).

Although several items were removed due to low factor loadings, the overall structure remained stable. However, as cross-validation was not conducted in an independent sample, these findings should be interpreted as preliminary evidence of structural validity in an Iranian university-based sample.

Despite the promising findings, several limitations of the study should be acknowledged. First, the use of a university-based and help-seeking sample limits generalizability to clinically diagnosed PD populations. Second, the relatively young age of participants restricts conclusions regarding stable personality pathology across adulthood. Third, the exclusive use of self-report measures may have introduced shared method variance, particularly for sensitive constructs, such as antisocial behavior and substance use. Fourth, the use of brief measures, such as the BFI-10 may have limited the precision of normal personality assessment. Thus, future studies are encouraged to overcome these limitations by utilizing clinically diagnosed samples, applying multi-method assessment approaches, and incorporating more comprehensive personality inventories. In addition, longitudinal and cross-cultural research will be particularly valuable for clarifying the stability and generalizability of ICD-11 trait models.

Conclusion

Overall, the findings support the general applicability of the ICD-11 PD model in a non-Western context. The PiCD demonstrated acceptable reliability and construct validity, with patterns of associations broadly consistent with theoretical expectations.

Rather than indicating superiority over PID-5-BF, the results suggest that both instruments provide complementary perspectives on maladaptive personality traits, with overlapping but not identical patterns of associations across external criteria.

These results add to the accumulating body of evidence supporting dimensional models of personality pathology

and underscore the need for continued cross-cultural investigations. Nevertheless, interpretations related to clinical application should be made cautiously in light of the characteristics of the study sample.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Research Ethics Committee of [Iran University of Medical Sciences](#), Tehran, Iran (Code: IR.IUMS.REC.1399.1355). All participants provided written informed consent prior to the commencement of the study.

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Authors' contributions

All authors contributed equally to the conception and design of the study, data collection and analysis, interpretation of the results, and drafting of the manuscript. Each author approved the final version of the manuscript for submission.

Conflict of interest

The authors declared no conflicts of interest.

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