The Five-Factor Personality Inventory for ICD-11: A Facet-Level Assessment of the ICD-11 Trait Model

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Abstract

The ICD-11 includes a dimensional model of personality disorder assessing five domains of maladaptive personality. To avoid unnecessary complexity, the ICD-11 model includes assessment of personality traits only at the domain level. A measure exists to assess the domains of the ICD-11 model (the Personality Inventory for ICD-11; PiCD), yet a more rich and useful assessment of personality is provided at the facet level. We used items from the scales assessing the five-factor model of personality disorder (FFMPD) to develop the Five-Factor Personality Inventory for ICD-11 (FFiCD), a new 121-item, 20-facet, self-report measure of the ICD-11 maladaptive personality domains at the facet level. Further, the FFiCD includes 47 short scales organized beneath the facets—at the "nuance" level. Items were selected and evaluated empirically across two independent data collections, and the resulting scales were further validated in a third data collection. Correlational and factor analytic results comparing the scales of the FFiCD to the five-factor model, PiCD, and Personality Inventory for DSM-5 (PID-5) supported the validity of the theoretical structure of the FFiCD and the ICD-11 model. The FFiCD may be a useful instrument for clinicians and researchers interested in a more specific assessment of maladaptive personality according to the dimensional ICD-11 personality disorder model.

Keywords

ICD-11; personality disorders; DSM-5; five-factor model; personality assessment

A large and growing amount of empirical research has indicated that personality disorder is best classified dimensionally (Tyrer et al., 2011; Widiger & Trull, 2007). Indeed, the World Health Organization's (WHO) International Classification of Diseases, 11th edition (ICD-11), includes a dimensional model of personality disorder (WHO, 2019), that provides what is perhaps a paradigm shift in the way that personality disorder is classified (Krueger, 2016; Tyrer, 2012). The ICD-11 dimensional model consists of a general personality disorder severity rating, five maladaptive personality trait domains, and a borderline pattern specifier (Tyrer, Mulder, Kim, & Crawford, in press). The Personality Inventory for ICD-11 (PiCD; Oltmanns & Widiger, 2018) was developed to provide a self-report assessment of the five-domain dimensional trait model. Consistent with the ICD-11 Working Group for the Revision of Personality Disorders recommendations, this instrument only includes domain-

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level scales because the work group members believed that facet scales would provide an unnecessary complexity (Tyrer et al., 2011).

However, there is a considerable body of research to suggest that a description at the facet level provides the most accurate and informative assessment (Reynolds & Clark, 2001; Samuel & Widiger, 2008; Sprock, 2002). For example, Saulsman and Page (2004) conducted a meta-analysis of the FFM-personality disorder research at the domain level, indicating that the paranoid and avoidant personality disorders were both characterized by high neuroticism, whereas Samuel and Widiger's (2008) subsequent meta-analysis at the facet level demonstrated that—within neuroticism—paranoid is characterized by high angry hostility and the avoidant is characterized by anxiousness, depressiveness, and self-consciousness. Similarly, Saulsman and Page found that paranoid and narcissistic personality disorders both have low agreeableness, but paranoid is characterized by suspiciousness, specifically, whereas narcissistic is characterized more so by arrogance (Samuel & Widiger, 2008). Many of the DSM-5 Section II personality disorder syndromes involve negative affectivity (i.e., neuroticism), but clinicians (and researchers) are likely to want to distinguish between affective lability and vulnerability (evident in persons diagnosed with borderline personality disorder), anxiousness (evident in persons diagnosed with obsessive-compulsive personality disorder), shamefulness (evident in persons with vulnerable narcissism), and depressiveness (evident in dependent persons). In sum, the development of a facet-level self-report measure for the ICD-11 model will be imperative to adequately assess maladaptive personality in research and in the clinic. The purpose of the present study was to develop and validate a facet-level self-report measure for the ICD-11 maladaptive personality trait domains.

The ICD-11 maladaptive trait model includes detachment, dissociality, anankastia, negative affectivity, and disinhibition domains (Tyrer, Reed, & Crawford, 2015). Four of these domains align with those of the DSM-5 Alternative Model of Personality Disorders' (AMPD) Criterion B, which includes the maladaptive trait domains of detachment, antagonism (analogous to dissociality), negative affectivity, and disinhibition (American Psychiatric Association, 2013). The inconsistencies of the two dimensional trait models are that the ICD-11 model includes anankastia (analogous to compulsivity) and the DSM-5 model includes psychoticism. A compulsivity domain was originally included in the DSM-5 AMPD but was eventually deleted through factor analysis to reduce the model from 37 traits to just 25, albeit the specific compulsivity traits of rigid perfectionism and perseveration were retained (Krueger, Derringer, Markon, Watson, & Skodol, 2012). Traits from psychoticism are most characteristic of schizotypal personality disorder. The ICD-11 trait model's exclusion of psychoticism is consistent with the history of the ICD—in which schizotypal personality disorder has been included with the schizophrenia-related disorders.

The fundamental problems of the DSM-IV Section II categorical syndromes are well documented, including inadequate coverage, excessive co-occurrence, heterogeneity within diagnoses, and arbitrary diagnostic thresholds (Clark, 2007; Widiger & Trull, 2007). The dimensional trait models address these problems. The domains of the dimensional trait models—typically developed through factor analysis—are more homogenous and distinct than the heterogeneous and overlapping categorical syndromes. Clinicians can also provide a

more specific and individualized description of a respective patient, rather than lumping persons together within categories that may include traits the person does not have (and lack other traits the person does have). The dimensional trait models also provide considerably more coverage than the existing syndromes. Each is aligned with the FFM, which provides a reasonably comprehensive coverage of both the maladaptive and adaptive personality traits (Clark, 2007; De Raad & Mlaìċ, 2017; O'Connor, 2005).

There is reasonable consensus with regard to the broad domains of maladaptive personality (Clark, 2007; Widiger & Simonsen, 2005). As noted earlier, the DSM-5 Section III and ICD-11 both include the domains of negative affectivity, disinhibition, detachment, and dissocial/antagonism. These domains, along with compulsivity, are also evident within the historical precedents provided by the Dimensional Assessment of Personality Pathology (DAPP; Livesley, Jang, & Vernon, 1998) and the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993).

There is less consensus, however, with respect to the facets that fall within each domain. There are some traits that are common to all of the alternative maladaptive trait models (e.g., anxiousness within negative affectivity). However, each model does include relatively unique traits. Unique to the SNAP is a scale for propriety (Clark, 1993). Unique for the DSM-5 is a scale for perseveration (Crego & Widiger, 2016). Unique to the Computerized Adaptive Test-Personality Disorder (CAT-PD; Simms et al., 2011) is a scale for rudeness (Crego & Widiger, 2016). This is perhaps not particularly surprising. By one count there are 803 maladaptive trait terms within the English language (Coker, Samuel, & Widiger, 2002). Including all of them would be clearly excessive, but which would provide the optimal representation of each domain is not yet clear.

The maladaptive trait measure that includes the largest number of options is provided by the Five Factor Model of Personality Disorder (FFMPD; Widiger, Lynam, Miller, & Oltmanns, 2012). There are 99 FFMPD scales. They were constructed with the intention of fully covering the traits included within the DSM-IV personality disorder syndromes. Relevant facet selections were based on surveys of 197 personality disorder researchers' (Lynam & Widiger, 2001) and 154 clinicians' (Samuel & Widiger, 2004) descriptions of each personality disorder from the perspective of the FFM, as well as the existing FFM-personality disorder research at the facet level (Samuel & Widiger, 2008). For example, the Elemental Psychopathy Assessment (Lynam et al., 2011) includes 18 scales for the assessment of FFM traits of psychopathy; the Five Factor Narcissism Inventory (FFNI: Glover, Miller, Lynam, Crego, & Widiger, 2012) includes 15 scales for the assessment of both grandiose and vulnerable narcissism.

The goal of the present study was to use the items from the FFMPD scales to create a facet-level self-report assessment of the ICD-11 maladaptive trait domains, and then cross-validate the measure in an independent sample. Additionally, shorter "nuance-level" scales were developed below the facets, expected to provide an even more specific and homogeneous assessment of personality (c.f., Mõttus, Kandler, Bleidorn, Riemann, & McCrae, 2017; Smith, McCarthy, & Zapolski, 2009). The present investigation was preregistered before the

item selection phase and scale validation phase (osf.io/t5mhs). The present research was approved by the University of Kentucky institutional review board (protocol #17–0728-P4S).

Study 1

The aim of Study 1 was to identify scales and items that assess the maladaptive trait domains of the ICD-11. Analyses in Study 1 were largely exploratory but there were also evident hypotheses that: (1) FFMPD scales of negative affectivity would correlate positively with ICD-11 negative affectivity, (2) FFMPD detachment scales would correlate with ICD-11 detachment, (3) FFMPD antagonism scales would correlate with ICD-11 dissocial, (4) FFMPD compulsivity scales would correlate positively with ICD-11 anankastia (and negatively with ICD-11 disinhibition, and (5) FFMPD scales for disinhibition would correlate positively with ICD-11 disinhibition (and negatively with ICD-11 anankastia).

Procedure

Items were administered via Amazon.com's Mechanical Turk (MTurk) to a sample of 498 potential participants from the United States who were currently or had been in mental health treatment. Each participant was paid $2.00 for completing the measures. 121 persons were excluded from the dataset due to noncontent-based responding (described below). Missing data were imputed with the expectation maximization (EM) procedure (Enders, 2006). Median completion rate of the measures was 40 minutes.

Participants

The final sample size was $N = 377$ ($M_{age} = 36.6$ years, $SD = 12.0$ years, 66% female). Thirty-six percent were currently in mental health treatment, 12% in the past one month, 25% in the past one year, 14% in the past five years, 6% in the past ten years, and 6% outside the past ten years. Fifty-two percent were currently taking psychiatric medications, and 83% had taken psychotropic medications in the past. Participants reported receiving mental health treatment for a variety of conditions: Depression (82%), anxiety (68%), personality disorder (8%), substance abuse (7%), alcohol abuse (7%), psychosis (3%), and 11% other, which participants provided in an additional text box, including: alcohol use disorder, anorexia nervosa, attention-deficit hyperactivity disorder (ADHD), autism, anorexia nervosa, bipolar disorder, bulimia, childhood problems, obsessive-compulsive disorder (OCD), panic disorder, physical health conditions, post-traumatic stress disorder (PTSD), schizophrenia, sexual abuse, suicide attempt, suicidal ideation, and traumatic brain injury. Participants reported seeing psychiatrists (58%), psychologists (50%), social workers (18%), family therapists (18%), and 9% other, including: behavioral health providers, clinical nurses, counselors, endocrinologists, neuropsychologists, oncologists, primary care physicians, and group therapy. Marital status consisted of 37% married, 39% single, 9% divorced, 13% cohabiting, and 1% widowed. Hispanic or Latino ethnicity was endorsed by 8% of the sample. Racial backgrounds endorsed were 83% white, 11% black or African American, 7% Asian, 5% American Indian or Alaska Native, and 1% Native Hawaiian or Pacific Islander. Multiple racial backgrounds were endorsed by 24 participants.

Measures

Five-Factor Model Personality Disorder Scales (Widiger et al., 2012).—Several FFMPD scales corresponding with the five ICD-11 maladaptive trait domains were administered. Scales were selected based on correspondence with prior descriptions of the proposed trait domains (Tyrer, Reed, & Crawford, 2015). Low conscientiousness was assessed by 67 items from seven FFMPD scales: FFHI Disorderly, FFBI Rash, EPA Rashness, FFDI Ineptitude, FFDI Negligence, EPA Disobliged, and EPA Impersistence. High conscientiousness was assessed by 60 items from six FFMPD scales: FFOCI Perfectionism, FFOCI Fastidiousness, FFOCI Punctiliousness, FFOCI Workaholism, FFOCI Ruminative Deliberation, and FFOCI Risk Aversiveness. Antagonism was assessed by 106 items from 11 FFMPD scales: FFBI Oppositional, FFBI Distrust, EPA Distrust, EPA Callousness, EPA Manipulation, EPA Arrogance, FFHI Melodramatic Emotionality, FFSI Interpersonal Suspiciousness, FFNI Lack of Empathy, FFNI Exploitativeness, and FFNI Arrogance. Introversion was assessed by 70 items from eight FFMPD scales: FFSI Social Anhedonia, FFSI Social Isolation & Withdrawal, FFSI Physical Anhedonia, FFOCI Detached Coldness, EPA Coldness, FFAvA Joylessness, FFAvA Social Dread, and FFAvA Shrinking. Neuroticism was assessed by 94 items from 10 FMPD scales: FFSI Social Anxiousness, FFAvA Evaluation Apprehension, FFAvA Overcome, FFDI Separation Insecurity, FFBI Fragility, FFBI Helplessness, FFBI Dysregulated Anger, FFBI Affective Dysregulation, FFNI Need for Admiration, and FFHI Rapidly Shifting Emotions. The FFMPD scales are rated on 5-point Likert scales from 1 (*strongly disagree*) to 5 (*strongly agree*).

PiCD (Oltmanns & Widiger, 2018).—The PiCD is a 60-item self-report measure of the dimensional trait model for the ICD-11. Five scales containing twelve items each are rated from 1 (*strongly disagree*) to 5 (*strongly agree*) to assess five maladaptive trait domains: Detachment (coefficient α = .87; MIC r = .35) Dissociality (coefficient α = .87; MIC r = .35), Anankastia (coefficient α = .85; MIC r = .32), Negative Affectivity (coefficient α = .89; MIC r = .41), and Disinhibition (coefficient α = .89; MIC r = .41).

Five-Factor Model.—Three measures of the FFM were administered, including the International Personality Item Pool-NEO-120 (Maples, et al., 2014), the Five Factor Form (FFF; Rojas & Widiger, 2014), and the Five Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006). Each item on each measure was rated on a 1 to 5 point scale, albeit the anchors for the five points varied across the three measures (e.g., IPIP was rated from 1 [*strongly disagree*] to 5 [*strongly agree*] whereas the FFF from 1 [*Maladaptive Low*], 2 [*Low*], 3 [*Neutral*], 4 [*High*], and 5 [*Maladaptive High*]). Each of these measures obtained internal consistency. For example, for the FFF, internal consistency ranged from α = .63 (Agreeableness; MIC r = .23) to .79 (Neuroticism; MIC r = .39), with a median α of .76 and MIC r of .34. The results from the three FFM measures were standardized and summed to create five composite FFM domain scores.

Noncontent-based responding scale.—Five items were included throughout the questionnaire battery to gauge attention. Example items include, "I have used a computer in the past two years," and "I am President of the United States." Items were rated from 1 to 5

and scored such that higher scores indicated non-content based responding. Participants with a score of 12+ were eliminated from the dataset.

Results

It was evident from the scale-level correlations that multiple FFMPD scales from each domain had similar patterns of correlations with the PiCD and FFM trait domains. This was in large part because several of the FFMPD scales provide assessments of the same specific facet (e.g., Evaluation Apprehension and Social Anxiousness both assess variants of anxiousness). Items were then selected from highly correlated FFMPD scales (such as FFMPD Evaluation Apprehension and Social Anxiousness) and combined to form broader scales—in this case, a broader "Anxiousness" scale within negative affectivity that includes components of both evaluation apprehension and social anxiousness.

A balanced number of items were selected from each scale (e.g., several items per FFMPD scale), depending on the number of FFMPD scales that were being used to select items for a specific facet. Most often, convergent correlations were above .50 (e.g., strong effect size; Cohen, 1992) and discriminant correlations were moderate or small. Some items from FFMPD scales were selected for new facet scales in different domains—these two instances are noted by footnotes in the following five sections.

Negative affectivity.—Items were selected to form five broader facets of negative affectivity: anxiousness, mistrustfulness, anger, emotional lability, and vulnerability. Items for this domain were selected based on high convergent correlations with PiCD NA and FFM N and low discriminant correlations with the other domains of the PiCD and the FFM. Items for anxiousness were selected from FFMPD Evaluation Apprehension, Social Anxiousness, and Separation Insecurity. Items for mistrustfulness were selected from FFMPD Distrust (the EPA version), Distrust (the FFBI version), and Interpersonal Suspiciousness[1]. Items for anger were selected from FFMPD Dysregulated Anger. Items for emotional lability were selected from FFMPD Affective Dysregulation and Rapidly Shifting Emotions. Items for vulnerability were selected from FFMPD Fragility, Overcome, Helplessness, and Need for Admiration.

Detachment.—Items were selected to form four broader facets of detachment: aloofness, social isolation, anhedonia, and unassertiveness. Items for this domain were selected based on high convergent correlations with PiCD DT and FFM introversion and low discriminant correlations with the other domains. Items for aloofness were selected from FFMPD Detached Coldness, Coldness, and Joylessness; social withdrawal from FFMPD Social Isolation and Withdrawal and Social Dread; anhedonia from FFMPD Social Anhedonia and Physical Anhedonia; unassertiveness from FFMPD Shrinking.

Anankastia.—Items were selected to form two broader facets of anankastia: perfectionism and risk aversiveness. Items for this domain were selected based on high convergent correlations with PiCD AK and FFM C and low discriminant correlations with the other

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[1]The Distrust FFMPD scales were originally for antagonism, but in this case correlated more strongly with negative affectivity.

domains of the PiCD and the FFM. Items for perfectionism were selected from FFMPD Punctiliousness, Fastidiousness, and Perfectionism. Items for risk aversiveness were selected from FFMPD Risk Aversiveness[2].

Dissociality.—Items were selected to form four broader facets of dissociality: aggressiveness, lack of empathy, arrogance, and manipulativeness. Items for this domain were selected based on high convergent correlations with PiCD DL and FFM A (negatively) and low discriminant correlations with the other domains of the PiCD and the FFM. Items for aggressiveness were selected from FFMPD Oppositional. Items for lack of empathy were selected from FFMPD Lack of Empathy and Callousness. Items for arrogance were selected from FFMPD Arrogance (the EPA version) and Arrogance (the FFNI version). Items for manipulativeness were selected from FFMPD Manipulation and Exploitativeness.

Disinhibition.—Items were selected to form five broader facets of disinhibition: distractibility, rashness, disobliged, ineptitude, and irresponsibility. Items for this domain were selected based on high convergent correlations with PiCD DN and FFM C (negatively) and low discriminant correlations with the other domains of the PiCD and the FFM. Items for distractibility were selected from FFMPD Negligence and Impersistence. Items for recklessness were selected from FFMPD Rashness (the EPA version) and Rash (the FFBI version). Items for disobliged were selected from FFMPD Disobliged. Items for ineptitude were selected from FFMPD Ineptitude. Items for irresponsibility were selected from FFMPD Negligence and Impersistence.

Study 2

The aim of Study 2 was to broaden the potential assessment of the facets being developed for the current measure, to organize a nuance-level structure underneath facets, and to select final items for the new instrument. Additional FFMPD scales were used to expand assessment of anger and mistrust (in the negative affectivity domain), unassertiveness (in the detachment domain), manipulativeness, self-centeredness, arrogance, and oppositionality (from the dissociality domain), impulsiveness (from the disinhibition domain), and risk aversion (from the anankastia domain). Further, FFMPD scales were added to select items to create a "depressiveness" facet within negative affectivity, an "aggression" facet within dissociality, and a "thrill-seeking" facet within disinhibition. The assessment of anankastia was significantly expanded by adding multiple FFOCI scales to create "rigidity," "constricted," "dogmatism," and "doggedness" components. The items from an additional total of 23 FFMPD scales were added to Study 2, along with the items chosen in Study 1. Item selection in Study 2 followed the same method as in Study 1. However, in Study 2, items were also organized into nuance scales. Nuances are 2/3-item scales underneath each facet. Each facet included 2–4 nuance scales (3 facets do not have nuances: Distrust, Unassertiveness, and Thrill-Seeking).

Study 2 MTurk data collection was affected by the participation of "farmers." Participants were required to have been within the United States; Farmers are participants from countries

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[2]The Risk Aversiveness FFMPD scale was originally for (low) extraversion, but in this case correlated more strongly with anankastia.

that use fake geolocations within the United States to complete studies that are supposed to only be completed by participants within the United States. This is problematic because farmer English proficiency appears to be low, which hurts the quality of the data (i.e., lower internal consistency estimates for personality scales; see Dennis, Goodson, and Pearson [2018] for a review, empirical study, and solution for this problem—which we implemented in Study 3 and describe at that point). Farmers did not affect the quality of the final data that we used, but they did affect the sample size because we eliminated more cases due to elevations on the noncontent-based responding scale (which was perhaps, in this case, caused by low English proficiency). Thus, the sample size for Study 2 is smaller.

Procedure

Items were administered via MTurk to a sample of 284 potential participants from the United States who were currently or had been in mental health treatment. Each participant was paid $2.00 for completing the measures. Median completion rate of the measures was 32 minutes. 136 persons were excluded from the dataset due to noncontent-based responding (described below).

Participants

The final sample size was $N = 148$ ($M_{age} = 35.6$ years, $SD = 12.5$ years, 62% female). Racial and ethnic backgrounds, other demographics, and clinical characteristics were similar to Study 1 and are included in the supplemental materials.

Measures

Five-Factor Model Personality Disorder Items (Widiger et al., 2012)—The selected items described in the results of Study 1 were administered to the Study 2 sample. An additional 23 FFMPD scales were administered to select additional items: From Negative Affectivity: FFNI Reactive Anger, EPA Anger, FFAvA Despair, FFBI Despondency, FFDI Pessimism, FFAvA Mortified, FFDI Shamefulness, FFNI Shame, and FFNI Cynicism/Distrust; from detachment: FFDI Unassertiveness; from compulsivity: FFOCI Doggedness, FFOCI Inflexibility, FFOCI Dogmatism, FFAvA Rigidity, and FFAvA Risk Averse; from antagonism: EPA Oppositional, EPA Self-Centeredness, FFBI Manipulation, FFNI Manipulativeness, FFNI Entitlement, and FFHI Vanity; and from disinhibition: FFHI Impressionistic Thinking and EPA Thrill-Seeking. The FFMPD scales are rated on 5-point Likert scales from 1 (*strongly disagree*) to 5 (*strongly agree*).

PiCD (Oltmanns & Widiger, 2018).—The PiCD was again administered in Study 2. Internal consistency estimates were as follows: Detachment (coefficient $\alpha = .88$; MIC $r = .39$), Dissociality (coefficient $\alpha = .92$; MIC $r = .49$), Anankastia (coefficient $\alpha = .83$; MIC $r = .30$), Negative Affectivity (coefficient $\alpha = .90$; MIC $r = .43$), and Disinhibition (coefficient $\alpha = .91$; MIC $r = .46$).

Five-Factor Model measures.—The same three measures of the FFM used in Study 1 were again administered in Study 2. Each of these measures again obtained similar levels of internal consistency. The results from the three FFM measures were again summed to create five composite FFM domain scores.

Noncontent-Based Responding Scale

The same noncontent-based responding items from Study 1 were administered again. Participants with a score of 12+ were again eliminated from the dataset ($n = 136$).

Results

Items were selected for facets according to the same method from Study 1 (i.e., via convergent and discriminant correlations with corresponding and non-corresponding PiCD and FFM domain scores). There were new facets developed: depressiveness within negative affectivity, workaholism and inflexibility within anankastia, and self-centeredness within dissociality. Some facets were restructured based on correlations between items within the facets, in an attempt to create more homogeneous, but correlated, nuances beneath facets: Within anankastia, risk aversiveness was moved to the nuance level beneath the inflexibility facet; within detachment, aloofness and joylessness were moved to the nuance level beneath the social and emotional detachment facets, respectively, and anhedonia was divided into social and physical anhedonia nuances beneath the emotional detachment facet. Within the dissociality domain, arrogance was moved to the nuance level beneath the self-centeredness facet and manipulativeness was moved to the nuance level within the lack of empathy facet. Within the disinhibition domain, disobliged, ineptitude, and distractibility were moved to the nuance level beneath the irresponsibility facet. A final overview of the number of items from each FFMPD scale composing each nuance, facet, and domain is presented in Tables 1 and 2.

Nuances were created by selecting items from specific FFMPD scales that converged more highly with each other than they did with items from other specific FFMPD scales. When constructing the nuances, attention was given to correlations among items as well as the language of the items—did the items within the same nuance have face validity? It should be noted that several FFMPD scales were so highly correlated with each other that items for certain nuances were selected from different FFMPD scales (this can be observed in Tables 1 and 2). Further, in a few rare instances, items from scales originally assessing one ICD-11 domain were selected to measure nuances of another ICD-11 domain. This is to be expected, as personality facets and domains are often intercorrelated (Marsh et al., 2010). Also, three facets did not have nuances (mistrustfulness, unassertiveness, and thrill-seeking).

Study 3

The aim of Study 3 was to validate the FFiCD with the PiCD, PID-5, and FFM.

Procedure

In Study 3, the online survey was designed in TurkPrime (Litman, Robinson, & Abberbock, 2017). Care was taken to safeguard against farmers (i.e., potential participants from outside of the US). Dennis et al. (2017) identified several suspicious geolocations that were being often used by farmers. These geolocations were blocked. Further, TurkPrime Pro Features were utilized: Multiple responses from the same geolocation were blocked and IP addresses were blocked from being represented more than one time.

Items were administered via TurkPrime to a sample of 343 potential participants from the United States who were currently or had been in mental health treatment. Each participant was paid $4.00 for completing the measures. Median completion rate of the measures was 41 minutes. This time, only 42 persons were excluded from the dataset due to noncontent-based responding (described below).

Participants

The final sample size was $N = 301$ ($M_{age} = 36.5$ years, $SD = 10.7$ years, 61% female). Racial and ethnic backgrounds, other demographics, and clinical characteristics were similar to Studies 1 and 2 and are included in the supplemental materials.

Measures

Five-Factor Personality Inventory for ICD-11 (FFiCD).—The FFiCD is a 121-item measure of the five maladaptive trait domains of the ICD-11. It also includes 20 facet scales and 47 more specific nuances organized within the facet scales. Descriptive statistics are provided in Table S1 of the supplemental materials. The full measure is available for use and is provided in the supplemental materials.

PiCD (Oltmanns & Widiger, 2018).—The PiCD was again administered in Study 3. Internal consistency estimates were as follows: Detachment (coefficient $\alpha = .86$; MIC $r = .34$), Dissociality (coefficient $\alpha = .90$; MIC $r = .43$), Anankastia (coefficient $\alpha = .84$; MIC $r = .31$), Negative Affectivity (coefficient $\alpha = .91$; MIC $r = .44$), and Disinhibition (coefficient $\alpha = .90$; MIC $r = .44$).

PID-5 (Krueger et al., 2012).—The PID-5 is a 220-item self-report questionnaire that was developed to assess the five proposed domains of maladaptive personality traits of the alternative model of personality disorder included in an appendix to the DSM-5 (detachment, antagonism, disinhibition, negative affectivity, and psychoticism). The items were rated on a scale from 1 (*very false or often false*) to 4 (*very true or often true*). Internal consistency of the facets ranged from $\alpha = .77$ (MIC = .32; Suspiciousness) to $\alpha = .96$ (MIC = .65; Eccentricity), with a median of $\alpha = .89$ (MIC = .51).

FFM measures.—The same three measures of the FFM used in Studies 1 and 2 were again administered in Study 3. Each of these measures again obtained similar levels of internal consistency. The results from the three FFM measures were again summed to create five composite FFM domain scores.

Noncontent-Based Responding Scale

The same noncontent-based responding items from Studies 1 and 2 were administered again. Participants with a score of 12+ were again eliminated from the dataset ($n = 42$).

Results

Descriptive statistics of the FFiCD scales (domain, facet, and nuance-level) are provided in Table S1. Intercorrelations of the FFiCD, PiCD, PID-5, and FFM domain-level scales are provided in supplemental Table S2. The highest convergence was obtained, as expected, for

the FFiCD with the PiCD domain scales. There was also substantial convergence of the FFiCD with the respective PID-5 domain scales, albeit at times not as high as with the PiCD, perhaps reflecting at least some (minor) differences in how the domains were defined by the respective work groups (APA, 2013; Krueger et al., 2012; Tyrer et al., 2015; WHO, 2019).

Exploratory factor analyses were run in R statistical software (R Core Team, 2013) with the psych package (Revelle, 2017). Parallel analysis recommended a 4-factor solution, which is provided in Table 3. There were clear DL and DT factors. The DN indicators cross-loaded on NA and AK factors. BIC favored an 8-factor solution, but neither 8-factor or 7-factor solutions converged. A six-factor solution is presented in supplemental Table S3. In that solution, the factor structure was similar, but with a more prominent bipolar anankastia/ disinhibition factor.

To examine the FFiCD facet-level structure, the same analysis was then conducted, substituting the FFiCD facets for the FFiCD domains. Parallel analysis recommended four factors. This solution is presented in Table 4. There were clear NA, DL, and DT factors, along with a bipolar AK/DN factor. All FFiCD facets loaded on their hypothesized domain factors (as shown in Tables 1 and 2), with the exceptions of Unassertiveness (which loaded on NA), Rashness (which cross-loaded on NA and DL), and Thrill-Seeking (which loaded on DL). The MAP test and BIC indicated a seven-factor solution, which is displayed in Table S4. In the 7-factor solution, there were five factors that clearly represented the five ICD-11 maladaptive trait domains, plus two extra factors—one that was not clearly interpretable and another that captured residual anger/aggression. Anankastia and disinhibition facets from their bipolar factor in the 4-factor solution separated in the 7-factor solution, but the factors correlated $r = -.31$. Thrill-Seeking loaded negatively on the anankastia factor in the 7-factor solution, which would be consistent with expectations. Rashness switched from the negative affectivity factor to the disinhibition factor, which would also be consistent with expectations. Unassertiveness cross-loaded on the NA and DN factors, which was again inconsistent with expectations.

Exploratory bifactor analysis was used to examine the structure of the maladaptive personality scales with the inclusion of a general factor of personality disorder (g-PD; Oltmanns, Smith, Oltmanns, & Widiger, 2018; Pettersson, Turkheimer, Horn, & Menatti, 2012). A six-factor EBFA solution fit the data best (fit indices for other solutions displayed in supplemental Table S5). A model extracting seven factors did not converge. The 6-factor solution is presented in Table S6. A 5-factor model was consistent with expectations and appeared to provide a similar but simpler solution and is presented in Table 4. All scales loaded significantly on the g-PD (FFM C, A negatively), with the exceptions of FFM E and PiCD AK. The remaining four factors were clear NA, DL, and DT factors, and a bipolar AK/DN factor. Only Unassertiveness and Thrill-Seeking did not load on their expected domains (Unassertiveness loaded negatively on DL and Thrill-Seeking did not load significantly on any factor besides the g-PD).

Nuance-level correlations with the PiCD, FFM, and PID-5 are displayed in supplemental Table S7. The overwhelming majority of the 47 nuances correlated highest with their corresponding domains (e.g., FFiCD DL nuances with PiCD DL, PID-5 AT, and FFM A-).

The nuances showed strong convergent validity with the FFM, with the exception of the anankastia nuances, which correlated moderately with conscientiousness—however, the FFiCD AK nuances correlated strongly with PiCD AK. There was some overlap between the dissociality and disinhibition nuances and domains, as would be expected based on cross-loadings in the domain and facet-level factor analyses. The FFiCD detachment nuances correlated strongly with PiCD and PID-5 detachment, but moderately with FFM (low) extraversion.

General Discussion

The upcoming ICD-11 includes a dimensional model of personality disorder with five maladaptive trait domains. For simplicity, this model does not include facet-level personality traits, but is instead confined to the domain-level (Tyrer et al., 2011). However, description at the facet level is necessary for a more specific and individualized description of personality (Reynolds & Clark, 2001; Samuel & Widiger, 2008; Sprock, 2002). The present study developed the FFiCD, a facet-level assessment of the ICD-11 dimensional trait model, that may be used optionally by clinicians and researchers interested in a more precise description of the ICD-11 trait model.

Facet scales may indeed provide a complexity that is not always desired and may at times be problematic (Tyrer et al., 2011). However, a facet-level assessment can provide useful information to clinicians about the precise nature of a client's personality disorder. A patient high in the domain of negative affectivity may be elevated for a variety of reasons. For example, a clinician would perhaps focus treatment on developing anger management strategies for a client who scores highly on the anger facet within negative affectivity—whereas a clinician would not concentrate on anger management for a patient who presents only with high vulnerability and anxiousness (other facets within negative affectivity). Assessment of the ICD-11 personality disorder maladaptive trait domains is currently at the domain level (Oltmanns & Widiger, 2018), consistent with the absence of any specific facet traits within the trait model (Tyrer et al., 2011, 2015). However, the FFiCD provides an option of assessment at the facet level that is available for use, albeit not required.

The FFiCD displayed an oblique four-factor structure at both the domain and facet levels that is theoretically in line with the ICD-11 maladaptive trait model. Distinct negative affectivity, dissociality, and detachment factors were found. Disinhibition and anankastia formed a bipolar factor, as expected, although traits of disinhibition also displayed overlap with negative affectivity in the EFA (Table 4) and dissociality in the EBFA (Table 5). The results indicated that the FFiCD facets can be understood according to the bipolar theoretical organization of the ICD-11 structure (Mulder et al., 2016).

The EBFA provided the clearest factor structure in terms of our a priori hypotheses of a four-factor structure including a bipolar anankastia/disinhibition factor (osf.io/t5mhs). Pettersson et al. (2012) have argued that a general factor of evaluation bias should first be extracted before obtaining maladaptive personality trait domains. We followed this procedure, albeit for different reasons. We interpret the general factor of personality disorder (the general factor in the Table 5 EBFA) as an individual differences continuum of

impairment secondarily associated with the traits—with higher impairment loading positively (Oltmanns et al., 2018; Widiger & Oltmanns, 2017). The weakest loadings on the general factor were obtained by the FFM scales which concern a lesser degree of impairment relative to the PiCD, PID-5, and/or FFiCD scales. The common maladaptivity that is shared by indicators of psychopathology can complicate a factor analysis of psychopathology scales because the scales can be strongly associated for non-substantive reasons. Maladaptive trait scales will routinely correlate positively with each other and correlate negatively with adaptive trait scales, irrespective of the content of the scales (Widiger & Crego, 2019). As demonstrated by Pettersson et al., maladaptive traits that are conceptually opposite to one another can load in the same direction on the general factor (e.g., laxness and perfectionism both result in a comparable impairment, but largely for opposite reasons). In the case of the FFiCD scales, this would hinder the ability to find the anankastia and disinhibition scales loading in an opposite direction on the same factor, as well as perhaps contributing to some degree of the cross-loading of other FFiCD scales. The EBFA results in the present study would indicate that after extracting the maladaptive impairment that is common to all of the scales, the remaining variance of the FFiCD scales is best characterized by a clear four-factor structure of negative affectivity, dissociality, detachment, and a bipolar anankastia/disinhibition factor.

Existing FFMPD scales contributed to the development of 20 unique FFiCD facet scales: Seven within negative affectivity, three within dissociality, detachment, and anankastia, and four within disinhibition. For 18 of the 20 facets, the theoretical structure held in exploratory factor analyses: The FFiCD facets of anxiousness, vulnerability, emotional lability, anger, depressiveness, shame, and mistrustfulness loaded with corresponding FFM neuroticism, ICD-11 negative affectivity, and DSM-5 negative affectivity. The FFiCD facets of self-centeredness, lack of empathy, and aggression loaded with corresponding FFM antagonism, ICD-11 dissociality, and DSM-5 antagonism. The FFiCD facets of social detachment and emotional detachment loaded with corresponding FFM (low) extraversion, ICD-11 detachment, and DSM-5 detachment. The FFiCD facets of perfectionism, inflexibility, and workaholism loaded with FFM conscientiousness, ICD-11 anankastia, and oppositely to ICD-11 disinhibition, DSM-5 disinhibition, and the FFiCD disinhibition facets. The facets of rashness, irresponsibility, and disorderliness loaded with corresponding FFM (low) conscientiousness, ICD-11 disinhibition, and DSM-5 disinhibition, and oppositely to ICD-11 anankastia and the FFiCD anankastia facets.

Of the 20 facets, 18 loaded consistently with theoretical expectations in the analyses. Two facets did not load as expected: Unassertiveness (theoretically from detachment) loaded with negative affectivity in the EFA and then opposite to dissociality in the EBFA; however, this also occurred in the development of the scale (Gore, Presnall, Miller, Lynam, & Widiger, 2012). Thrill-Seeking did not load with disinhibition facets in the EBFA. Both demonstrated uniqueness from the other scales (i.e., displayed relatively lower h^2 values). The other two detachment facets (social detachment and emotional detachment) performed as expected in the analyses, strongly defining clear detachment factors—but FFiCD Unassertiveness may assess a form of neurotic submissiveness more than a form of detachment. The inconsistent loadings of these scales may reflect in part that the ICD-11 trait model includes maladaptive assessment of only five poles of the FFM (instead of all ten). Although these scales have

been shown to fit into factor space of detachment and disinhibition, unassertiveness and thrill-seeking may be best categorized at poles of domains that are not represented in the present study (perhaps maladaptive high agreeableness for Unassertiveness and maladaptive high extraversion for Thrill-Seeking). The scales may also assess personality constructs that are in "interstitial space," that is, space that is in between higher-order factors in personality trait organization (Widiger & Crego, 2019), which is observed through correlations across domains (Thrill-Seeking in particular, because of its numerous cross-loadings). A combination of these considerations would likely explain their inconsistent loading patterns in the present study.

In addition to providing more specific description of personality disorder at the facet level, the present study also developed 47 "nuance" level scales below the facets. These nuances showed convergent and discriminant validity with the FFM, ICD-11, and DSM-5 trait models, with few exceptions. These findings support the idea that personality can be described at an even more specific level below facets (Mõttus et al., 2017; Smith et al., 2009).

The development of the FFiCD—a new measure for a new dimensional model—adds to a growing number of dimensional maladaptive personality measures (Clark, 1993; Krueger et al., 2012; Livesley et al., 1998; Simms et al., 2011; Widiger et al., 2012). However, the FFiCD is a relatively unique measure in that it provides a facet-level assessment of the ICD-11 maladaptive trait model. Bach et al. (2017) have developed a facet level assessment of the ICD-11 trait model using scales from the PID-5 assessment of the DSM-5 trait model. Both measures are potentially limited in that they relied on existing scales and/or items. However, the PID-5 assessment of anankastia might have been more limited in its ability to assess for anankastia, as the PID-5 has only two potentially relevant scales (i.e., Perseveration and Rigid Perfectionism), whereas quite a few more were available from the set of FFMPD scales (Widiger et al., 2012). Nevertheless, a focus of future research would be a direction comparison of the PID-5, PiCD, and FFiCD assessment of the ICD-11 trait model. It is always advantageous to have multiple alternative measures of the same construct because it is unlikely that any one particular measure will be infallible in its assessment.

Limitations

The present study was limited by sole reliance on self-report instruments. Future studies would add to the validation of the FFiCD by implementing multiple assessment methods. However, this was an initial validation and to date there are no other methods of FFiCD assessment. The present study was also limited by its reliance on a US sample with underrepresentation of non-white racial and ethnic groups. However, the study also included strengths of large samples (especially for studies 1 and 3) and its recruitment of participants who had histories of mental health treatment.

Future Directions

The FFiCD provides fruitful avenues for future research. As noted earlier, one line of investigation would be direct comparisons of the FFiCD, PiCD, and PID-5 assessments of the ICD-11 trait model. Criterion validity studies will also help identify which domains and

facets are particularly salient for different outcomes. This may also be helpful for identifying those traits that will be the most important to assess when time is limited. Additionally, the development of an informant-version of the FFiCD will be imperative, as agreement between self– and informant–ratings for personality is only moderate (Oltmanns & Oltmanns, in press). Further, informant-reports at times differentially predict life outcomes, indicating that informant-reports could impact clinical treatment planning. Finally, it may be of importance to develop validity scales to identify different response styles, especially if the FFiCD is implemented into clinical assessment settings (Dhillon, Bagby, Kushner, & Burchett, 2017).

Conclusions

Although the ICD-11 personality trait domains do not include facets, prior findings of the richness that is capable at the facet-level of personality assessment indicates that researchers and clinicians may wish to have available a facet-level assessment. The present study developed a 121-item, 5-domain, 20-facet, 47-nuance self-report assessment of the ICD-11 personality disorder maladaptive trait domains. Initial analyses supported a four-factor structure and indicated that a valid, yet more specific and nuanced, assessment of the ICD-11 personality disorder maladaptive trait domains may be completed with the FFiCD.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Public Significance Statement:

A dimensional personality disorder model is included in ICD-11, which is a dramatic change in the classification of personality disorder. The model is at the maladaptive personality domain level—however, a more useful assessment of personality is at the facet-level. The present investigation provides initial support for a new, optional, facet-level self-report measure of the ICD-11 maladaptive trait domains.

Table 1.

FFiCD Negative Affectivity and Detachment.

FFMPD scale	FFiCD Nuance	# Items	FFiCD facet	# Items
			Negative Affectivity	40
FAVA Evaluation Apprehension	Evaluation Apprehension	2	Anxiousness	6
FFDI Separation Insecurity	Separation Insecurity	2	Anxiousness	
FFSI Social Anxiousness	Social Anxiousness	2	Anxiousness	
FFBI Fragility/FAVA Overcome/FFBI Helplessness	Fragility	3	Vulnerability	5
FFNI Need for Admiration	Need for Admiration	2	Vulnerability	
FFBI Affective Dysregulation	Affective Dysregulation	3	Emotional Lability	6
FFHI Rapidly Shifting Emotions	Rapidly Shifting Emotions	3	Emotional Lability	
FFBI Dysregulated Anger	Dysregulated Anger	2	Anger	6
FFNI Reactive Anger	Reactive Anger	2	Anger	
EPA Anger	Annoyed	2	Anger	
FAVA Despair	Interpersonal Inadequacy	2	Depressiveness	8
FFBI Despondency	Suicidality	2	Depressiveness	
FFDI Pessimism	Pessimism	2	Depressiveness	
FFAvA Despair /FFBI Despondency	Worthlessness	2	Depressiveness	
FAVA Mortified/FFDI Shamefulness	Self-Consciousness	3	Shame	5
FFNI Shame	Humiliation	3	Shame	
FFSI Interpersonal Suspiciousness/EPA Distrust			Mistrustfulness	3
			Detachment	13
FFSI Social Isolation	Social Isolation	2	Social Detachment	4
FFOCI Detached Coldness	Coldness	2	Social Detachment	
FAVA Joylessness	Joylessness	2	Emotional Detachment	6
FFSI Social Anhedonia	Social Anhedonia	2	Emotional Detachment	
FFSI Physical Anhedonia	Physical Anhedonia	2	Emotional Detachment	
FFDI Unassertiveness			Unassertiveness	3

Table 2.

FFiCD Anankastia, Dissocial, and Disinhibition.

FFMPD scale	FFiCD Nuance	# Items	FFiCD facet	# Items
			Anankastic	22
FFOCI Perfectionism/FFOCI Fastidiousness	Fastidiousness	3	Perfectionism	6
FFOCI Punctiliousness	Punctiliousness	3	Perfectionism	
FFOCI Workaholism	Work Preoccupation	3	Workaholism	6
FFOCI Doggedness	Doggedness	3	Workaholism	
FFOCI Inflexibility/FAVA Rigidity	Rigidity	2	Inflexibility	10
FFOCI Ruminative Deliberation	Ruminative Deliberation	3	Inflexibility	
FFOCI Risk Aversiveness	Risk Aversiveness	2	Inflexibility	
FFOCI Dogmatism	Dogmatism	3	Inflexibility	
			Dissocial	22
EPA Self-Centeredness	Selfishness	2	Self-Centeredness	8
FFNI Entitlement	Entitlement	2	Self-Centeredness	
FFHI Vanity	Vanity	2	Self-Centeredness	
EPA Arrogance/FFNI Arrogance	Arrogance	2	Self-Centeredness	
FFNI Lack of Empathy	Callousness	3	Lack of Empathy	8
FFNI Exploitativeness	Exploitativeness	2	Lack of Empathy	
FFBI, EPA, and FFNI Manipulativeness	Manipulativeness	3	Lack of Empathy	
FFBI Oppositionality	Physical Aggression	2	Aggression	6
FFBI Oppositionality	Verbal Aggression	2	Aggression	
EPA Oppositional	Passive Aggression	2	Aggression	
			Disinhibition	24
FFBI Rashness/EPA Rashness	Rash Behaviors	3	Rashness	6
FFHI Impressionistic Thinking	Rash Thinking	3	Rashness	
EPA Impersistence	Impersistence	3	Irresponsibility	10
FFDI Negligence	Distractibility	3	Irresponsibility	
FFDI Ineptitude	Ineptitude	2	Irresponsibility	
EPA Disobliged	Disobliged	2	Irresponsibility	
FFHI Disorderly	Disorganization	3	Disorderliness	5
FFHI Disorderly	Disorganized Speech	2	Disorderliness	
EPA Thrill-Seeking			Thrill Seeking	3

Table 3

Domain-Level 4-Factor EFA of the FFiCD, PiCD, PID-5, and FFM.

Scale	NA / DN	DL	DT	AK + / DN −	h2
PID5 N	**.92**	−.02	−.06	.06	.78
PiCD N	**.86**	.02	.11	.16	.86
FFiCD N	**.86**	−.02	.19	.09	.91
FFM N	**.85**	−.19	.11	−.07	.76
FFiCD DN	**.63**	**.34**	.01	**−.32**	.85
PID5 DN	**.52**	**.43**	−.01	**−.38**	.85
PiCD DL	−.03	**.96**	.01	.07	.87
FFiCD DL	−.01	**.95**	.06	−.01	.91
PiD5 AT	.05	**.86**	−.06	.04	.75
FFM A	.24	**−.62**	**−.30**	.22	.49
PiCD DN	**.43**	**.48**	−.04	**−.40**	.80
PiCD DT	.04	.21	**.80**	.13	.78
FFM E	−.01	**.41**	**−.80**	.17	.72
FFiCD DT	.20	.10	**.75**	.15	.82
PID5 DT	.13	.19	**.71**	.02	.70
FFiCD AK	.23	.13	.13	**.82**	.74
PiCD AK	.11	.01	.11	**.82**	.70
FFM C	−.24	−.08	−.20	**.76**	.79

Note. FFiCD = Five-Factor Personality Inventory for ICD-11, PiCD = Personality Inventory for ICD-11, PID-5 = Personality Inventory for DSM-5, FFM = five-factor model, N = neuroticism/negative affectivity, DL = dissociality, AT = antagonism, DN = disinhibition, A = a greeableness, C = conscientiousness, AK = anankastia, DT = detachment, E = extraversion.

Table 4.

Four-factor Exploratory Factor Analysis of the FFiCD facets with the FFM, PID-5, and PiCD Domains.

Scale	NA	DL / DN	AK + / DN −	DT	*h2*
FFiCD Vulnerability	**.90**	−.20	.04	.08	.82
PID-5 NA	**.89**	.04	.05	−.08	.75
FFiCD Anxiousness	**.88**	−.19	.11	.08	.80
PiCD NA	**.85**	.08	.14	.08	.85
FFM N	**.85**	−.11	−.08	.07	.76
FFiCD Emotional Lability	**.79**	.19	.00	.01	.76
FFiCD Shamefulness	**.79**	−.08	.18	.12	.73
FFiCD Depressiveness	**.72**	.00	−.03	.21	.71
FFiCD Irresponsibility	**.64**	.23	**−.35**	.12	.79
FFiCD Unassertiveness	**.60**	−.24	−.04	.23	.51
FFiCD Anger	**.56**	**.31**	.12	.11	.59
FFiCD Rashness	**.56**	**.49**	−.18	−.14	.72
FFiCD Disorderliness	**.55**	.29	**−.35**	−.01	.65
FFiCD Mistrustfulness	**.48**	**.33**	.16	.20	.58
PiCD DL	−.06	**.95**	.09	.04	.86
FFiCD Lack of Empathy	−.07	**.90**	−.04	.16	.83
FFiCD Self-Centeredness	−.03	**.88**	.07	−.03	.74
PID5 AT	−.01	**.85**	.04	−.02	.70
FFiCD Aggressiveness	.06	**.84**	.01	.04	.74
FFM Agreeableness	.25	**−.64**	.19	**−.33**	.51
FFiCD Thrill-Seeking	.23	**.63**	−.09	−.18	.54
PiCD DN	**.42**	**.55**	**−.38**	−.07	.81
PID5 DN	**.48**	**.50**	**−.36**	−.02	.82
PiCD AK	.11	−.06	**.78**	.12	.66
FFiCD Perfectionism	.21	.14	**.77**	.07	.64
FFM C	−.27	−.12	**.76**	−.19	.80
FFiCD Workaholism	.05	.28	**.75**	−.08	.57
FFiCD Inflexibility	**.31**	−.05	**.69**	.22	.68
FFM E	−.10	**.43**	.19	**−.77**	.77
PiCD Detachment	.11	.21	.13	**.76**	.78
PID5 Detachment	.15	.20	.01	**.70**	.70
FFiCD Emotional Detachment	.06	**.36**	.06	**.68**	.69
FFiCD Social Detachment	.15	.00	**.33**	**.57**	.56

Note. FFiCD = Five-Factor Personality Inventory for ICD-11, PiCD = Personality Inventory for ICD-11, PID-5 = Personality Inventory for DSM-5, FFM = five-factor model, N = neuroticism/negative affectivity, DL = dissociality, DN = disinhibition, A = agreeableness, C = conscientiousness, AK = anankastia, DT = detachment, E = extraversion.

Table 5.

5-factor EBFA of the FFiCD facets and FFM, PID-5, and PiCD domains

	g-PD	AK + / DN −	NA	DL	DT	h2
FFM C	−.37	.82	−.02	.03	−.15	.82
PiCD AK	.17	.76	.07	−.05	.09	.65
FFiCD PRF	.36	.69	.01	−.04	.01	.63
FFiCD WRK	.27	.69	−.10	.02	−.15	.59
FFiCD FLX	.38	.61	.08	−.16	.17	.66
PiCD DN	.74	−.56	−.14	−.03	−.17	.91
FFiCD DSR	.68	−.50	.02	−.13	−.08	.71
PID5 DN	.73	−.48	.08	.11	−.13	.83
FFiCD IRS	.74	−.47	.14	−.09	.04	.81
FFiCD RSH	.75	−.31	.09	.05	−.23	.73
PID5 NA	.67	.01	.64	.04	−.15	.81
FFM N	.60	−.09	.62	−.04	.03	.79
PiCD NA	.77	.09	.54	.02	.00	.87
FFiCD VLN	.61	−.01	.54	−.19	.05	.81
FFiCD ANX	.61	.05	.51	−.21	.06	.79
FFiCD EMO	.75	−.05	.50	.09	−.07	.78
FFiCD SHM	.64	.13	.45	−.13	.08	.72
FFiCD DEP	.67	−.08	.40	−.06	.16	.71
FFiCD ANG	.71	.09	.35	.19	.02	.60
FFiCD MST	.69	.15	.33	.26	.10	.60
FFM A	−.31	.10	−.06	−.77	−.24	.69
PID5 AT	.55	.04	.01	.63	−.18	.75
FFiCD LOE	.62	−.05	−.08	.63	.00	.85
PiCD DL	.63	.04	−.14	.58	−.13	.86
FFiCD SC	.58	.01	−.15	.50	−.17	.75
FFiCD AGG	.66	−.06	−.14	.42	−.10	.73
FFiCD UNA	.46	−.12	.20	−.33	.24	.53
FFM E	−.11	.11	−.21	.07	−.76	.79
PiCD DT	.66	.08	−.19	−.03	.64	.83
PID5 DT	.60	.02	.07	.17	.57	.69
FFiCD EDT	.66	.02	−.16	.12	.54	.71
FFiCD SDT	.44	.30	−.07	−.12	.50	.59
FFiCD TSK	.57	−.21	−.12	.16	−.28	.56

Note. FFiCD = Five-Factor Personality Inventory for ICD-11, PiCD = Personality Inventory for ICD-11, PID-5 = Personality Inventory for DSM-5, FFM = five-factor model, AK = anankastia, DT = detachment, DL = dissociality, N = neuroticism/negative affectivity, DN = disinhibition, A = agreeableness, E = extraversion, C = conscientiousness.