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Measurement of pathological personality traits according to the DSM-5: A Polish adaptation of the PID-5 Part II – empirical results

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Summary

Aim. This paper presents results of a study on the Polish adaptation of the Personality Inventory for DSM-5 (PID-5), which was developed to measure pathological traits under a new, dimensional model proposed in Section III of the DSM-5 as part of a hybrid alternative system of personality disorder diagnosis.

Method. The study involved a clinical sample (N = 129 individuals with a mean age of M = 32.40; SD = 9.08; 84.5% with a personality disorder diagnosis) and a non-clinical one (N = 1,043 individuals with a mean age of M = 34.98; SD = 15.71). Two questionnaires: the PID-5 and the MMPI-2 (Minnesota MultiphasicPersonality Inventory – 2) were use in the study.

Results. The results showed the Polish adaptation of the PID-5 to be reliable and valid (the internal consistency coefficients for the PID-5 scales and subscales were high in clinical sample and at satisfactory level in non-clinical sample). All scales and almost all subscales of the PID-5 turned out to differentiate between clinical and non-clinical samples. The PID-5 scales and subscales exhibited a consistent pattern of relationships with the Personality Psychopathology Five (PSY-5) dimensions and with the clinical scales of the MMPI-2.

Conclusions. Obtained data demonstrate the PID-5 to be a satisfactory operationalization of the pathological personality trait model, and at the same time corroborate the scientific value of the DSM-5 model itself.

Key words: personality disorders, DSM-5, PID-5

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Introduction

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5 [1]) has proposed a new, hybrid system of personality disorder diagnosis, a key element of which is a dimensional model of pathological personality traits [2]. While our previous paper [3] presented the major components of this alternative diagnostic system with a focus on the maladaptive trait model, this article characterizes its operationalization, that is, the Personality Inventory for DSM-5 (PID-5 [4]), and reports on its Polish adaptation, including reliability and validity studies in both a clinical and a non-clinical group. The current status, possibilities, and limitations of the inventory are discussed.

The history and structure of the PID-5

The overarching goal adopted by the authors of the PID-5 was to construct a new pathological personality trait model (developed on the basis of a wide-ranging review of other proposals and, importantly, grounded in empirical findings) and a freely available diagnostic tool to be used by clinicians and researchers. The model was intended to integrate the existing concepts of dysfunctional personality characteristics, the emergent system was to incorporate (1) the four major domains identified by Widiger and Simonsen [5] based on their analysis of 18 existing models, with a focus on the poles of trait domains associated with the personality disorder categories recognized in the DSM-IV-TR; (2) a fifth domain defined as psychoticism; (3) a list of trait facets specific to each domain and covering the dysfunctional characteristics included in the diagnostic criteria for personality disorders under the DSM-IV-TR.

The above assumptions constituted a point of departure and a "working framework" for designing a dimensional model and its operationalization (PID-5), which were developed iteratively in a four-step procedure. After delineating the conceptual foundations, the next three steps involved three rounds of web-based empirical studies on samples which were demographically representative of the American population (the representativeness was obtained by weighting for sex, age, ethnicity, education, geographic location, and Internet access). The subjects tested in steps two and three met an additional criterion of having seen a therapist for psychological or psychiatric counseling or therapy. The results were analyzed with advanced psychometric instruments (involving new methods of factor analysis, among others, item response theory (IRT) models [4]).

In the first step, 11 members and consultants of the DSM-5 Personality and Personality Disorders Work Group drafted a list of 37 pathological trait facets covering five general trait domains. All facets on this preliminary list were then briefly

defined and the definitions were then used to formulate inventory items in the form of affirmative statements (initially 296 items, eight for each of the 37 facets). Care was taken for the items to be readily understandable for persons with varying levels of education. The inventory and, by the same token, its underlying model, were validated in the next three steps. The objectives of the first two rounds were to (1) ensure reliable measurement of each facet and (2) determine whether the number of facets could be reduced and whether any items should be reassigned between facets within a given domain.

In the second round, a preliminary version of the inventory was administered in an online survey of 762 members of the Knowledge Networks Panel [cf. 4] who have sought therapist in the past. The preliminary questionnaire was randomly divided into four parts: A, B, C, D, containing 74 items each, with each participant responding to half of the items, e.g., parts A and D. Validation included factor analysis and reliability assessment using IRT models to ensure that each facet contained items fitting a one-factor solution and that all items were reliable and valid indicators of the facets they were supposed to measure. At this stage, 65 items were dropped and psychometric measurements were not satisfactory for six trait facets.

In step three, 85 new items were added to the inventory for each facet to contain at least 8 items, or at least 10 if the facet was not well measured in the previous step. The revised version of the inventory, composed of 316 items, was administered in its entirety to 366 panelists. Data analysis was as in the previous step, followed by exploratory factor analysis conducted separately for all items of all facets of a given trait domain to test the structure of facets within individual trait domains as well as the structure of items within individual facets, and the inventory/model was modified accordingly. It was shown that the 37 initially proposed facets could be psychometrically well measured, but a 25-facet solution was found to be more parsimonious. The application of a goodness-of-fit criterion in exploratory factor analysis (0.5 being the minimum loading in one-factor solutions for all diagnostic items within a facet) and a cap on the number of items per facet led to the final version of the instrument containing 220 items reliably measuring 25 trait facets (with four to 14 items per facet). a mental health professional

The objective of the fourth step was to verify and examine the final version of the inventory in a sample representative of the general American population (without the criterion of having seen a mental health professional). This particular online survey involved 264 members of the Knowledge Networks Panel. The reliability of the facet subscales was estimated by IRT models and classical internal consistency was determined. Cronbach's alpha coefficients ranged from 0.72 to 0.96 with a median of $Me = 0.86$ for the 25 facet subscales and from 0.84 to 0.96 with $Me = 0.95$ for the 5 domain scales. For comparison, in the sample from the third step (persons who have

seen a mental health professional) the corresponding coefficients were 0.73–0.95 with *Me* = 0.88 for the 25 facet subscales and 0.89–0.96 with *Me* = 0.94 for the 5 domain scales.

Subsequently, the population-representative sample tested in the fourth step was compared with the samples of individuals who have seen a mental health professional from the second and third steps. In 24 out of 25 trait facets the latter group exhibited higher scores, with the exception being Restricted affectivity, which was slightly higher in the representative sample.

Minimum average partial (MAP) and parallel analysis criteria were used to determine the factor structure of the 25 trait facets, suggesting the presence of three to six factors. Eventually, a five-factor solution was chosen as consistent with the overarching goal of identifying the maximum number of interpretable dimensions. The five factors corresponded to the expected domains, which were labeled Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. Within this solution, exploratory factor analysis with oblimin rotation (CF-Equamax) revealed a facet structure that was generally in line with the assumptions (five-factor), although several cases of facets loading similarly on more than one factor (cross-loading) were identified. Satisfactory similarity was found between factor solutions obtained for the groups of therapy-seekers (data from steps two and three) and the population-representative group (data from step four).

As a result, the final structure of the new model and measure of pathological personality traits contains 25 trait facets assigned to five trait domains, with three (Psychoticism) to nine (Negative affectivity) facets per domain. Although initially the model had been fully hierarchical with each facet belonging to one domain only [4], ultimately four facets which showed properties characteristic of more than one domain in factor analysis [4, 6] were assigned to two domains each. Consequently, Depressivity, Suspiciousness, and Restricted affectivity are shared by Negative affectivity and Detachment, while Hostility is associated with both Negative affectivity and Antagonism [1]. Moreover, Rigid perfectionism is assigned to Disinhibition with a reverse sign, while Restricted affectivity is straightforward under Detachment, but reverse scored under Negative affectivity. The names of all trait facets and their final assignment to trait domains [cf. 4, 7] are given in Figure 1. The definitions of all traits were presented in a previous paper [3].

As can be seen, the iteratively developed model and measure of pathological personality traits are built on theoretical foundations and backed by empirical evidence. The underlying assumption was that several dozen trait facets hierarchically organized in five broad domains cover dysfunctional characteristics recognized in the psychiatric literature. Designed to encompass critical and clinically salient pathological personality traits, the DSM-5 model is consistent with many other multidimensional

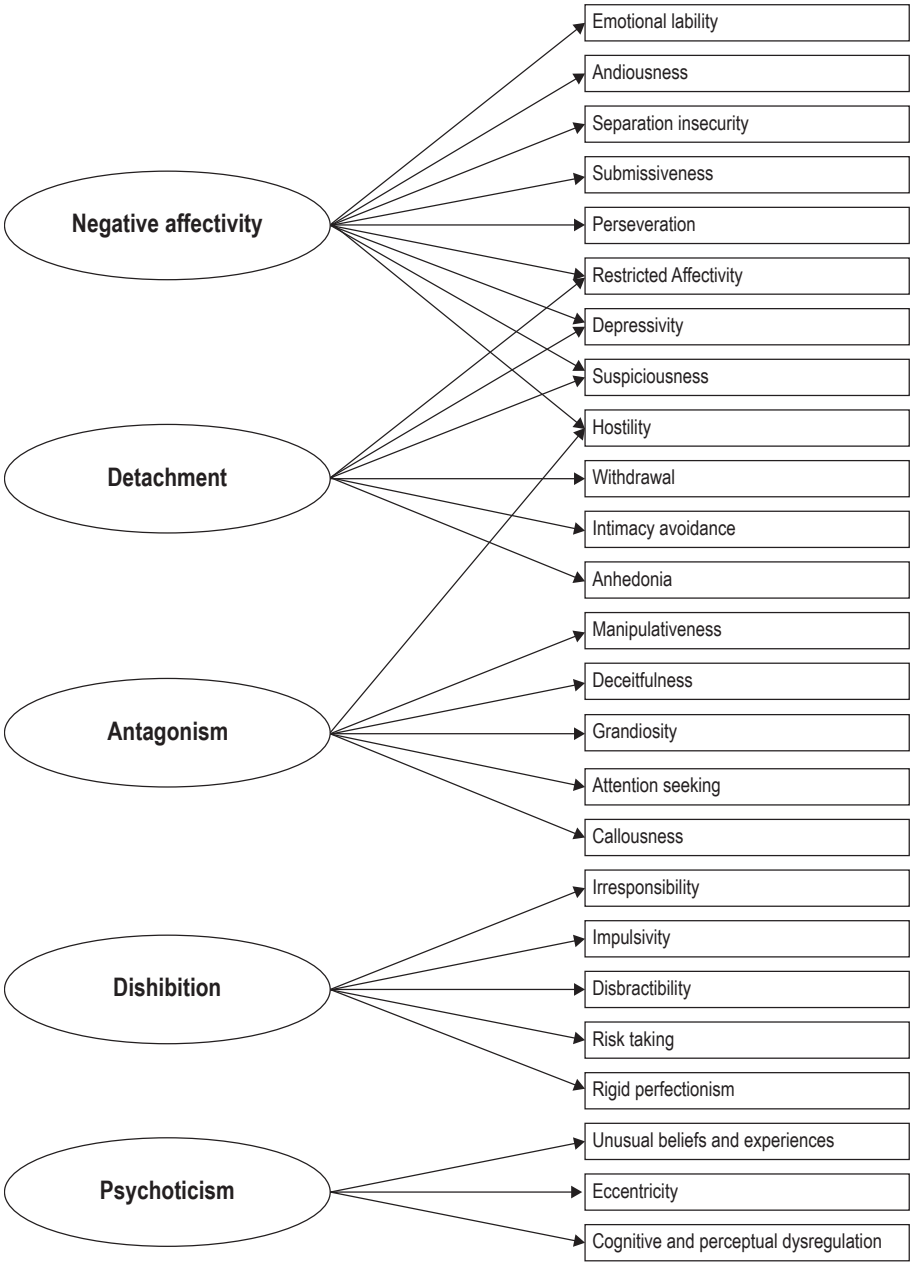

Figure 1. **Structure of the Personality Inventory for DSM-5 (PID-5)**

models describing both normal and abnormal personality [see, e.g., 2, 5], constituting a platform for their integration. Crucially, it is in accordance with the Personality Psychopathology Five (PSY-5 [8]) and the Five Factor Model of normal personality (FFM [9, 10]), being a "clinical complement" of the latter.

Research hypotheses

The present study on the Polish adaptation of the Personality Inventory for DSM-5 (PID-5) adopted two main hypotheses:

1. The scale reliability of the Polish version of the PID-5 will be satisfactory both in a clinical and a non-clinical group as verified by Cronbach's alpha.
2. The external validity of the scales will be satisfactory.

The latter hypothesis was tested in two ways. Firstly, statistical significance of differences test was run to compare the clinical (diagnosis of personal disorder) and the non-clinical group in terms of 25 trait facets and 5 trait domains (higher pathological trait levels were expected in the clinical group). Secondly, given the theoretical underpinnings, correlation analysis was conducted for the five trait domains of the PID-5 and the five psychopathology dimensions of the PSY-5 (a consistent correlation pattern was expected between Negative affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism on the one hand, and Negative emotionality, Introversion, Aggressiveness, Disconstraint, and Psychoticism on the other to corroborate the convergent and discriminant validity of the five main PID-5 scales). In addition, correlations were analyzed between the PID-5 trait measures and the "classical" clinical scales of the Minnesota Multiphasic Personality Inventory (MMPI-2), an instrument with widely recognized diagnostic utility. Although a consistent pattern of correlations was expected, the analysis was essentially exploratory. The response bias susceptibility of the PID-5 scales and subscales was determined by examining their correlations with the MMPI-2 validity scales. Finally, the PID-5 scores were analyzed in terms of sex and age. Based on FFM studies of normal personality [cf. 9], females were expected to score higher on Negative affectivity and males on Antagonism, while all negative trait domains except for Detachment were predicted to exhibit a negative correlation with age.

Method

Study group and procedure

The study involved two groups. The first one consisted of 1,043 non-clinical participants aged 16–86 (M = 34.98; SD = 15.71), 54.5% of whom were female. All

members of this group took the PID-5, and 255 of them (age *M* = 30.73; *SD* = 11.86; 60.0% female) additionally completed the MMPI-2. The instruments were administered by psychology students, each of whom recruited 6–10 participants from among their friends and acquaintances. The inclusion of a non-clinical group in the PID-5 study was motivated by the dimensional approach underlying the DSM-5 model, according to which pathological personality traits are present to some extent in every person.

The clinical group consisted of 129 participants aged 18–63 (*M* = 32.40; *SD* = 9.08) with 67.4% females. All members of this group were undergoing psychological or psychiatric therapy, of whom 88 (68.2%) were patients of psychiatric wards, and 41 (31.8%) were outpatients. All of them had a clinical diagnosis: 109 (84.5%) were diagnosed with a personality disorder and 20 (15.5%) with some other, non-psychotic condition (e.g., episodes of depression, eating disorder) with concomitant personality disorder symptoms. In the vast majority of clinical participants, a personality disorder was accompanied by other psychopathological symptoms, such as addiction. Among patients with personality disorders, 60 (46.5% of the sample) were diagnosed with a specific personality disorder (F60), with the most prevalent categories being borderline personality (F60.3 – 28 patients; 21.7%), other specific personality disorders (F60.8 – 16; 12.4%; including 6 narcissistic individuals), and dissocial personality (F60.2 – 13; 10.1%), while 14 individuals (10.9%) were given a diagnosis of mixed and other personality disorders (F61), although statistics on the latter are incomplete due to missing data. All patients completed the PID-5, and 86 of them (mean age *M* = 31.62; *SD* = 9.09; 70.9% females) additionally took the MMPI-2.

According to the recommendations of the Ethics and Bioethics Committee at the Cardinal Stefan Wyszyński University, which approved the study, all participants were informed about its purpose and expressed a written consent. All participants completed the inventories individually.

Tools

The Personality Inventory for DSM-5 (PID-5)

The instrument was developed by Krueger, Derringer, Markon, Watson, and Skodol [4] to measure the pathological personality trait model proposed under the DSM-5 and can be administered as a self-report or informant-report measure. The PID-5 consists of 220 items organized into 25 subscales (4 to 14 items per subscale) measuring pathological trait facets and 5 general scales (33 to 74 items per scale) measuring trait domains. Due to the structure of the model, some items are used to measure two domains (see

Figure 1). Responses are given on a 4-point Likert scale: 0 – "Very false or often false"; 1 – "Sometimes or somewhat false"; 2 – "Sometimes or somewhat true"; 3 – "Very true or often true". While some authors [11] have suggested an elevation threshold of 2 for the pathological traits measured with the PID-5, the DSM-5 recommends that scores should be related to population norms and/or compared against a clinical evaluation (e.g., based on interview data).

The present authors prepared the Polish adaptation of the PID-5. Items were translated by them from English with a special focus on the theoretical and clinical content of the respective scales. Subsequently, two English translators conducted back-translation from Polish, with both translations submitted to the two of the authors of the original inventory, R. Krueger and K. Markon. The final wording of the test items was formulated in consultation with the latter and approval was obtained from the authors of the original inventory. The results presented in this paper concern the self-report version of the PID-5.

The Minnesota Multiphasic Personality Inventory – 2 (MMPI-2)

This instrument is a revised version of one of the most popular tools used in clinical diagnosis. It consists of 567 items, on which subjects rate themselves by answering "true" or "false". The items are organized into multiple scales, including the "classical" clinical scales present already in the original version of the MMPI: Hypochondriasis (1 Hs; 32 items), Depression (2 D; 57), Hysteria (3 Hy; 60), Psychopathic deviate (4 Pd; 50), Masculinity-Femininity (5 Mf; 56), Paranoia (6 Pa; 40), Psychasthenia (7 Pt; 48), Schizophrenia (8 Sc; 78), Hypomania (9 Ma; 46), and Social introversion (0 Si; 69), as well as five personality psychopathology scales according to the PSY-5: Aggressiveness (18), Psychoticism (25), Disconstraint (29), Negative emotionality/ Neuroticism (33), and Introversion/Low positive emotionality (34). In the present study, we used all of the above 15 scales, as well as five validation scales: Correction (K; 30), Lie (L; 15), Infrequency (F; 60), Superlative Self-Presentation (S; 50), and Fake Bad (FBS; 43), in their Polish adaptation [12]. Cronbach's alpha reliability coefficients for those scales are 0.64–0.87 ($M = 0.74$) for the PSY-5 scales, 0.66–0.92 ($M = 0.76$) for the 10 clinical scales and 0.51–0.88 ($M = 0.73$) for the validity scales in the non-clinical group, and 0.67–0.89 ($M = 0.78$) for the PSY-5 scales, 0.57–0.93 ($M = 0.74$) for the 10 clinical scales, and 0.65–0.86 ($M = 0.75$) for the validity scales in the clinical group.

Results

Reliability, sex differences and effects of age

In the first step, the reliability of the PID-5 scales was analyzed in the non-clinical and clinical groups (see Tables 1 and 2). Cronbach's alpha coefficients, assessing internal consistency, were 0.88–0.95 ($M = 0.92$) for the general scales and 0.65–0.93 ($M = 0.80$) for the 25 subscales in the non-clinical group, and 0.88–0.96 ($M = 0.94$) for the scales and 0.72–0.94 ($M = 0.85$) for the 25 subscales in the clinical group. Reliability coefficients (especially of trait facets) were somewhat higher in the clinical group as compared to the non-clinical one, in which alpha coefficients lower than 0.70 (but >0.6) were obtained for the subscales of Restricted affectivity, Suspiciousness, and Irresponsibility. In the clinical group, all subscales exhibited reliability coefficients above 0.70, and in four cases more than 0.90. The reliability of individual PID-5 scales and subscales was generally similar in males and females, although several subscales (Intimacy avoidance, Irresponsibility, and Grandiosity in the non-clinical group and Unusual beliefs and experiences, Cognitive and perceptual dysregulation, Separation insecurity, Emotional lability, Submissiveness, and Deceitfulness in the clinical group) revealed marked differences (>0.05).The above findings indicate satisfactory reliability of the PID-5 scales and subscales, with the results being slightly higher in the clinical group as compared to the non-clinical one, and much higher as compared to the PSY-5 scales and the clinical MMPI scales (see Table A in the Appendix).

As far as sex differences in trait domains are concerned, in the non-clinical group females scored significantly higher on Negative affectivity (the largest statistical difference), while males revealed stronger Antagonism and Disinhibition. In the same group, the most pronounced differences in trait facets were found for Anxiousness and Emotional lability (females scored higher) and Callousness and Risk taking (males scored higher). In turn, in the clinical group significant differences were obtained only for the domains of Negative affectivity and Detachment and for the facets of Emotional lability and Anxiousness, with females scoring higher in all cases. Finally, age was negatively, albeit weakly, correlated with pathological personality traits, especially for Disinhibition, Risk taking and Eccentricity in the non-clinical group and for Negative affectivity, Depressivity and Cognitive and perceptual dysregulation in the clinical group. Interestingly, the only significant positive correlations with age were found for Intimacy avoidance (and Withdrawal) in the non-clinical group. In general, the identified associations of pathological traits with sex and age are consistent with the results reported for normal personality in FFM studies [see 9].

Table 1. **Measurement reliability (Cronbach's alpha) and relations with sex (Mann-Whitney *U* test) and age (Spearman's rho) of the PID-5 scales and subscales in the non-clinical group**

Specification	Alpha general	Females (n = 567)			Males (n = 473)			Sex differences		Age (rho)
		alpha	M	SD	alpha	M	SD	Z	p	
NEGATIVE AFFECTIVITY	0.93	0.93	1.27	0.37	0.92	1.09	0.33	-7.59	0.000	-0.10**
DETACHMENT	0.93	0.93	0.84	0.40	0.92	0.80	0.37	-1.20	0.230	0.02
ANTAGONISM	0.95	0.94	0.76	0.40	0.95	0.89	0.44	-4.76	0.000	-0.23**
DISINHIBITION	0.88	0.89	1.19	0.36	0.88	1.26	0.35	-3.35	0.001	-0.33**
PSYCHOTICISM	0.93	0.93	0.72	0.47	0.94	0.75	0.48	-0.96	0.336	-0.25**
Emotional lability	0.84	0.83	1.47	0.65	0.81	1.06	0.60	-9.65	0.000	-0.13**
Anxiousness	0.90	0.89	1.51	0.72	0.89	1.04	0.65	-10.33	0.000	0.03
Separation insecurity	0.75	0.75	1.50	0.61	0.75	1.34	0.61	-4.20	0.000	0.04
Submissiveness	0.70	0.72	1.19	0.66	0.67	1.09	0.60	-2.61	0.009	0.05
Perseveration	0.77	0.77	1.00	0.53	0.77	0.91	0.50	-2.61	0.009	-0.12**
Hostility	0.81	0.82	1.27	0.57	0.79	1.21	0.53	-1.44	0.150	-0.20**
Depressivity	0.91	0.91	0.76	0.58	0.90	0.60	0.49	-4.43	0.000	-0.13**
Suspiciousness	0.67	0.68	1.02	0.50	0.67	1.03	0.49	-0.09	0.929	-0.03
Restricted affectivity	0.65	0.63	0.84	0.47	0.65	1.01	0.48	-5.86	0.000	-0.01
Withdrawal	0.87	0.86	0.84	0.59	0.88	0.84	0.60	-0.12	0.906	0.09**
Intimacy avoidance	0.71	0.73	0.83	0.66	0.66	0.69	0.55	-2.82	0.005	0.29**
Anhedonia	0.73	0.74	0.84	0.48	0.72	0.80	0.45	-0.92	0.359	0.01
Manipulativeness	0.81	0.79	0.80	0.63	0.82	0.99	0.68	-4.49	0.000	-0.21**
Deceitfulness	0.87	0.86	0.73	0.54	0.86	0.90	0.57	-4.96	0.000	-0.22**
Grandiosity	0.78	0.75	0.64	0.54	0.81	0.77	0.61	-3.46	0.001	-0.08*

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Attention seeking	0.89	0.89	0.91	0.65	0.89	1.02	0.66	-2.57	0.010	-0.12**
Callousness	0.86	0.82	0.38	0.36	0.87	0.59	0.47	-8.08	0.000	-0.19**
Irresponsibility	0.69	0.66	0.71	0.48	0.73	0.77	0.51	-1.77	0.077	-0.18**
Impulsivity	0.81	0.81	1.04	0.65	0.80	0.92	0.61	-2.90	0.004	-0.15**
Distractibility	0.85	0.85	1.03	0.58	0.86	0.94	0.59	-2.31	0.021	-0.17**
Risk taking	0.90	0.89	1.16	0.60	0.89	1.44	0.57	-7.75	0.000	-0.31**
Rigid perfectionism	0.85	0.86	1.20	0.62	0.84	1.16	0.57	-0.82	0.413	0.08*
Unusual beliefs and experiences	0.75	0.74	0.67	0.52	0.76	0.66	0.52	-0.39	0.699	-0.04
Eccentricity	0.93	0.92	0.91	0.66	0.93	1.05	0.68	-3.47	0.001	-0.33**
Cognitive and perceptual dysregulation	0.82	0.81	0.54	0.46	0.84	0.48	0.44	-2.39	0.017	-0.20**

* $p < 0.05$, ** $p < 0.01$ (two-tailed); Z – Mann-Whitney U test (two-tail significance)

Table 2. **Measurement reliability(Cronbach's alpha) and relations with sex (Mann-Whitney *U* test) and age (Spearman's rho) of the PID-5 scales and subscales in the clinical group**

Specification	Alpha general	Females (n = 87)			Males (n = 42)			Sex differences		Age (rho)
		alpha	M	SD	alpha	M	SD	Z	p	
NEGATIVE AFFECTIVITY	0.96	0.95	1.70	0.47	0.96	1.42	0.48	-3.28	0.001	-0.34**
DETACHMENT	0.96	0.96	1.37	0.54	0.96	1.19	0.56	-2.06	0.040	-0.28**
ANTAGONISM	0.96	0.96	0.97	0.52	0.96	1.01	0.50	-0.59	0.553	-0.15
DISINHIBITION	0.88	0.89	1.52	0.41	0.84	1.43	0.33	-1.27	0.203	-0.28**
PSYCHOTICISM	0.95	0.96	0.98	0.65	0.92	0.91	0.47	-0.30	0.767	-0.25**
Emotional lability	0.87	0.87	2.06	0.73	0.80	1.47	0.68	-4.23	0.000	-0.25**
Anxiousness	0.89	0.88	2.09	0.70	0.88	1.59	0.72	-3.63	0.000	-0.23**
Separation insecurity	0.85	0.88	1.70	0.84	0.77	1.61	0.73	-0.81	0.419	-0.21*
Submissiveness	0.82	0.79	1.63	0.76	0.86	1.32	0.82	-1.90	0.057	-0.22*

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Perseveration	0.83	0.83	1.33	0.66	0.82	1.28	0.64	-0.47	0.640	-0.20*
Hostility	0.84	0.84	1.58	0.65	0.84	1.45	0.64	-1.17	0.242	-0.22*
Depressivity	0.94	0.93	1.70	0.76	0.95	1.26	0.83	-2.93	0.003	-0.34**
Suspiciousness	0.82	0.81	1.35	0.70	0.84	1.12	0.65	-1.86	0.063	-0.26**
Restricted affectivity	0.72	0.73	1.11	0.61	0.70	1.18	0.56	-0.51	0.611	-0.16
Withdrawal	0.89	0.88	1.29	0.68	0.91	1.28	0.76	-0.17	0.868	-0.10
Intimacy avoidance	0.78	0.77	1.03	0.76	0.80	0.74	0.70	-2.22	0.026	-0.04
Anhedonia	0.82	0.82	1.42	0.64	0.83	1.38	0.65	-0.46	0.647	-0.19*
Manipulativeness	0.82	0.82	0.96	0.75	0.80	1.15	0.75	-1.46	0.143	-0.08
Deceitfulness	0.90	0.91	0.92	0.70	0.85	0.99	0.62	-0.85	0.396	-0.12
Grandiosity	0.76	0.76	0.66	0.60	0.78	0.69	0.59	-0.38	0.704	-0.07
Attention seeking	0.92	0.92	1.21	0.82	0.91	1.33	0.76	-1.06	0.289	-0.03
Callousness	0.87	0.85	0.59	0.48	0.90	0.63	0.57	-0.10	0.922	-0.08
Irresponsibility	0.75	0.76	1.22	0.70	0.75	1.27	0.66	-0.66	0.512	-0.20*
Impulsivity	0.88	0.88	1.59	0.76	0.85	1.22	0.75	-2.61	0.009	-0.21*
Distractibility	0.86	0.87	1.57	0.71	0.84	1.37	0.64	-1.42	0.155	-0.21*
Risk taking	0.91	0.92	1.52	0.71	0.87	1.42	0.58	-0.81	0.417	-0.19*
Rigid perfectionism	0.85	0.84	1.36	0.66	0.87	1.27	0.71	-0.37	0.711	-0.07
Unusual beliefs and experiences	0.83	0.86	0.68	0.71	0.67	0.67	0.49	-0.78	0.437	-0.05
Eccentricity	0.94	0.95	1.32	0.83	0.90	1.28	0.64	-0.16	0.870	-0.22*
Cognitive and perceptual dysregulation	0.86	0.89	0.81	0.65	0.72	0.67	0.42	-0.66	0.509	-0.32**

* $p < 0.05$, ** $p < 0.01$ (two-tailed); Z – Mann-Whitney U test (two-tailed significance)

The distributions of all PID-5 scales and most subscales were normal both in the non-clinical and clinical groups (see Table 4). The exceptions included Callousness, Depressivity, and Cognitive and perceptual dysregulation (in both groups), and Unusual beliefs and experiences (in the clinical group).

Scale intercorrelations

All trait domains were found to be significantly and positively intercorrelated both in the non-clinical and clinical group, although in the latter most correlations were higher. The strongest associations with other trait domains were exhibited by Negative affectivity and Psychoticism, while the highest correlation was found between Negative affectivity and Detachment, which is hardly surprising given the fact that half of the facets of the latter are shared by the former. In general, intercorrelations between the PID-5 domains were moderately strong and positive, forming a pattern that indicates the existence of a higher order structure, reported in the literature, or pathological personality metatraits (internalizing and externalizing tendencies), including a general pathological personality factor [2, 13–15].

Table 3. **Intercorrelations of the general PID-5 scales in the non-clinical group (above the diagonal *N* = 1,043) and in the clinical group (below the diagonal *N* = 129)**

	Negative affectivity	Detachment	Antagonism	Disinhibition	Psychoticism
Negative affectivity		0.64	0.40	0.21	0.60
Detachment	0.76		0.30	0.12	0.50
Antagonism	0.56	0.32		0.47	0.54
Disinhibition	0.43	0.38	0.54		0.42
Psychoticism	0.67	0.56	0.52	0.52	

Pearson's r correlation coefficient; all correlations are statistically significant at $p < 0.001$ (one-tailed)

Validity: differences between the clinical and non-clinical group

As expected, the clinical group scored significantly higher on all PID-5 pathological personality trait domains and on 23 out of 25 trait facets as compared to the non-clinical group; in the vast majority of cases the differences were significant at $p < 0.001$. The largest differences were found for the domains of Negative affectivity, Detachment and Disinhibition and for the facets of Depressivity, Anhedonia, Anxiousness, Emotional lability, Irresponsibility, and Distractibility. The differences were not significant only in the case of Grandiosity and Unusual beliefs and experiences (which may be attributed to the specificity of the clinical sample in terms of the dominant personality disorders). Moreover, the clinical group exhibited greater variation in the levels of pathological traits than the non-clinical one. It should be noted that the PID-5 scales and subscales were not only more reliable, but also more discriminant (therefore more valid) between clinical and non-clinical participants as compared to the PSY-5 scales

and the MMPI-2 clinical scales, taking into account the number and informative power of the latter (see Table A in the Appendix).

Table 4. **Descriptive statistics and results of test for differences between the clinical and non-clinical group in terms of the PID-5 scales and subscales**

Specification	non-clinical group (n = 1,043)						clinical group (n = 129)						Z	p
	Min.	Max.	Skewness	Kurtosis	M	SD	M	SD	Min.	Max.	Skewness	Kurtosis		
NEGATIVE AFFECTIVITY	0.31	2.30	0.25	-0.24	1.18	0.37	1.61	0.49	0.45	2.61	-0.07	-0.66	-9.28	0.000
DETACHMENT	0.04	2.24	0.48	0.03	0.82	0.39	1.31	0.55	0.04	2.52	0.00	-0.76	-9.56	0.000
ANTAGONISM	0.04	2.75	0.68	0.67	0.82	0.43	0.99	0.51	0.06	2.57	0.47	-0.13	-3.52	0.000
DISINHIBITION	0.28	2.39	0.27	0.24	1.22	0.35	1.49	0.39	0.59	2.37	0.03	-0.54	-7.30	0.000
PSYCHOTICISM	0.00	2.70	0.55	-0.19	0.73	0.47	0.96	0.60	0.00	2.82	0.71	0.23	-3.95	0.000
Emotional lability	0.00	3.00	0.19	-0.47	1.28	0.66	1.86	0.76	0.00	3.00	-0.38	-0.56	-8.11	0.000
Anxiousness	0.00	3.00	0.28	-0.72	1.29	0.73	1.93	0.74	0.11	3.00	-0.35	-0.75	-8.41	0.000
Separation insecurity	0.00	3.00	-0.18	-0.52	1.43	0.61	1.67	0.80	0.00	3.00	-0.29	-0.75	-3.80	0.000
Submissiveness	0.00	3.00	0.17	-0.43	1.14	0.63	1.53	0.79	0.00	3.00	-0.07	-0.55	-5.53	0.000
Perseveration	0.00	3.00	0.13	-0.38	0.96	0.52	1.31	0.65	0.00	2.78	0.07	-0.79	-5.71	0.000
Hostility	0.00	2.90	0.21	-0.28	1.24	0.56	1.54	0.65	0.10	3.00	-0.04	-0.50	-5.00	0.000
Depressivity	0.00	2.86	1.10	1.18	0.69	0.54	1.55	0.81	0.00	3.00	-0.17	-1.09	-11.17	0.000
Suspiciousness	0.00	2.71	0.28	-0.08	1.02	0.49	1.28	0.69	0.00	2.86	0.09	-0.75	-4.12	0.000
Restricted affectivity	0.00	2.71	0.41	0.10	0.92	0.48	1.13	0.59	0.00	2.57	0.14	-0.62	-4.05	0.000
Withdrawal	0.00	3.00	0.69	0.03	0.84	0.59	1.28	0.71	0.00	2.80	0.11	-0.68	-6.89	0.000
Intimacy avoidance	0.00	2.83	0.56	-0.48	0.77	0.62	0.94	0.75	0.00	3.00	0.99	0.39	-2.05	0.020
Anhedonia	0.00	3.00	0.65	0.61	0.82	0.47	1.41	0.64	0.00	2.88	-0.02	-0.67	-9.89	0.000
Manipulativeness	0.00	3.00	0.62	-0.04	0.88	0.66	1.02	0.75	0.00	2.80	0.32	-0.72	-1.95	0.026
Deceitfulness	0.00	2.90	0.65	0.09	0.80	0.56	0.94	0.68	0.00	2.90	0.50	-0.62	-1.87	0.031
Grandiosity	0.00	3.00	0.80	0.36	0.70	0.57	0.67	0.59	0.00	2.33	0.79	-0.20	-0.70	0.243

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Attention seeking	0.00	3.00	0.53	-0.16	0.96	0.65	1.25	0.80	0.00	3.00	0.34	-0.76	-3.73	0.000
Callousness	0.00	2.79	1.31	2.15	0.47	0.43	0.60	0.51	0.00	2.50	1.09	1.38	-2.66	0.004
Irresponsibility	0.00	2.86	0.71	0.46	0.74	0.49	1.23	0.68	0.00	3.00	0.20	-0.52	-8.08	0.000
Impulsivity	0.00	2.83	0.49	-0.30	0.99	0.63	1.47	0.77	0.00	3.00	-0.03	-0.82	-6.80	0.000
Distractibility	0.00	2.78	0.35	-0.32	0.99	0.59	1.51	0.69	0.00	2.89	-0.03	-0.70	-7.89	0.000
Risk taking	0.00	2.93	0.19	-0.34	1.28	0.60	1.49	0.67	0.21	2.93	0.15	-0.66	-3.25	0.001
Rigid perfectionism	0.00	2.90	0.17	-0.46	1.18	0.59	1.33	0.68	0.00	3.00	0.27	-0.30	-2.20	0.014
Unusual beliefs and experiences	0.00	2.63	0.74	0.13	0.67	0.52	0.68	0.65	0.00	3.00	1.07	0.76	-0.74	0.231
Eccentricity	0.00	3.00	0.48	-0.54	0.97	0.67	1.30	0.77	0.00	3.00	0.25	-0.75	-4.59	0.000
Cognitive and perceptual dysregulation	0.00	2.92	1.04	0.93	0.51	0.45	0.77	0.59	0.00	2.83	1.02	1.07	-4.85	0.000

Z – Mann-Whitney *U* test (one-tailed significance).

Validity: correlations with the PSY-5 model and the MMPI-2 clinical scales

Tables 5 and 6 contain correlation coefficients of the PID-5 scales and subscales with the PSY-5 scales and the clinical and validity scales of the MMPI-2 for the non-clinical and clinical group, respectively. The correlation pattern obtained for the PID-5 trait domains and the PSY-5 dimensions measured with the MMPI-2 is essentially consistent with expectations, especially in the non-clinical group, in which both convergent and discriminant validity of the PID-5 scales was confirmed. Correlations between the corresponding scales were significantly higher than with others (except for the association of PID-5 Antagonism with PSY-5 Disconstraint). On the other hand, the pattern obtained for the clinical group was not as clear, with the main problem being (too) high correlations between PSY-5 Negative emotionality and all five PID-5 domains, and between PSY-5 Disconstraint and PID-5 Antagonism as well as a lower than expected correlation between PSY-5 Disconstraint and PID-5 Disinhibition. Generally, in the clinical group the associations of the PID-5 scales and subscales with the MMPI-2 scales used in the study were much stronger and less varied than those found in the non-clinical group.

Correlation analysis revealed a number of strong and moderately strong correlations between the PID-5 scales and subscales and the clinical scales of the MMPI-2. The resulting pattern is coherent and consistent with the meaning of particular scales.

As regards trait domains, in the non-clinical group Negative affectivity was most closely associated with Psychasthenia, Detachment with Social introversion, Antagonism and Disinhibition with Hypomania, and Psychoticism with Schizophrenia. In turn, in the clinical group, Negative affectivity and Detachment were most closely correlated with Psychasthenia and Schizophrenia, Antagonism with Hypomania, and Disinhibition with Schizophrenia, which was in turn strongly related to Psychoticism. Among the PID-5 trait domains, the one most strongly correlated with the clinical scales of the MMPI-2 was Negative affectivity, in contrast to Antagonism and Disinhibition, which revealed the weakest associations. Conversely, among the MMPI-2 clinical scales, Psychasthenia and Schizophrenia revealed the strongest, and Masculinity-Femininity and Hysteria the weakest, correlations with the PID-5 scales.

In both groups, the trait facets most closely correlated with the clinical scales of the MMPI-2 were Depressivity (especially with Psychasthenia, Schizophrenia, Depression, and Psychopathic deviate) and Anxiousness (especially with Psychasthenia, Depression, and Hypochondriasis). Moreover, in the non-clinical group the highest correlations ($r > 0.5$) were those of Depressivity with Hypochondriasis, Anxiousness with Social introversion, Cognitive and perceptual dysregulation with Schizophrenia and Psychasthenia, Emotional lability with Psychasthenia, and Withdrawal with Social introversion. In addition, in the clinical group, Anxiousness was strongly correlated with Schizophrenia, Suspiciousness with Schizophrenia and Paranoia, Withdrawal with Social introversion, Anhedonia with Depression, and Cognitive and perceptual dysregulation and Eccentricity with Schizophrenia (all $r > 0.6$).

The above results essentially confirm the validity of the PID-5. The much stronger and less varied results in the clinical group seem to be attributable to the higher levels of pathological personality traits and a diversity of diagnoses linked to the concurrence of several traits and symptoms, reflected in the concept of pathological personality metatraits and a general factor of personality psychopathology [2, 13–15].

As far as the PID-5 susceptibility to response bias is concerned, the highest correlations with the validity scales of the MMPI-2 were revealed by the Negative affectivity scale and its subscales, while the lowest correlations were found for the Antagonism and Disinhibition scales and their subscales. The strongest (negative) correlations were found for the Superlative Self-Presentation and Correction scales, while the weakest correlations were identified for the Lie scale (this scale exhibited weak correlations across the board, especially in the non-clinical group). These results, as well as similar patterns of correlations of the PID-5 scales and subscales with the MMPI-2 validity and clinical scales generally support the PID-5 validity, although they also indicate that caution should be exercised while interpreting the Negative affectivity scale and some of its subscales, namely, Depressivity, Anxiousness, and Emotional lability in non-clinical groups, as well as Suspiciousness and Perseveration in clinical groups.

Table 5. **Pearson's *r* correlation coefficients of the PID-5 scales and subscales with the PSY-5 scales and the clinical and validity scales of the MMPI-2 in the non-clinical group (N = 255)**

	NEGE	INTR	AGRR	DISC	PSYC	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si	K	F	L	S	FBS
NEGATIVE AFFECTIVITY	0.72	0.37	-0.03	-0.03	0.34	0.54	0.59	0.34	0.54	0.39	0.43	0.70	0.54	0.23	0.49	-0.55	0.21	-0.21	-0.61	0.49
DETACHMENT	0.44	0.57	-0.02	-0.03	0.37	0.48	0.53	0.27	0.49	0.17	0.40	0.55	0.54	0.12	0.60	-0.39	0.34	-0.04	-0.40	0.45
ANTAGONISM	0.19	-0.02	0.45	0.43	0.35	0.09	-0.05	0.04	0.32	-0.13	0.27	0.20	0.34	0.48	-0.07	-0.20	0.26	-0.18	-0.29	-0.05
DISINHIBITION	0.19	-0.05	0.28	0.49	0.29	0.14	0.01	0.09	0.36	-0.15	0.29	0.26	0.36	0.45	-0.14	-0.15	0.28	-0.14	-0.24	0.08
PSYCHOTICISM	0.38	0.13	0.20	0.28	0.54	0.37	0.24	0.22	0.48	0.11	0.45	0.54	0.60	0.53	0.19	-0.35	0.36	-0.10	-0.44	0.32
Emotional lability	0.67	0.20	-0.01	-0.08	0.24	0.40	0.49	0.23	0.43	0.43	0.38	0.61	0.42	0.20	0.35	-0.54	0.07	-0.23	-0.57	0.37
Anxiousness	0.69	0.37	-0.18	-0.21	0.23	0.50	0.60	0.31	0.39	0.46	0.30	0.61	0.39	0.05	0.55	-0.47	0.11	-0.16	-0.51	0.49
Separation insecurity	0.37	0.08	-0.06	-0.04	0.14	0.23	0.29	0.11	0.16	0.25	0.14	0.33	0.20	0.09	0.21	-0.30	0.04	-0.09	-0.31	0.22
Submissiveness	0.26	0.28	-0.13	-0.11	0.03	0.21	0.29	0.12	0.25	0.17	0.13	0.30	0.23	0.05	0.36	-0.18	0.00	-0.12	-0.25	0.19
Perseveration	0.39	0.15	0.00	0.03	0.28	0.34	0.30	0.21	0.32	0.18	0.24	0.44	0.38	0.24	0.27	-0.35	0.14	-0.16	-0.39	0.27
Hostility	0.50	0.19	0.24	0.22	0.25	0.29	0.25	0.13	0.38	0.07	0.28	0.40	0.39	0.31	0.19	-0.40	0.18	-0.22	-0.48	0.15
Depressivity	0.54	0.50	-0.05	-0.02	0.38	0.53	0.60	0.38	0.57	0.32	0.50	0.64	0.60	0.19	0.50	-0.39	0.37	-0.06	-0.41	0.55
Suspiciousness	0.45	0.24	0.14	0.13	0.36	0.39	0.30	0.17	0.43	0.02	0.35	0.43	0.39	0.21	0.32	-0.40	0.20	-0.14	-0.47	0.31
Restricted affectivity	0.01	0.22	0.09	0.10	0.19	0.08	0.06	-0.06	0.14	-0.19	0.15	0.13	0.25	0.10	0.23	-0.11	0.21	0.06	-0.07	0.06
Withdrawal	0.23	0.51	-0.07	-0.08	0.21	0.28	0.38	0.08	0.26	0.10	0.21	0.35	0.32	-0.03	0.57	-0.28	0.16	-0.03	-0.29	0.24
Intimacy avoidance	0.08	0.28	-0.07	-0.19	0.06	0.14	0.14	0.09	0.04	0.07	0.02	0.06	0.08	-0.09	0.28	-0.07	0.08	0.06	-0.03	0.14
Anhedonia	0.35	0.51	-0.03	0.00	0.27	0.43	0.48	0.30	0.42	0.15	0.31	0.46	0.46	0.10	0.46	-0.26	0.30	-0.05	-0.29	0.37

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Manipulativeness	-0.04	-0.16	0.39	0.37	0.16	-0.06	-0.20	-0.02	0.13	-0.16	0.10	-0.05	0.11	0.31	-0.24	0.01	0.12	-0.09	-0.07	-0.16
Deceitfulness	0.10	0.03	0.27	0.37	0.22	0.06	-0.01	0.05	0.24	-0.10	0.17	0.14	0.22	0.32	-0.03	-0.13	0.15	-0.22	-0.21	-0.11
Grandiosity	0.07	-0.19	0.37	0.26	0.35	-0.02	-0.14	-0.05	0.13	-0.10	0.21	0.10	0.22	0.38	-0.11	-0.11	0.22	-0.05	-0.16	-0.04
Attention seeking	0.04	-0.24	0.40	0.27	0.19	-0.06	-0.17	-0.03	0.12	-0.02	0.11	0.01	0.11	0.36	-0.25	-0.06	0.10	-0.08	-0.08	-0.11
Callousness	0.05	0.12	0.36	0.39	0.33	0.07	-0.07	0.04	0.30	-0.29	0.25	0.15	0.33	0.39	0.02	-0.10	0.33	-0.06	-0.17	-0.02
Irresponsibility	0.33	0.16	0.10	0.27	0.29	0.27	0.19	0.18	0.43	0.03	0.32	0.39	0.41	0.34	0.14	-0.30	0.25	-0.17	-0.37	0.18
Impulsivity	0.42	0.00	0.26	0.26	0.25	0.29	0.14	0.16	0.35	0.07	0.32	0.36	0.37	0.36	0.02	-0.35	0.18	-0.18	-0.41	0.20
Distractibility	0.44	0.18	-0.07	0.06	0.22	0.33	0.34	0.22	0.33	0.19	0.22	0.49	0.38	0.18	0.27	-0.34	0.13	-0.17	-0.37	0.31
Risk ta king	-0.05	-0.26	0.45	0.57	0.28	-0.04	-0.24	-0.08	0.17	-0.35	0.18	0.03	0.21	0.49	-0.35	0.02	0.25	-0.04	-0.08	-0.09
Rigid perfectionism	0.29	0.03	0.07	-0.14	0.14	0.21	0.14	0.07	0.04	0.14	0.07	0.23	0.14	0.07	0.21	-0.28	-0.01	-0.04	-0.27	0.17
Unusual beliefs and experiences	0.28	0.01	0.16	0.19	0.51	0.31	0.18	0.22	0.36	0.13	0.39	0.39	0.44	0.42	0.06	-0.26	0.29	-0.01	-0.33	0.29
Eccentricity	0.28	0.10	0.23	0.32	0.39	0.26	0.14	0.10	0.41	0.03	0.34	0.43	0.48	0.48	0.15	-0.31	0.25	-0.13	-0.40	0.19
Cognitive and perceptual dysregulation	0.41	0.19	0.07	0.15	0.51	0.40	0.33	0.30	0.42	0.16	0.44	0.57	0.59	0.40	0.26	-0.31	0.40	-0.08	-0.37	0.40

Correlation coefficients higher than 0.10 are significant at $p < 0.05$ (one-tailed).

Abbreviations: NEGE = Negative Emotionality; INTR = Introversion; AGRR = Aggressiveness; DISC = Disconstraint; PSYC = Psychoticism; Hs = Hypochondriasis; D = Depression; Hy = Hysteria; Pd = Psychopathic Deviate; Mf = Masculinity–Femininity; Pa = Paranoia; Pt = Psychasthenia; Sc = Schizophrenia; Ma = Hypomania; Si = Social Introversion; K = Correction; L = Lie; F = Infrequency; S = Superlative Self-Presentation; FBS = Fake Bad

Table 6. **Pearson's *r* correlation coefficients of the PID-5 scales and subscales with the PSY-5 scales and the clinical and validity scales of the MMPI-2 in the clinical group (*N* = 86)**

	NEGE	INTR	AGRR	DISC	PSYC	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si	K	F	L	S	FBS
NEGATIVE AFFECTIVITY	0.76	0.34	0.23	0.25	0.46	0.61	0.55	0.29	0.66	0.19	0.58	0.74	0.77	0.53	0.51	-0.68	0.41	-0.40	-0.72	0.49
DETACHMENT	0.60	0.57	0.00	-0.03	0.41	0.55	0.64	0.25	0.58	0.09	0.49	0.70	0.70	0.21	0.65	-0.53	0.42	-0.25	-0.51	0.55
ANTAGONISM	0.41	-0.09	0.44	0.59	0.26	0.19	0.04	0.05	0.33	-0.04	0.24	0.31	0.42	0.55	0.05	-0.42	0.14	-0.47	-0.49	-0.03
DISINHIBITION	0.41	0.11	0.27	0.36	0.25	0.26	0.18	0.08	0.39	-0.08	0.34	0.38	0.46	0.40	0.22	-0.29	0.30	-0.23	-0.35	0.19
PSYCHOTICISM	0.49	0.18	0.29	0.28	0.62	0.56	0.34	0.32	0.55	0.04	0.55	0.56	0.70	0.56	0.25	-0.55	0.54	-0.34	-0.52	0.41
Emotional lability	0.57	0.13	0.33	0.21	0.38	0.45	0.34	0.22	0.50	0.21	0.50	0.53	0.57	0.51	0.24	-0.52	0.31	-0.29	-0.54	0.35
Anxiousness	0.66	0.44	0.06	-0.07	0.37	0.62	0.67	0.33	0.53	0.35	0.51	0.69	0.65	0.31	0.53	-0.56	0.32	-0.29	-0.58	0.57
Separation insecurity	0.46	0.09	0.11	0.30	0.28	0.32	0.27	0.21	0.35	0.06	0.44	0.43	0.42	0.37	0.24	-0.37	0.22	-0.21	-0.45	0.26
Submissiveness	0.42	0.25	-0.05	-0.06	0.03	0.26	0.32	-0.01	0.34	0.13	0.16	0.40	0.41	0.11	0.41	-0.34	0.18	-0.30	-0.30	0.26
Perseveration	0.55	0.18	0.15	0.28	0.32	0.42	0.33	0.18	0.50	0.08	0.32	0.52	0.59	0.47	0.32	-0.57	0.26	-0.42	-0.60	0.24
Hostility	0.58	0.07	0.50	0.54	0.32	0.34	0.22	0.14	0.40	-0.02	0.30	0.44	0.47	0.52	0.23	-0.50	0.20	-0.42	-0.58	0.12
Depressivity	0.64	0.45	0.08	0.10	0.38	0.59	0.60	0.32	0.64	0.18	0.51	0.73	0.73	0.38	0.55	-0.56	0.41	-0.33	-0.57	0.56
Suspiciousness	0.59	0.36	0.19	0.12	0.63	0.53	0.46	0.15	0.55	0.05	0.62	0.58	0.67	0.36	0.49	-0.61	0.53	-0.16	-0.60	0.50
Restricted affectivity	0.20	0.19	0.04	0.02	0.17	0.18	0.26	0.07	0.20	-0.03	0.12	0.26	0.26	0.04	0.25	-0.21	0.13	-0.17	-0.20	0.20
Withdrawal	0.46	0.59	-0.07	-0.09	0.28	0.39	0.52	0.13	0.37	-0.04	0.35	0.54	0.51	0.02	0.61	-0.39	0.30	-0.15	-0.37	0.38
Intimacy avoidance	0.17	0.30	-0.13	-0.31	0.08	0.14	0.26	0.04	0.12	0.04	0.12	0.23	0.21	-0.12	0.34	-0.14	0.17	0.04	-0.06	0.20

table continued on the next page

Anhedonia	0.43	0.60	-0.17	-0.07	0.23	0.43	0.62	0.31	0.52	0.09	0.35	0.57	0.53	0.07	0.55	-0.30	0.27	-0.24	-0.31	0.47
Manipulativeness	0.15	-0.25	0.44	0.46	0.12	0.03	-0.18	-0.06	0.17	-0.13	0.10	0.10	0.21	0.46	-0.14	-0.25	0.03	-0.39	-0.32	-0.16
Deceitfulness	0.31	-0.09	0.35	0.52	0.20	0.11	-0.05	-0.01	0.28	-0.06	0.15	0.21	0.32	0.43	0.00	-0.34	0.12	-0.37	-0.39	-0.09
Grandiosity	0.11	-0.20	0.45	0.36	0.27	0.12	-0.02	0.06	0.14	-0.05	0.22	0.12	0.25	0.45	-0.14	-0.25	0.10	-0.25	-0.28	-0.02
Attention seeking	0.22	-0.19	0.25	0.43	0.03	0.04	-0.07	0.03	0.13	0.07	0.09	0.11	0.19	0.38	-0.07	-0.21	-0.01	-0.33	-0.28	-0.09
Callousness	0.46	0.10	0.23	0.46	0.30	0.22	0.19	0.06	0.39	-0.05	0.27	0.39	0.46	0.43	0.24	-0.39	0.21	-0.47	-0.45	0.04
Irresponsibility	0.46	0.26	0.20	0.31	0.24	0.38	0.32	0.24	0.43	0.01	0.34	0.49	0.53	0.29	0.32	-0.31	0.32	-0.39	-0.41	0.28
Impulsivity	0.57	0.24	0.22	0.32	0.31	0.22	0.24	0.03	0.52	0.11	0.41	0.43	0.49	0.39	0.29	-0.41	0.29	-0.15	-0.45	0.12
Distractibility	0.52	0.42	0.06	0.10	0.35	0.51	0.56	0.32	0.50	0.06	0.43	0.60	0.60	0.27	0.50	-0.41	0.37	-0.35	-0.46	0.43
Risk taking	0.10	-0.27	0.33	0.40	0.15	0.02	-0.19	-0.14	0.13	-0.20	0.12	0.03	0.17	0.43	-0.14	-0.16	0.17	-0.08	-0.19	-0.08
Rigid perfectionism	0.27	0.06	0.11	0.16	0.25	0.27	0.19	0.09	0.29	0.09	0.21	0.25	0.32	0.29	0.11	-0.36	0.23	-0.23	-0.38	0.07
Unusual beliefs and experiences	0.28	0.03	0.37	0.27	0.62	0.37	0.10	0.22	0.39	0.02	0.47	0.31	0.49	0.49	0.06	-0.41	0.44	-0.21	-0.39	0.22
Eccentricity	0.43	0.19	0.16	0.24	0.46	0.50	0.32	0.22	0.51	0.04	0.47	0.53	0.62	0.48	0.26	-0.47	0.43	-0.31	-0.47	0.37
Cognitive and perceptual dysregulation	0.52	0.20	0.30	0.23	0.59	0.56	0.41	0.39	0.51	0.05	0.51	0.58	0.70	0.50	0.29	-0.54	0.55	-0.35	-0.48	0.45

Correlation coefficients higher than 0.18 are significant at $p < 0.05$ (one-tailed significance). For abbreviated names of the scales, see Table 5.

Discussion

The alternative hybrid system of personality disorder diagnosis proposed in Section III of the DSM-5 constitutes a promising attempt to overcome the limitations of categorical diagnosis, integrate the categorical and dimensional diagnostic approaches, and bridge the gap between studies on normal and abnormal personality. The central element of this system, a model of pathological personality traits operationalized in the PID-5, has already substantially delivered on this promise. On the one hand, it has revealed a consistent pattern of correlations with the FFM, the predominant psychological model of normal personality [see, e.g.,16–19]; the same has also been found for the Polish adaptation of the PID-5 [6]. On the other hand, the DSM-5 model corresponds to the five dimensions of personality psychopathology conceptualized in the PSY-5, exhibits a consistent pattern of correlations with the clinical scales of the MMPI-2, and differentiates between clinical (diagnosed with personality disorders) and non-clinical groups; this was corroborated in the current study, in which the PID-5 (along with the underlying DSM-5 model) was also demonstrated to be superior in terms of scale reliability and discriminant capacity with respect to the PSY-5 scales and the clinical scales of the MMPI-2. Moreover, as compared to the FFM, the new DSM-5 model generates more accurate predictions concerning all the personality pathology categories (all ten categories recognized in the DSM-IV-TR [6]). In our previous study, the highest diagnostic power among the DSM-5 trait facets was found for Anxiousness, Anhedonia, Withdrawal, Hostility, Rigid perfectionism, and Cognitive and perceptual dysregulation [6].

The above results indicate both the scientific value of the DSM-5 model and the validity of the PID-5 as its operationalization. The Polish adaptation of the PID-5 exhibited good reliability (higher in clinical samples) and satisfactory validity, including factor validity [6]. Our results are consistent with those reported both for the original version [4] and for adaptations in other languages, such as Dutch [20], German [21] and Italian [22]. The vast majority of those studies verified the PID-5 reliability as well as its structural, convergent and discriminant validity both in the clinical samples [e.g., 19–21, 23] and in non-clinical ones [e.g., 17, 22, 24, 25]. These data demonstrate the PID-5 to be a satisfactory operationalization of the pathological personality trait model, and at the same time corroborate the scientific value of the DSM-5 model itself.

The above research results do not alter the fact that both the DSM-5 hybrid diagnostic system and containing in it the personality pathological traits model are recent proposals which require continued studies concerning their further empirical verification and clinical utility. It cannot be excluded that future studies may lead to the modification of some of their elements, such as trait elevation thresholds [cf. 1, 11, 26], pathological trait patterns assigned to specific personality disorders [cf. 6, 25–28],

the distribution of trait facets across domains [cf. 4, 7], or even the number of facets [cf. 10, 29]. Nevertheless, already at this early stage the DSM-5 diagnostic system and dimensional trait model constitute a very interesting theoretically and empirically substantiated proposal which deserves the attention of clinicians.

In this practical context, it should be noted that the pathological trait model can be used not only to diagnose specific personality disorders based on the presence of certain patterns of elevated trait facets (so-called hybrid diagnosis), but also to recognize conditions belonging to the personality disorder – trait specified (PD–TS) category described in Section III of the DSM-5. This category is particularly interesting in that it may capture diverse "forms" of personality disorders arising from extreme levels of individual trait facets or different configurations thereof. Even if the patient is diagnosed with a specific disorder, the presence of additional (not required by the diagnostic criteria) elevated trait facets may be used as a specifier for that disorder, affording a more comprehensive clinical picture [1]. The trait model makes it also possible to describe mixed or atypical cases of personality disorder.

The DSM-5 [1] recommends assessment of pathological personality traits also when diagnosing mental disorders other than personality disorders, including subthreshold presentations (in which not all requirements of Criteria A and B are fulfilled). Indeed, a pathological trait profile offers a wealth of information which may be very useful in prognosticating and planning therapy for a wide variety of mental disorders. In conjunction with other variables (such as family history, suicide attempts, and medication use) such a profile may significantly contribute to general clinical assessment (e.g., determination of the risk of violence or self-harm) and facilitate recommendations and decisions concerning therapy choice.

A pathological trait profile emerging from the PID-5 enables a comprehensive, multidimensional description of an individual's personality (disorder) structure. According to the APA [1], the clinical utility of the dimensional, hierarchical pathological trait model described in Section III of the DSM-5 consists in simultaneous evaluation of the five broad personality domains rather than focusing on the identification of only one, best-fitting diagnostic label. Such a clinical approach is evocative of a comprehensive assessment procedure in clinical medicine, wherein a patient complaining of a symptom specific to one organism system is nevertheless examined for disturbances in other systems to make sure that no diagnosis-salient factor is overlooked, which could otherwise compromise treatment outcomes. In a similar way, under the DSM-5 system, a preliminary evaluation of the five broad trait domains – universal dimensions comprehensively covering personality structure – is then refined by an assessment of the constituent trait facets, followed by a description of those domains and facets which have been found to be elevated. Under certain circumstances (such as time constraint) a general assessment restricted to the five trait domains is acceptable (to that end, the

authors of the PID-5 developed an abridged version with 25 items). This option may be exercised in situations where only a general description of the patient's personality is required. However, if a diagnosis of the patient's personality problems is to enable their therapy, a detailed clinical assessment of all personality domains and facets should be conducted, preferably not only via self-report, but also informant-report (in the latter case, a person who knows the patient well, e.g., the spouse, is asked to complete an appropriate version of the PID-5 for the patient). Indeed, it is worth noting that the PID-5 is not only self-report measure, but it possesses also the other informant version (*informant-report*), although to the date the latter was less tested empirically [cf. 1, 30].

Crucially, the pathological personality trait model can be used to evaluate individuals both without and with personality (or other mental) disorders. Along these lines, it has been suggested that the model might encompass not only dysfunctional, but also adaptive aspects of personality, which are regarded as valuable resources. Low levels of a pathological trait domain or facet maybe translated into the presence of, e.g., extraversion, emotional stability, agreeableness, conscientiousness, or lucidity of thinking, possibly alleviating the consequences of a personality or other mental disorder and facilitating the process of coping and recovery, also in the case of trauma or somatic symptoms [1].

The application of the new DSM-5 pathological trait model with a view to enhancing clinical diagnosis, prognosis, and therapy planning in all categories of mental disorders requires yet another element. While the model underpins Criterion B in the alternative DSM-5 diagnostic system, in clinical settings it must still be used in conjunction with Criterion A, which evaluates personality functioning in the sphere of the self (identity and self-direction) and in the sphere of interpersonal relationships (empathy and intimacy), using the Level of Personality Functioning Scale (LPFS [1, 3]). Albeit preliminary, this evaluation is fundamental in the diagnostic procedure, with personality functioning impairment thought to lie at the core of personality psychopathology. Therefore, a comprehensive assessment of an individual's personality and a successful deployment of entire DSM-5 hybrid diagnostic system is possible only by combining personality functioning evaluation (LPFS) with measurement of pathological trait intensities (PID-5). Efforts to translate the LPFS scale into Polish are already underway and are scheduled to be soon finalized.

Appendix

Table A. **Measurement reliability (Cronbach's alpha) and differences between the non-clinical and clinical group in the PSY-5 scales and the clinical scales of the MMPI-2**

Specification	Non-clinical group (n = 255)			Clinical group (n = 86)			Z	p
	alfa	M	SD	M	SD	alfa		
NEGE	0.87	15.59	6.89	21.85	6.88	0.89	-6.69	0.000
INTR	0.73	12.84	4.76	18.29	6.12	0.83	-6.97	0.000
AGRR	0.64	8.62	2.99	7.80	3.34	0.67	-1.97	0.024
DISC	0.69	13.06	4.27	12.62	4.26	0.68	-0.40	0.345
PSYC	0.79	6.69	4.00	7.91	4.71	0.83	-2.07	0.019
Hs	0.85	9.38	5.85	15.97	6.26	0.85	-7.83	0.000
D	0.70	23.20	6.02	32.49	6.33	0.72	-9.85	0.000
Hy	0.67	22.11	6.01	30.37	5.32	0.57	-9.59	0.000
Pd	0.67	20.12	5.65	28.44	5.64	0.67	-9.77	0.000
Mf	0.66	27.87	6.49	31.43	5.49	0.61	-4.53	0.000
Pa	0.68	11.71	4.60	16.65	4.57	0.63	-7.86	0.000
Pt	0.91	18.09	9.63	30.00	10.25	0.93	-8.30	0.000
Sc	0.92	19.92	12.27	35.14	14.10	0.93	-8.06	0.000
Ma	0.70	19.63	5.68	20.58	5.06	0.63	-1.40	0.082
Si	0.86	30.13	9.64	39.41	10.86	0.89	-6.73	0.000
K	0.70	12.69	4.55	11.57	4.54	0.73	-2.10	0.018
F	0.88	7.27	6.83	13.30	7.69	0.84	-7.14	0.000
L	0.51	3.91	2.17	3.36	2.46	0.65	-2.34	0.010
S	0.78	20.79	7.24	17.28	8.25	0.86	-3.72	0.000
FBS	0.77	13.33	5.73	21.29	5.23	0.66	-9.61	0.000

Z – Mann-Whitney *U* test (one-tailed significance).

Abbreviations: NEGE = Negative Emotionality; INTR = Introversion; AGRR = Aggressiveness; DISC = Disconstraint; PSYC = Psychoticism; Hs = Hypochondriasis; D = Depression; Hy = Hysteria; Pd = Psychopathic Deviate; Mf = Masculinity–Femininity; Pa = Paranoia; Pt = Psychasthenia; Sc = Schizophrenia; Ma = Hypomania; Si = Social Introversion; K = Correction; L = Lie; F = Infrequency; S = Superlative Self-Presentation; FBS = Fake Bad.

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