Journal of Evidence-Based Psychotherapies,
Vol. 22, No. 2, September 2022, 115-140.

10.24193/jebp.2022.2.16

PSYCHOMETRIC PROPRIETIES OF A ROMANIAN INVENTORY (ETPDUO) DESIGNED TO ASSESS PERSONALITY DISORDERS BASED ON THE DSM-5 AND THE ICD-10: EVIDENCE FOR RELIABILITY AND VALIDITY IN NONCLINICAL SAMPLES

Ticu Constantin[1], Elena Gabriela Nicuță[1]*

[1] Department of Psychology, Faculty of Psychology and Education Sciences, Alexandru Ioan Cuza University, Toma Cozma 3, 700554 Iasi, Romania.

Abstract

The aim of the present research was to assess the psychometric proprieties of the ETPduo questionnaire (Romanian acronym for Evaluation of Personality Disorders), a new instrument designed to measure personality disorders based on two official classifying systems – the Diagnostic and Statistical Manual of Mental Disorders (fifth edition) and the International Classification of Diseases (tenth edition). In Study 1a (N = 1,536) and 1b (N = 267), we sought to evaluate the internal consistency and test-retest reliability of the ETPduo questionnaire, as well as the unidimensionality of the instrument's scales. Results showed that the scales have very good reliability and acceptable temporal stability. Confirmatory factor analyses generally indicated that the questionnaire's scales are unidimensional and very few poorly loading items were identified. In Study 2 (N = 746), we aimed to assess the construct validity of the ETPduo questionnaire, by correlating the scores on the instrument with two other measures designed to assess normal and pathological personality traits. Results were mostly in line with our expectations. The two studies suggest that ETPduo is a reliable and valid measure of personality disorders. However, further validation of the instrument on a clinical sample is required.

Keywords: Personality Inventory for DSM-5; personality disorders; Diagnostic and Statistical Manual of Mental Disorders; International Classification of Diseases.

[*] Correspondence concerning this article should be addressed to Elena Gabriela Nicuță.
E-mail: gabriela.nicuta@yahoo.com

Personality disorders (PDs) affect the lives of millions of people worldwide. Studies report relatively high rates of PDs in psychiatric outpatients (45% to 51% in the USA) (Beckwith et al., 2014) and in the general population across the Western world (Quirk et al., 2016). Recently, Winsper et al. (2020) conducted a meta-analysis of 46 studies (from 21 countries) found that the pooled prevalence of any personality disorder was 7.8%. If we take into account the co-occurrence of several PDs, undiagnosed cases and subclinical forms of PDs (mild forms), a substantial proportion of the population might be diagnosed with at least one PD or has to interact with people who have some (subclinical) form of PD.

A personality disorder is defined as a pattern of inner experience and behavior that is stable over time and markedly different from what is considered 'typical' in a given cultural context, causing significant distress or impairment for the individual (American Psychiatric Association [APA], 2013). According to the Diagnostic and Statistical Manual of Mental Disorders ([DSM-5]; APA, 2013), a PD is characterized by at least two of the following: (1) rigid, extreme, and distorted thinking patterns (cognitive domain), (2) problematic emotional responses (affective domain), (3) impulse control difficulties (behavior), and (4) significant interpersonal problems (interpersonal functioning domain). This set of features makes it difficult for people with PDs to properly function in everyday life, for instance – at work or in interpersonal contexts.

Almost a hundred years ago, Kurt Schneider (1923) introduced the first complete system that classified PDs. Schneider's proposed model described ten types of psychopathic personalities: hyperthymic, depressive, insecure (with two subtypes: sensitives and anankasts), fanatical, attention seeking, labile, explosive, affectionless, weak-willed, and asthenic. Schneider's initial contribution influenced subsequent diagnostic systems. With time, two official classifications of PDs were developed. Both the International Classification of Diseases (ICD) (maintained by the World Health Organization [WHO]) and the DSM (developed by the APA) include criteria for diagnosing PDs. Although the criteria by which PDs are defined in DSM-5 (APA, 2013) and ICD-10 (WHO, 1993) seem to differ, at a closer look one can observe that they are to a large extent similar. First, the aforementioned classification systems share five PDs, which were given identical names in both the ICD-10 and the DSM-5: paranoid PD, schizoid PD, histrionic PD, dependent PD, and borderline PD. Three conditions are named differently, but have a similar content: antisocial PD (DSM) vs. dissocial PD (ICD); avoidant PD (DSM) vs. anxious PD (ICD); obsessive-compulsive PD (DSM) vs. anankast PD (ICD). However, each of the two systems also contains three distinct PDs: DSM contains schizotypal PD and narcissistic PD, and ICD includes impulsive PD - along with borderline PD within the emotionally unstable PD.

Treating people with PDs is essential, as this mental health condition is linked to negative outcomes for both the patients themselves, as well as those around them. For instance, people with PDs are more likely to have interpersonal difficulties (e.g., Haliczer et al., 2020; Johnson et al., 2000; Overholser, 1996). Having a PD is also associated with being unemployed, having problems with colleagues and supervisors, as well as being unable to attain full productivity at work (Ettner et al., 2011; Hengartner et al., 2014; Lim et al., 2000). People with PDs are at a greater risk of divorce, having marital problems and lower levels of marital satisfaction (Disney et al., 2012; Kasalova et al., 2018; Lavner et al., 2015; South et al., 2008). They also report impaired physical health (Dokucu & Cloninger, 2019). Consequently, it is rather unsurprising that people with PDs generally have lower quality of life (Cramer et al., 2006; Ishak et al., 2013; Kavanagh et al., 2020).

A correct diagnosis is the first step towards providing treatment for people who have a PD. There are four common methods to assess personality disorders: the diagnostic interviews, rating instruments (administered by clinicians), self-report questionnaires, and other-report questionnaires (Furnham et al., 2014; Schotte, 2000). Among these, the most frequently used are the semi-structured interviews and the self-report inventories **(**Furnham et al., 2014; Schotte, 2000; Widiger & Boyd, 2009). In terms of complexity or the depth of the evaluation, three types of PD measures are available: multidimensional measures of multiple PDs (10 – 15 disorders measured by the same instrument), measures for one specific personality disorder (e.g., narcissistic PD, paranoid PD), or instruments designed to assess the subtypes of a specific personality disorder (e.g., communal and agentic narcissism). Furnham et al. (2014) examined extant instruments and concluded that they are numerous and can serve various purposes, from general screening to clinical diagnosis. These measures or methods also vary in terms of necessary time, as well as context (some are meant to be used in clinical practice, whereas others are more useful for counseling purposes).

In Romania, several questionnaires are currently used for the assessment of PDs. For example, the OMNI Personality Inventory (OMNI-IV) is a 375-item self-report questionnaire which was initially developed to measure both normal and abnormal personality traits (Loranger, 2001). It was translated into Romanian and validated on the Romanian population by Ciuca et al. (2016). Only 210 items were retained and the instrument can be used to assess ten personality disorders based on Axis II comprised by the fourth edition of the DSM (Ciuca et al., 2016). Another questionnaire used in Romania is the Dimensional Assessment of Personality Pathology Questionnaire – Basic Questionnaire (DAPP-BQ) (Livesley & Jackson, 2009). The DAPP-BQ questionnaire is not focused on the direct assessment of PDs. Rather, the instrument evaluates 18 clinically relevant personality traits. Some other tools for assessing various psychopathological traits are also available. For example, the Personality Inventory for DSM-5 (PID-5) (Krueger et al., 2012) has been recently translated and adapted into Romanian (Constantin et al., 2021) and could be used to

evaluate 25 maladaptive personality dimensions, in a quantitative manner, in contrast to the categorical approach of DSM model (Krueger & Hobbs, 2020).

The instruments presented above are consistent with the DSM (which is predominantly used in the United States of America) and not with the ICD, which is used in Romania and other European countries. Therefore, there is a need for an instrument that takes into consideration both perspectives and can be readily used by Romanian practitioners. Also, for practical purposes, a shorter scale (including fewer items) is called for. Consequently, we decided to develop the ETPduo questionnaire (Romanian acronym for Assessment of Personality Disorders Questionnaire), which provides researchers and practitioners with a psychological profile which is compatible with both the ICD-10 and the DSM-5. Moreover, it contains two additional scales which were designed for the assessment of depression and anxiety symptoms. Although anxiety and depression are not PDs, they are important indicators of one's degree of psychological dysfunction and are often associated with PDs (APA, 2013). Having practitioners' needs in mind, we sought to design an instrument that could provide them with a comprehensive report of their clients'/patients' mental health state. In the two studies described below, we assess the psychometric proprieties of this new instrument. The aim of Study 1a was to evaluate the internal consistency as well as to test the unidimensionality of the instrument's scales by means of confirmatory factor analyses (CFAs). In Study 2b, the test-retest reliability of the ETPduo questionnaire was evaluated. In Study 2, we aimed to assess the construct validity of the ETPduo questionnaire, by correlating the scores on the instrument with two other measures designed to assess normal and pathological personality traits. We compare our results with extant work (e.g., Widiger & Mullins-Sweatt, 2009) indicating that PDs can be described based on the five-factor model of personality. Furthermore, we evaluate our results against the Alternative Model of Personality Disorders (AMPD) put forward in the DSM-5 (APA, 2013). The expected relations are presented in Table 1.

Table 1. Personality disorders included in the DSM-5
from the perspective of normal and maladaptive personality traits

Personality Disorder	Description from the perspective of the five-factor model of personality	Alternative Model of Personality Disorders
Paranoid	**High:** angry hostility **Low:** warmth, gregariousness, actions, values, trust, straightforwardness, compliance, tender-mindedness	
Schizoid	**Low:** warmth, gregariousness, activity, excitement-seeking, positive emotionality, feelings, actions	
Schizotypal	**High:** anxiousness, self-consciousness, ideas **Low:** warmth, gregariousness, positive emotionality, trust, order	cognitive and perceptual dysregulation, unusual beliefs and experiences, eccentricity, restricted affectivity, withdrawal, suspiciousness

Personality Disorder	Description from the perspective of the five-factor model of personality	Alternative Model of Personality Disorders
Antisocial	**High:** angry hostility, impulsivity, gregariousness, assertiveness, activity, excitement seeking, actions **Low:** all facets of agreeableness, anxiousness, self-consciousness, vulnerability, dutifulness, self-discipline, deliberation	manipulativeness, callousness, deceitfulness, hostility, risk taking, impulsivity, irresponsibility
Borderline	**High:** all facets of neuroticism, feelings, actions **Low:** trust, compliance, deliberation	emotional lability, anxiousness, separation insecurity, depressivity, impulsivity, risk taking, hostility
Histrionic	**High:** impulsivity, gregariousness, activity, excitement seeking, positive emotionality, fantasy, feelings, actions, trust **Low:** self-consciousness, self-discipline, deliberation	
Narcissistic	**High:** angry hostility, assertiveness, excitement seeking, actions **Low:** all facets of agreeableness, self-consciousness, warmth, feelings	grandiosity, attention seeking
Avoidant	**High:** anxiousness, self-consciousness, vulnerability, modesty **Low:** gregariousness, assertiveness, excitement-seeking, actions	anxiousness, withdrawal, anhedonia, intimacy avoidance
Dependent	**High:** anxiousness, self-consciousness, vulnerability, warmth, trust, compliance, modesty **Low:** assertiveness, competence	
Obsessive-compulsive	**High:** all facets of conscientiousness, anxiousness **Low:** impulsivity, excitement seeking, feelings, actions, ideas, values	rigid perfectionism, perseveration, intimacy avoidance, restricted affectivity

Note. Based on Widiger and Mullins-Sweatt (2009) and the APA (2013)

Study 1a

Participants

A number of 1,536 adults participated in the study (50.1 % women). They were aged between 18 and 74 years old, with a mean age of 36.25 (*SD* = 12.77). In terms of education, 4% of the participants completed primary or secondary lower education, 11.9% graduated from professional and technical education programs, 27.1% completed high-school, 6.1% attended post-secondary non-tertiary education, 26.8% had a Bachelor's degree, and 10.4% had a Master's degree or above. The rest of the participants (13.8%) did not report their education level.

Instrument

The ETPduo Personality Inventory is an instrument designed to assess personality disorders based on two competing models in diagnosis – the DSM-5, as well as ICD-10. The questionnaire was developed between 2016 and 2021. Three versions of the questionnaire (with varying number of items, item wordings etc.) were evaluated and refined before arriving at the final version, presented in this paper (Constantin, 2021a, b). For more information about the stages in the construction of the ETPduo questionnaire, please refer to the Supplementary material accompanying this article. The ETPduo questionnaire measures seven personality disorders included in both the DSM-5 and the ICD-10 (paranoid, schizoid, histrionic, dependent, borderline, antisocial/dissocial, avoidant/anxious, and obsessive-compulsive/ anankast PD), as well as two personality disorders that are only defined by the DSM-5 (narcissistic and schizotypal PD) or by the ICD-10 (impulsive PD). In addition, the inventory contains two additional scales, one for depression and one for anxiety. Examinees are asked to carefully read each of the statements and select the response that best describes them (*True* [2], *False* [0], or *?* [1] – if they cannot decide). A total score is computed on each scale, with possible scores ranging from 0 to 20.[*] The questionnaire is available on the PsihoProfile platform, following the link http://www.psihoprofile.ro/Content/Questionnaires/1/44/ChestionarETPv5_2020.pdf.

Procedure

For Studies 1a and 2, participants were recruited by psychologists and mental health professionals who use the PsihoProfile platform (http://www.psihoprofile.ro) to perform psychological assessments. These professionals recruited some of their own clients as participants in this research. To obtain a homogenous sample, only adults with no history of a mental health diagnosis were eligible to participate. Participants had two options: they could either (1) fill out only the ETPduo questionnaire or (2) fill out the ETPduo questionnaire, as well as the Big Five Plus and PID-5 questionnaires (used in Study 2). Those who agreed to take part in the study filled out the questionnaire(s) either on the computer or in a paper-and-pencil format. For those participants who opted for the paper-and-pencil format, the answer sheets were manually entered into the platform by the psychologist. Data collection started in September 2020 and ended one year later. We did not plan on plan on having a

[*] The ETPduo questionnaire assesses PDs as continuous dimensions, although the DSM-5/ICD-10 models are categorical. Similar to other questionnaires assessing PDs (e.g., OMNI-IV), the ETPduo inventory aims to evaluate one's tendencies towards PDs. The higher the score, the more accentuated one's predisposition towards that particular PD is. As there are no pure PDs but combinations of symptoms/tendencies towards different PDs, the dimensional approach was preferred to capture these tendencies/combinations. In a study which is in preparation, the ETPduo was administered to patients who received a PD diagnosis based on a clinical interview. The results of this study will allow us to establish cut-off scores for a categorical diagnosis.

specific sample size – instead, the final sample consisted of all eligible participants who filled out the questionnaire during this year. A total of 2,282 participants were recruited. Out of these, 1,536 participated in Study 1a (only having filled out the ETPduo questionnaire). The rest of them (746 participants) filled out all three questionnaires, and the resulting data were used in Study 2.

Analytic strategy

Analyses were performed with IBM SPSS Statistics 23.0 and R (Version 4.1.2; R Core Team, 2021). The lavaan package (Version 0.6.9; Rosseel, 2012) was used to conduct the CFAs. Seeing that the indicators are ordinal, we chose the WLSM estimator. The following indices were used to evaluate model fit: chi-square, the Root Mean Square Error of Approximation (RMSEA) with its associated 90% confidence interval (values close to or smaller than .06 are considered acceptable), the Tucker Lewis Index (TLI), the Comparative Fit Index (CFI) (both with values ≥ .95 reflecting good fit), and the Standardized Root Mean Square Residual (SRMR) (≤ .08) (Boateng et al., 2018).

Results

Descriptive Statistics and Internal Consistency

Descriptive statistics for each of the ETPduo scales are presented in Table 2. Except for the antisocial PD and anxiety scales, skewness and excess kurtosis values indicate that the distribution of the scores is roughly symmetrical, with tails that are close to those of a normal distribution. Antisocial PD is positively skewed, indicating that most scores fall toward the lower end of the scale and few participants have a tendency toward this PD. On the contrary, the scores on the Anxiety scale are negatively skewed, meaning that participants in our sample obtained relatively high scores on this scale.

Table 2. Descriptive statistics for the 13 scales included in the ETPduo inventory (Study 1)

Scale	*M*	*SD*	Skewness	Excess kurtosis	Cronbach's alpha	Mean inter-item correlation coefficient
Paranoid	6.50	5.61	.629	-.624	.843	.350
Schizoid	6.43	4.71	.513	-.532	.739	.220
Schizotypal	5.67	4.91	.741	-.289	.792	.280
Antisocial	3.80	4.03	1.388	1.768	.768	.260
Borderline	5.87	5.46	.727	-.524	.850	.360
Histrionic	6.56	4.81	.611	-.347	.759	.240
Narcissistic	7.50	4.22	.393	-.373	.681	.180
Avoidant	6.24	5.88	.682	-.742	.872	.400
Dependent	5.60	5.19	.890	-.170	.824	.330
Obsessive-compulsive	9.13	5.01	.140	-.857	.759	.230
Impulsive	6.24	4.78	.557	-.481	.766	.250

Scale	*M*	*SD*	Skewness	Excess kurtosis	Cronbach's alpha	Mean inter-item correlation coefficient
Anxiety	7.34	6.90	.513	-1.181	.915	.520
Depression	6.32	6.48	.720	-.775	.905	.490

In order to analyze the instrument's internal consistency, Cronbach's alphas, as well as the mean inter-item correlation coefficients, were calculated (see Table 2). Except for Narcissistic PD (.681), Cronbach's alpha values were above the conventional threshold (.70), ranging between .739 for Schizoid PD and .915 for the Anxiety scale. The analysis further indicated that the internal consistency of the narcissistic PD scale could not be improved by dropping any of the items. As expected, the lowest mean inter-item correlation coefficient was for the narcissistic PD scale (.180), whereas the largest was for anxiety (.520), suggesting that the items of the latter scale might be slightly redundant.

Unidimensionality analyses

CFAs were performed for each of the 13 scales separately, in order to test unidimensionality. Results are presented in Table 3. Acceptable fit was obtained for the majority of the scales, except for histrionic, narcissistic, and obsessive-compulsive PD scales. For the histrionic PD scale, we decided to drop items 106 and 118, because of their low factor loadings (standardized estimates = .238 and .318, respectively). Three items had to be removed from the narcissistic PD scale (101, 55, 44), because of unsatisfactory factor loadings (.163, .223, and .225, respectively). Finally, two items (i.e., 26, 116) were dropped from the obsessive-compulsive scale due to their low factor loadings (.171 and .308, respectively). The re-specification resulted in a better fit of the models, as can be seen in the Table 3.

Table 3. Confirmatory factor analysis results for the 13 scales included in the ETPduo

Scale	Chi-square	*df*	*p* Chi-square	RMSEA (90% CI)	*p* RMSEA	TLI	CFI	SRMR
Paranoid	171.20	34	<.001	.051 (.044; .059)	> .05	.97	.98	.04
Schizoid	208.18	34	<.001	.058 (.050; .065)	.04	.93	.95	.05
Schizotypal	91.70	34	<.001	.033 (.025; .042)	> .05	.98	.98	.03
Antisocial	100.52	34	<.001	.036 (.028; .044)	> .05	.96	.97	.04
Borderline	173.99	34	<.001	.052 (.044; .060)	> .05	.97	.98	.04
Histrionic	253.27	34	<.001	.065 (.057; .072)	.001	.92	.94	.05
after re-specification (removing items 106, 118)	113.91	19	<.001	.057 (.047; .067)	> .05	.95	.97	.04
Narcissistic	324.53	34	<.001	.075 (.065; .082)	< .001	.89	.85	.06
after re-specification (removing items 101, 55, 44)	85.14	13	<.001	.060 (.048; .073)	> .05	.94	.96	.04
Avoidant	154.86	34	<.001	.048 (.041; .056)	> .05	.98	.98	.04
Dependent	78.24	34	<.001	.029 (.021; .038)	> .05	.99	.99	.03

Scale	Chi-square	*df*	*p* Chi-square	RMSEA (90% CI)	*p* RMSEA	TLI	CFI	SRMR
Obsessive-compulsive	297.67	34	<.001	.071 (.064; .079)	< .001	.92	.94	.05
after re-specification (removing items 26, 116)	81.17	19	<.001	.046 (.036; .057)	> .05	.98	.97	.03
Impulsive	188.85	34	<.001	.054 (.047; .062)	> .05	.95	.96	.04
Anxiety	73.40	34	<.001	.027 (.019; .036)	> .05	.99	.99	.02
Depression	88.82	34	<.001	.032 (.024; .041)	> .05	.99	.99	.03

Study 1b

Participants

The initial sample consisted of 861 participants (55.1 % women), who filled out the ETPduo questionnaire during October or November 2021. Out of these, 267 (64% women) also completed the questionnaire after a period of at least 7 months (the retest took place in April and May 2022). Participants in the final sample were aged between 21 and 73 years (M = 37.96, SD = 12.24). Participants were recruited by Psychology undergraduates in exchange for course credit.

Analytic strategy

Test-retest reliability was evaluated using intraclass correlation coefficients (ICCs) (model: two-way mixed effects; definition: absolute agreement, type: single measurement) (Koo & Li, 2016). According to Koo & Li (2016), ICC values < .50 are indicative of poor reliability, values between .50 and .75 reflect moderate levels of reliability, whereas good and excellent reliability is indicated by values over .75 or .90, respectively.

Results

Table 4 presents the results obtained in Study 1b. Ranging between .531 for antisocial PD and .753 for anxiety, the ICC values indicate moderate and good levels of test-retest reliability. Moreover, ICC values for 10 out of the 13 scales were above .60.

Table 4. Test-retest reliability for the ETPduo questionnaire

Scale	T1 *M (SD)*	T2 *M (SD)*	ICC (95% CI)
Paranoid	8.38 (5.83)	8.08 (5.77)	.674 (.603; .735)
Schizoid	7.77 (4.37)	7.56 (4.38)	.637 (.560; .703)
Schizotypal	7.18 (4.47)	6.73 (4.80)	.620 (.540; .689)
Antisocial	4.67 (3.64)	4.56 (3.70)	.531 (.436; .612)
Borderline	7.12 (5.51)	6.59 (5.33)	.719 (.655; .772)
Histrionic	8.62 (4.22)	8.30 (4.53)	.628 (.550; .696)

Scale	T1 *M (SD)*	T2 *M (SD)*	ICC (95% CI)
Narcissistic	8.99 (4.07)	8.84 (4.03)	.614 (.534; .684)
Avoidant	8.04 (6.00)	7.96 (5.99)	.734 (.674; .785)
Dependent	6.15 (4.84)	5.82 (4.95)	.696 (.628; .753)
Obsessive-compulsive	11.92 (4.68)	11.34 (4.91)	.593 (.510; .666)
Impulsive	7.62 (4.23)	7.30 (4.19)	.579 (.494; .654)
Anxiety	8.78 (6.76)	8.64 (6.84)	.753 (.696; .801)
Depression	6.49 (6.16)	6.35 (6.36)	.744 (.685; .793)

Discussion

The results of Study 1 a&b suggest that the ETPduo questionnaire is a reliable instrument. Internal consistency values were very good for all scales, except for narcissism, for which Cronbach's alpha was nonetheless adequate. Test-retest reliability could only be described as moderate following Koo & Li's (2016) guidelines. However, when interpreting the ICC values, the reader should also take into consideration the amount of time that passed between the two measurements. Although lower, our results are still comparable to those obtained by Melley et al. (2002), who assessed the temporal stability of the Schedule for Nonadaptive and Adaptive Personality (SNAP). For a nine-month interval between the two screenings, the authors reported test-retest correlations coefficients ranging between .58 and .81. In a study conducted by Maruta et al. (2006), the authors report test-retest correlations coefficients ranging between .50 and .69 for the Japanese version of the DAPP-BQ (over a 3-week period). We therefore conclude that the ETPduo has adequate test-retest reliability. Higher ICC values might have been obtained if the interval between the two assessments had been smaller.

The 13 models that we tested through CFA, only three needed to be re-specified, by removing three weak items from the narcissistic PD scales, and two items from the histrionic and obsessive-compulsive PD scales, respectively. The items that had low factor loadings in the narcissistic PD scale seem to be more likely to evoke socially desirable responses (item 101: *I impress other people with the expensive, valuable goods that I own*; item 55: *Sometimes I am arrogant to those inferior to me*; item 44: *In order to get what I want, I make use of other people's enthusiasm and trust*). In fact, a frequency analysis indicated that a vast majority of the participants chose the *False* response option for items 101 and 55 (87.8% and 71.3%, respectively). Items that exhibited good factor loadings appear to be less affected by the social desirability bias (e.g., item 79: *Those who know me find me very interesting and attractive* – only 40.7% of the participants disagreed with this statement). Therefore, items 101, 55, and 44 should be revised in order to decrease respondents' tendency to present themselves in a better light. The two items that were removed in order to improve model fit for the histrionic PD scale were item 106 *(I like to surprise others with the eccentric, uncommon way I dress*) and item 118 (*I tend to be the life of the party*). Item 106 was initially included to capture the fact that the histrionic personality wishes to attract other people's attention, by doing

whatever it takes to be noticed (such as choosing eccentric pieces of clothing). However, it seems that item 106 is not a very good operationalization of the histrionic PD. This item could be revised to illustrate the tendency of the histrionic personality to dress provocatively or in a way which is inappropriately sexual for a given context. On the other hand, item 118 is a good description of the histrionic PD. It could be rephrased to emphasize the fact that the person strongly desires to be considered very funny or entertaining during social gatherings. Lastly, the analysis suggested that two items from the obsessive-compulsive PD should be reconsidered: item 26 (*People around me criticize me for being an overly conscientious person*) and item 116 (*I always plan my activities well*). Item 26 might be problematic because it makes reference to other people's perception of the respondent. Moreover, people have very different ways of defining conscientiousness. Therefore, this item should be rephrased to include a description of a specific behavior that is excessively scrupulous. Item 116 captures a completely adaptive behavior (planning one's activities) and should be reworded to indicate that the preparations are extremely meticulous and deviations from what was planned are considered unacceptable.

Study 2

Participants

The sample included 746 volunteers (56.2% women). They were aged between 18 and 73, with a mean age of 35.31 (*SD* = 11.64). Data about the education level was collected from the majority of our participants (86.3%). Out of these, 2.4% were primary or secondary lower education graduates (grades 1-8), 3.9% attended professional and technical education programs, 21.6% completed high school, 5.5% graduated from post-secondary non-tertiary education institutions, 30.3% had a Bachelor's degree, whereas 22.7% had a Master's degree or above.

Instruments

Participants filled out the ETPduo questionnaire (described in detail in Study 1), as well as the Big Five Plus questionnaire (Constantin et al., 2010) and the Personality Inventory for DSM-5 (Krueger et al., 2012).

The Big Five Plus questionnaire (Constantin et al., 2010) is a self-report measure that can be used to assess the five broad personality traits described by the Big Five theory (i.e., neuroticism, extraversion, agreeableness, conscientiousness, and openness), as well as their subordinate facets (six facets per domain, 30 in total). The questionnaire consists of 240 dichotomous items, 48 for each of the five personality domains, and eight for each of the 30 subordinate dimensions. Participants are asked to choose one of the two statements that best describes them (e.g., *A quiet pace of life: (a) gets me bored; (b) makes me feel comfortable*). The

answer options were designed to be equivalent in terms of social desirability. The instrument was developed and validated on the Romanian population and was shown to have good internal consistency and test-retest reliability (Constantin et al., 2010).

The Personality Inventory for DSM-5 (Krueger et al., 2012) is a self-report questionnaire that measures 25 maladaptive personality traits which are grouped into five higher order domains (i.e., negative affectivity, detachment, antagonism, disinhibition, and psychoticism) mirroring the Big Five personality traits. Participants are instructed to read each of the 220 items and to rate their response on a 4-point scale, where 0 = *Very false or Often false*; 4 = *Very true or Often true* (e.g., *I snap at people when they do little things that irritate me*). The questionnaire was shown to have a replicable factor structure, good convergent and discriminant validity, as well as internal consistency at both the trait and domain levels (Al-Dajani et al., 2016). The PID-5 was also recently translated into Romanian and validated on a Romanian community sample by Constantin et al. (2021).

Results

Preliminary analyses

Descriptive statistics and internal consistency coefficients for each of the three instruments used in Study 2 are presented in Tables 5, 6, and 7. Replicating the results of Study 1, very good internal consistency coefficients were obtained for all of the ETPduo scales, except for the narcissistic PD scale, which was however very close to the established threshold for what is considered an acceptable α coefficient. Very good internal consistencies were obtained on the Big Five domains, as can be seen in Table 6. However, some facets measured with Big Five Plus inventory (e.g., altruism, dutifulness, values, ideas) had problematic internal consistencies. The analyses showed that eliminating items would not have improved the scales' α. Therefore, we conducted all of the other analyses reported below using the original scales including all of the items. However, we will interpret results with caution, seeing that an instrument's reliability is a prerequisite for its validity. As presented in Table 7, the PID-5 demonstrated good internal consistency, with Cronbach's alphas ranging from .734 for restricted affectivity to .943 for eccentricity.

Table 5. Descriptive statistics and internal consistency coefficients for the ETPduo questionnaire in Study 2

Scale	*M*	*SD*	Cronbach's alpha
Paranoid	7.02	5.56	.838
Schizoid	6.91	4.47	.711
Schizotypal	6.14	4.92	.790
Antisocial	4.72	4.04	.743
Borderline	7.13	5.62	.844
Histrionic	7.09	4.52	.727

Scale	*M*	*SD*	Cronbach's alpha
Narcissistic	7.35	4.06	.697
Avoidant	7.85	5.98	.866
Dependent	6.74	5.50	.835
Obsessive-compulsive	9.95	4.84	.729
Impulsive	6.91	4.81	.765
Anxiety	8.33	6.91	.915
Depression	7.08	6.62	.908

Table 6. Descriptive statistics and internal consistency coefficients for the Big Five Plus Inventory

Big Five Plus scale	*M*	*SD*	Cronbach's alpha
Neuroticism	22.04	10.94	.925
Anxiousness	3.51	2.59	.819
Angry hostility	3.81	2.71	.852
Depressiveness	3.52	2.48	.801
Self-consciousness	4.10	2.35	.744
Impulsivity	3.49	2.19	.689
Vulnerability	3.58	2.38	.787
Extraversion	23.33	10.17	.909
Warmth	4.44	2.46	.780
Gregariousness	3.64	2.47	.790
Assertiveness	3.78	2.27	.719
Activity	4.24	2.17	.666
Excitement seeking	3.16	2.42	.789
Positive emotion	4.05	2.21	.699
Agreeableness	29.50	7.10	.808
Trust	4.44	2.24	.700
Straightforwardness	5.62	1.94	.654
Altruism	4.88	1.78	.568
Compliance	4.89	2.11	.687
Modesty	4.62	2.09	.665
Tender-mindedness	5.03	2.09	.690
Conscientiousness	27.88	8.29	.858
Competence	4.36	2.24	.721
Order	4.54	2.21	.711
Dutifulness	5.22	1.95	.632
Achievement striving	4.13	2.18	.693
Self-discipline	4.54	2.27	.719
Deliberation	5.08	2.12	.699
Openness	20.65	7.41	.826
Fantasy	2.71	2.13	.710
Aesthetics	3.30	2.36	.768
Feelings	4.11	2.14	.673
Actions	3.00	2.29	.749
Ideas	3.51	1.85	.614
Values	4.00	1.70	.503

Table 7. Descriptive statistics and internal consistency coefficients for the PID-5

PID-5 scale	*M*	*SD*	Cronbach's alpha
Anhedonia	8.13	5.48	.856
Anxiousness	11.55	7.50	.920
Attention Seeking	8.78	5.17	.849
Callousness	6.21	6.39	.865
Deceitfulness	6.28	5.46	.850
Depressivity	9.87	9.82	.942
Distractibility	8.73	7.07	.929
Eccentricity	10.16	9.46	.943
Emotional Lability	9.72	5.48	.867
Grandiosity	5.57	3.81	.777
Hostility	10.47	6.30	.847
Impulsivity	6.01	4.12	.824
Intimacy Avoidance	4.02	3.69	.779
Irresponsibility	4.18	3.87	.781
Manipulativeness	3.32	2.98	.765
Perceptual Dysregulation	6.72	6.70	.877
Perseveration	9.68	5.52	.828
Restricted Affectivity	7.81	4.19	.734
Rigid Perfectionism	12.78	6.67	.834
Risk Taking	16.91	7.66	.830
Separation Insecurity	7.99	5.27	.853
Submissiveness	3.79	2.96	.825
Suspiciousness	7.71	4.12	.741
Unusual Beliefs and Experiences	4.59	4.70	.824
Withdrawal	9.55	6.73	.899

Correlations among the Big Five traits and PDs measured with the ETPduo questionnaire

In order to assess the construct validity of the newly developed instrument, we first correlated the results obtained on the ETPduo scale with the results on the Big Five plus questionnaire. The resulting correlation matrix is presented in Tables 8 (focusing on the PDs that are retained by the Alternative Model of Personality Disorders) and 9 (focusing on the rest of the PDs, as well as the depression and anxiety scales). Generally, correlations are small to moderate and in the expected direction. Only the obsessive-compulsive PD scale correlated weakly with all of the Big Five facets. The results indicate that, out of the five personality domains, neuroticism facets are the most strongly correlated with most of the PDs.

Table 8. Correlations among PDs assessed with the ETPduo questionnaire and Big Five personality domains and facets (part 1)

Big Five Plus scale	Antisocial PD	Avoidant PD	Borderline PD	Narcissistic PD	Obsessive-compulsive PD	Schizotypal PD
Neuroticism	**.351**	**.715**	**.672**	-.177	.274	**.478**
Anxiousness	.216	**.654**	**.585**	-.195	.287	**.423**
Angry hostility	**.394**	**.363**	**.477**	.019	.227	**.314**
Depressiveness	.292	**.673**	**.633**	-.211	.296	**.488**
Self-consciousness	.126	**.689**	**.450**	-.275	.241	**.326**
Impulsivity	**.401**	**.220**	**.384**	.140	-.037	.273
Vulnerability	.130	**.587**	**.448**	-.260	.175	.294
Extraversion	.029	**-.495**	-.222	**.322**	-.171	-.255
Warmth	-.106	**-.412**	-.207	.169	-.171	-.271
Gregariousness	-.011	**-.383**	-.203	.216	-.176	-.279
Assertiveness	.137	**-.374**	-.064	.295	-.052	-.052
Activity	-.043	**-.335**	-.187	.213	.000	-.199
Excitement seeking	.175	-.222	-.026	.297	-.090	.073
Positive emotionality	-.024	**-.434**	-.287	.213	-.248	-.251
Agreeableness	**-.302**	.047	-.051	-.221	-.045	-.227
Trust	-.216	-.307	-.291	.057	-.274	**.385**
Straightforwardness	**-.385**	-.249	**-.315**	-.061	-.052	**-.318**
Altruism	-.189	-.129	-.102	.003	.035	-.143
Compliance	-.191	.149	.018	-.252	-.050	-.122
Modesty	-.039	**.469**	.261	**-.434**	.112	.144
Tender-mindedness	-.040	.211	.238	-.068	.095	.038
Conscientiousness	**-.410**	**-.391**	**-.406**	.097	.162	-.298
Competence	-.254	**-.647**	**-.553**	.240	-.172	**-.398**
Order	-.243	-.078	-.109	-.045	.238	-.107
Dutifulness	**-.357**	-.090	-.180	-.064	.186	-.165
Achievement striving	-.139	**-.345**	-.214	**.305**	.060	-.125
Self-discipline	**-.335**	**-.329**	**-.369**	.044	.103	-.250
Deliberation	-.248	.028	-.105	-.131	.223	-.082
Openness	.022	-.133	-.019	.218	-.179	.108
Fantasy	.243	.266	**.321**	.126	-.026	**.357**
Aesthetics	.004	.053	.099	.106	-.023	.176
Feelings	**-.338**	**-.535**	**-.496**	.160	-.228	**-.410**
Actions	.146	-.166	-.044	.256	-.138	.069
Ideas	-.025	-.128	-.207	.093	-.140	.094
Values	.042	.048	-.203	-.005	-.088	.097

Note. All correlations larger than |.120| are significant at the < .001 level ($p < .001$). Correlations larger than |.300| are boldfaced.

Table 9. Correlations among PDs assessed with the ETPduo questionnaire and Big Five personality domains and facets (part 2)

Big Five Plus scale	Paranoid PD	Schizoid PD	Histrionic PD	Dependent PD	Impulsive PD	Anxiety	Depression
Neuroticism	**.571**	**.379**	.228	**.684**	**.627**	**.714**	**.707**
Anxiousness	**.513**	**.331**	.155	**.630**	**.497**	**.693**	**.654**
Angry hostility	**.417**	.166	**.352**	**.325**	**.535**	**.438**	**.397**
Depressiveness	**.558**	**.440**	.122	**.681**	**.560**	**.711**	**.766**
Self-consciousness	**.409**	**.355**	-.065	**.574**	**.377**	**.498**	**.521**
Impulsivity	.253	.125	**.400**	.256	**.422**	.261	.263
Vulnerability	**.368**	.264	.048	**.571**	**.384**	**.554**	**.531**
Extraversion	-.298	**-.428**	.284	**-.411**	-.162	**-.336**	**-.397**
Warmth	**-.326**	**-.465**	.155	-.295	-.215	-.263	**-.344**
Gregariousness	-.270	**-.469**	**.221**	-.288	-.163	-.278	**-.335**
Assertiveness	-.105	-.210	**.333**	**-.317**	.017	-.163	-.189
Activity	-.197	-.297	.123	**-.345**	-.160	-.223	**-.306**
Excitement seeking	-.052	-.051	.255	-.223	.043	-.161	-.148
Positive emotionality	**-.348**	**-.364**	.143	**-.335**	-.231	**-.380**	**-.413**
Agreeableness	-.188	-.275	-.204	.061	-.172	.004	-.029
Trust	**-.484**	**-.396**	-.092	-.244	**-.306**	**-.342**	**-.362**
Straightforwardness	**-.311**	-.295	-.237	-.279	**-.367**	-.283	-.296
Altruism	-.126	-.222	-.080	-.118	-.160	-.079	-.132
Compliance	-.062	-.113	-.192	.170	-.070	.095	.086
Modesty	.222	.221	-.207	**.458**	.169	**.350**	**.401**
Tender-mindedness	.116	-.153	.098	.198	.122	.261	.187
Conscientiousness	-.292	-.294	-.237	**-.492**	**-.443**	**-.367**	**-.406**
Competence	**-.472**	**-.355**	-.120	**-.668**	**-.480**	**-.614**	**-.614**
Order	-.065	-.098	-.149	-.152	-.171	-.056	-.089
Dutifulness	-.128	-.176	-.222	-.165	-.233	-.138	-.148
Achievement striving	-.140	-.204	.052	**-.443**	-.224	-.261	**-.311**
Self-discipline	-.260	-.258	-.255	**-.414**	**-.399**	**-.349**	**-.369**
Deliberation	-.034	-.021	-.220	-.006	-.173	.012	-.002
Openness	-.069	-.092	.250	-.124	-.012	-.149	-.084
Fantasy	.252	.197	**.310**	**.302**	**.321**	.250	**.302**
Aesthetics	.053	-.017	.171	.049	.062	.026	.079
Feelings	**-.438**	**-.471**	-.077	**-.520**	**-.489**	**-.535**	**-.571**
Actions	-.051	-.036	.249	-.197	.025	-.164	-.139
Ideas	-.080	-.027	.112	-.114	-.010	-.097	-.024
Values	.018	.046	.103	.058	.051	.000	.076

Note. All correlations larger than |.120| are significant ($p < .001$). Correlations larger than |.300| are boldfaced.

Correlations among maladaptive personality traits and PDs measured with the ETPduo questionnaire

The associations among the 25 maladaptive personality traits assessed with the PID-5 and the six PDs included in the AMPD are presented in Table 10. Most correlation coefficients are positive and medium to large. With some exceptions (discussed below), all six PDs correlated positively and significantly with their respective trait specifiers. Table 11 presents the associations among PDs which are not included in the AMPD, as well as depression and anxiety, and the 25 maladaptive personality traits measured using PID-5. Results support the validity of the ETPduo questionnaire. For instance, in consonance with the prototypical description of this disorder, paranoid PD correlated strongly with suspiciousness and hostility. The schizoid PD was mainly associated with the facets of detachment, whereas the histrionic PD correlated most strongly with attention seeking. The dependent PD correlated strongly with the facets subordinated to negative affectivity (especially with depressivity and anxiousness), while there were large associations between the impulsive PD and hostility, irresponsibility, and impulsivity. Anxiety correlated most strongly with anxiousness, whereas there was a very large correlation between the ETPduo depression scale and PID-5 depressivity. Both anxiety and depression scales were strongly correlated with anhedonia and distractibility, as well as with emotional lability, perseveration, eccentricity, and perceptual dysregulation.

Table 10. Correlations among PDs assessed with the ETPduo questionnaire and maladaptive personality traits measured with the PID-5 (part 1)

PID-5 scale	Antisocial PD	Avoidant PD	Borderline PD	Narcissistic PD	Obsessive-compulsive PD	Schizotypal PD
Anhedonia	.363	**.593**	**.573**	-.108	.252	**.535**
Anxiousness	.356	**.606**	**.669**	-.012	.449	**.561**
Attention Seeking	.379	.108	.330	.475	.177	.297
Callousness	**.595**	.211	.335	.237	.102	.434
Deceitfulness	**.581**	.234	.380	.275	.090	.411
Depressivity	.419	**.630**	**.663**	-.054	.277	**.593**
Distractibility	.420	**.643**	**.644**	-.028	.228	**.563**
Eccentricity	.497	.467	**.615**	.131	.269	**.728**
Emotional Lability	.392	**.598**	**.692**	.045	.394	**.562**
Grandiosity	.327	.049	.208	**.543**	.229	.309
Hostility	**.597**	.412	**.587**	.145	.315	**.533**
Impulsivity	**.584**	.346	**.541**	.098	.135	.439
Intimacy Avoidance	.258	.313	.258	.026	.213	.369
Irresponsibility	**.557**	.478	**.525**	.089	.060	.481
Manipulativeness	**.521**	.092	.294	.384	.072	.375
Perceptual Dysregulation	**.519**	**.519**	**.628**	.156	.311	**.668**
Perseveration	.445	**.542**	**.604**	.109	.440	**.553**
Restricted Affectivity	.306	.205	.204	.127	.163	.332
Rigid Perfectionism	.235	.265	.337	.231	**.628**	.389

PID-5 scale	Antisocial PD	Avoidant PD	Borderline PD	Narcissistic PD	Obsessive-compulsive PD	Schizotypal PD
Risk Taking	.381	-.142	.108	.284	-.058	.207
Separation Insecurity	.384	.423	**.597**	.126	.300	.363
Submissiveness	.224	**.564**	.469	-.013	.219	.380
Suspiciousness	.449	.405	.475	.184	.395	**.580**
Unusual Beliefs and Experiences	.461	.291	.450	.280	.305	**.631**
Withdrawal	.277	**.549**	.386	-.075	.284	.496

Note. All correlations larger than .120 are significant ($p < .001$). Large correlations (≥ .500) are boldfaced. Underlined correlation coefficients represent the traits proposed as a specifier for a certain PD in the AMPD.

Table 11. Correlations among PDs assessed with the ETPduo questionnaire and maladaptive personality traits measured with the PID-5 (part 2)

PID-5 scale	Paranoid PD	Schizoid PD	Histrionic PD	Dependent PD	Impulsive PD	Anxiety	Depression
Anhedonia	**.563**	**.586**	.132	**.636**	**.537**	**.619**	**.762**
Anxiousness	**.618**	.409	.284	**.650**	**.604**	**.791**	**.721**
Attention Seeking	.259	.095	**.621**	.138	.333	.213	.159
Callousness	.403	.485	.310	.266	.446	.243	.315
Deceitfulness	.380	.390	.402	.323	.422	.275	.335
Depressivity	**.608**	**.529**	.233	**.727**	**.601**	**.649**	**.796**
Distractibility	**.566**	.495	.297	**.697**	**.599**	**.656**	**.717**
Eccentricity	**.575**	**.541**	.346	**.529**	**.620**	**.557**	**.629**
Emotional Lability	**.583**	.378	.365	**.601**	**.626**	**.697**	**.652**
Grandiosity	.246	.236	.396	.037	.248	.101	.090
Hostility	**.580**	.446	.420	.437	**.671**	**.519**	**.529**
Impulsivity	.460	.292	.423	.414	**.628**	.435	.451
Intimacy Avoidance	.341	**.506**	.029	.302	.290	.256	.360
Irresponsibility	.455	.454	.339	**.577**	**.543**	.457	**.535**
Manipulativeness	.289	.303	.461	.149	.357	.156	.215
Perceptual Dysregulation	**.624**	**.538**	.343	**.584**	**.610**	**.606**	**.646**
Perseveration	**.563**	.497	.301	**.597**	**.588**	**.574**	**.601**
Restricted Affectivity	.304	**.566**	.079	.208	.258	.147	.267
Rigid Perfectionism	.384	.313	.223	.234	.327	.333	.295
Risk Taking	.086	.097	.279	-.090	.204	-.066	-.018
Separation Insecurity	.446	.187	.345	**.531**	.491	.483	.453
Submissiveness	.388	.361	.166	**.554**	.405	.440	.493
Suspiciousness	**.687**	.467	.291	.437	.491	.470	.484
Unusual Beliefs and Experiences	.486	.408	.338	.354	.461	.410	.428
Withdrawal	.484	**.682**	.003	.489	.392	.442	**.554**

Note. All correlations larger than .120 are significant ($p < .001$). Large correlations (≥ .500) are boldfaced.

Discussion

The results presented above are generally in line with previous theoretical and empiric work; however, we notice that there are some deviations from our initial expectations, too. Antisocial PD was positively correlated with anxiousness, self-consciousness, and vulnerability (although the correlations were small), and was not correlated significantly with tender-mindedness, modesty, gregariousness, or activity, contrasting with the personality profile of this PD described by Widiger & Mullins-Sweatt (2009). However, according to the DSM-5 (2013), people with antisocial PD might also have associated anxiety and depression, which might explain the positive relations between antisocial PD, anxiousness, self-consciousness, and vulnerability in our study. Results showed that the avoidant PD was correlated with all the Big Five personality traits proposed by Widiger & Mullins-Sweatt. On the other hand, it also correlated strongly with other traits which were not specified by the two authors, such as depressiveness, competence, or feelings. Nonetheless, avoidant PD correlated with both depressiveness and competence in a meta-analysis conducted by Samuel & Widiger (2008). Moreover, in a study using an expert consensus approach to generate prototypical personality profiles for ten PDs, Lynam & Widiger (2001) report that the avoidant PD was described as being characterized by relatively high levels of depressiveness and low levels of competence. Moving on to the borderline PD, we notice that it was not correlated with compliance and actions, and was negatively correlated with feelings. In the meta-analysis conducted by Samuel & Widiger, results confirmed that borderline PD is negatively correlated with compliance and only very modestly correlated with feelings. Despite this discrepancy from past literature, we note that borderline PD was associated with high scores on anxiousness, angry hostility, depressiveness, and vulnerability, which were previously shown to be particularly characteristic of this PD (Furnham & Crump, 2014). Although it was negatively correlated with modesty and compliance, which is congruent with the prototypical description of this PD, narcissistic PD should have also been associated with low scores on all the other facets of agreeableness. We also expected a negative association between narcissistic PD and angry hostility based on the profile described by Widiger & Mullins-Sweatt's, as well as the meta-analysis of Samuel & Widiger. The obsessive-compulsive PD should have been positively correlated with all the facets of conscientiousness (Lynam & Widiger, 2001; Samuel & Widiger, 2004; Samuel & Widiger, 2008; Widiger & Costa, 2002). However, it was uncorrelated with achievement striving and negatively correlated with competence. The correlations with the other facets were rather small, too. On the other hand, data largely supported the hypothesized relations among normal personality traits and schizotypal, schizoid, and dependent PD. Although we did not find significant correlations between the schizotypal PD and ideas, or between the schizoid PD and actions, these results are in line with the meta-analysis of Samuel & Widiger. Based on the work of Widiger & Mullins-Sweatt, we would have expected the dependent

PD to be positively correlated with warmth and trust, but our results align with those reported in the meta-analysis conducted by Samuel & Widiger, where the authors found a negative (although negligible) correlation between these traits and the dependent PD. As expected, the paranoid PD was positively correlated with angry hostility and negatively associated with warmth, gregariousness, trust, and straightforwardness. However, it was not significantly correlated with compliance, actions, or values, and it was positively (although weakly) correlated with tender-mindedness. The meta-analysis of Samuel & Widiger revealed similar results for the actions and values facets, but indicated that the paranoid PD was indeed negatively correlated with compliance and tender-mindedness. We found a medium correlation between angry hostility and the histrionic PD, a trait which is not considered highly characteristic of this PD. On the other hand, histrionic PD was not associated with trust or feelings, but these results are in line with those reported by Samuel & Widiger (2008).

Looking at the correlations presented in Table 10, we note that there are very few discrepancies between the trait specifiers proposed in the AMPD and the results obtained in the present study. The antisocial PD was moderately or strongly correlated with the facets of psychoticism, which we would not have expected based on the AMPD. In fact, this was also true for the avoidant and borderline PDs. However, these results are in line with those of Watters et al. (2019), who report similar findings in their meta-analysis. The borderline PD was only weakly correlated with risk taking, a result which deviates from the profile proposed in the AMPD, but is in line with the meta-analysis of Watters et al. (2019). The obsessive-compulsive PD only modestly correlated with intimacy avoidance and restricted affectivity, and correlated more strongly with traits that are not specified in the AMPD, such as anxiousness and emotional lability (a result which is once again congruent with the meta-analysis of Watters et al.). Although no predictions were made about the relations between the 25 maladaptive personality traits and the five PDs not included in the alternative model, we note that the obtained correlations are plausible from a theoretical standpoint. The paranoid PD was strongly related to suspiciousness, hostility, and anxiousness (among others), the schizoid PD was correlated with withdrawal, restricted affectivity, and depressivity, the histrionic PD was associated with attention seeking and manipulativeness, whereas the dependent PD correlated strongly with the facets contained within the negative affectivity domain. These results are in line with the description of the PDs according to both the DSM-5 (APA, 2013) and the ICD-10 (WHO, 1993). Moreover, the associations between the impulsive PD and the 25 maladaptive traits are very similar to the correlations between the borderline PD and the PID-5 scales. Seeing that both PDs are subtypes of the emotionally unstable PD in the ICD-10, these similarities were to be expected.

Overall, we conclude that the ETPduo questionnaire has good construct validity. Most discrepancies were observed for the obsessive-compulsive and narcissistic PD scales. Although the obsessive-compulsive scale correlated strongly

with rigid perfectionism, it was only weakly related to the facets of conscientiousness. Similarly, we would have expected negative and larger correlations between narcissistic PD and the facets of agreeableness. These scales have also been shown to have problematic items in Study 1. Therefore, revising some of the items contained by these scales would likely result in improved factorial and construct validity.

General discussion

The aim of the present studies was to assess the psychometric proprieties of a new instrument designed to measure 11 PDs described by the DSM-5 and the ICD-10, as well as anxiety and depression. Study 1 showed that the questionnaire has good internal consistency, test-retest reliability and factorial validity. The results were used to advance suggestions that could potentially be used to improve the psychometric proprieties of some of the scales (narcissistic PD, histrionic PD, and obsessive-compulsive PD). In Study 2, the nomological network of the instrument was evaluated. Findings suggest that the questionnaire has good construct validity, seeing that the hypothesized correlations among PDs measured with ETPduo and normal/maladaptive personality traits were largely supported by the data. The results for the obsessive-compulsive and narcissistic scales deviated more from what would have been expected based on previous literature, which suggests that these scales should be reexamined and revised in the future.

Despite the fact that these preliminary results suggest that the ETPduo questionnaire is a reliable and valid instrument, more empirical work is necessary before recommending it for clinical practice and some limitations of the present studies should be noted. First of all, the internal consistencies for some of the scales included in the Big Five inventory were below the conventional threshold. Therefore, these results should be interpreted with caution. Moreover, the present studies used convenience samples consisting of adults from the general population. Although the samples used in the present research were large enough and diverse (relatively equal numbers of men and women, diverse educational backgrounds, and a wide age range), the psychometric proprieties of the instrument should also be examined in a clinical sample. Moreover, the construct validity of the questionnaire needs to be further assessed by correlating the results obtained on the ETPduo questionnaire with results obtained on another instrument designed to evaluated PDs (such as the OMNI-IV). Last but not least, it must be noted that, in its present form, the ETPduo questionnaire cannot be used to identify persons who might fall into the Other Specified PD, Unspecified PD, or Not Otherwise Specified PD diagnoses. One of the limitations of the categorical model of PDs is its inadequate coverage, as many patients with PD symptomatology do not meet the criteria for any of the existing PD categories (Widiger & Trull, 2007). Some people who are adminstered the ETPduo assessment might not obtain extreme scores on any of the instrument's scales, despite

showing considerable inter- and intrapersonal impairment (as indicated by medium to large scores on a considerable number of scales). Such results might suggest that these persons might fall into the Not Otherwise Specified category. In a future revision of the ETPduo questionnaire, we plan on including an additional scale assessing global personality dysfunction. A total score on this scale might be computed by summing up items from all scales of the questionnaire (excluding items measuring depression and anxiety). We speculate that a high score on the global personality dysfunction scale in the absence of extreme scores on any of the specific PD scales might indicate that the person could have an accentuated tendency towards PD, which is not described by any of the existent categories. Empirical work is obviously needed to test this idea. Until other empirical studies address the issues presented above, the ETPduo questionnaire can still be used for research purposes by the Romanian authors who are interested in evaluating their participants' tendency towards certain PDs, as well as depression and anxiety.

Authors note

Conflicts of interest statement: We have no conflict of interest to declare.

Compliance of ethical standard statement: The procedures performed in this study were in accordance with the standards of the institutional ethics committee and with APA ethical principles regarding research with human participants.

Informed consent: Informed consent was obtained from all participants included in the study.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

Al-Dajani, N., Gralnick, T. M., & Bagby, R. M. (2016). A psychometric review of the Personality Inventory for DSM–5 (PID–5): *Current status and future directions. Journal of Personality Assessment*, *98*(1), 62-81. https://doi.org/10.1080/00223891.2015.1107572

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: Author.

Beckwith, H., Moran, P. F., & Reilly, J. (2014). Personality disorder prevalence in psychiatric outpatients: a systematic literature review. *Personality and Mental Health*, *8*(2), 91-101. https://doi.org/10.1002/pmh.1252

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: a primer. *Frontiers in Public Health*, *6*, 149. https://doi.org/10.3389/fpubh.2018.00149

Ciuca, A., Costache, R., Albu, M., (2016), Adaptarea și standardizarea OMNI-IV pe populaţia din România, Cluj-Napoca, Editura ASCR, ISBN 978-606-8244-97-6.

Constantin, T. (2021a, November 11-13). *Caracteristici psihometrice ale unui nou instrument de screening psihologic și psihiatric: Inventarul de Evaluare a Tulburărilor de Personalitate (ETPduo)* [Psychometric proprieties of a new psychological and psychiatric screening tool: the Evaluation of Personality Disorders (ETPduo) questionnaire] [Conference presentation]. *Zilele Institutului de Psihiatrie Socola,* Prevenția în Psihiatrie – Abordare Bio-Psiho-Socială, Iași; https://zilelepsihiatriei.ro/wp-content/uploads/2021/11/Volum-Rezumate-Socola-2021-8.pdf

Constantin, T. (2021b, December 10-11). *Sisteme alternative de evaluare a tulburărilor de personalitate; de la perspectiva clasică, categorială, la noile modele multidimensionalele* [Alternative models for personality disorder evaluation: from the classical, categorial perspective towards multidimensional models] [Conference presentation]. Conferința *Psihiatrie și Psihologie Medico-legală; inter și transdisciplinaritate*, Sibiu, http://www.medicina-psihiatrie.ro/wp-content/uploads/2021/12/Program-stiintific-10dec2021.pdf

Constantin, T., Macarie, A., Gheorghiu, A., Potlog, M. C., and Iliescu, M. (2010). Big Five©plus re-test. Or the reliability of a psychological measure derived from the five factor model. *Annals of the Al. I. Cuza University. Psychology Series, 19*, 51–64.

Constantin, T., Nicuță, E.G., & Grădinaru, D. (2021). Psychometric proprieties of the Personality Inventory for DSM-5 in a Romanian community sample. *Journal of Evidence-Based Psychotherapies, 21*(1), 3-20.

Cramer, V., Torgersen, S., & Kringlen, E. (2006). Personality disorders and quality of life. A population study. *Comprehensive Psychiatry, 47*(3), 178-184. https://doi.org/10.1016/j.comppsych.2005.06.002

Disney, K. L., Weinstein, Y., & Oltmanns, T. F. (2012). Personality disorder symptoms are differentially related to divorce frequency. *Journal of Family Psychology, 26*(6), 959–965. https://doi.org/10.1037/a0030446

Dokucu, M. E., & Cloninger, C. R. (2019). Personality disorders and physical comorbidities: a complex relationship. *Current Opinion in Psychiatry*, *32*(5), 435-441. https://doi.org/10.1097/YCO.0000000000000536

Ettner, S. L., Maclean, J. C., & French, M. T. (2011). Does having a dysfunctional personality hurt your career? Axis II personality disorders and labor market outcomes. *Industrial Relations: A Journal of Economy and Society*, *50*(1), 149-173. https://doi.org/10.1111/j.1468-232X.2010.00629.x

Furnham, A. F., & Crump, J. D. (2014). A bright side facet analysis of borderline personality disorder. *Borderline Personality Disorder and Emotion Dysregulation*, *1*(1), 1-5. https://doi.org/10.1186/2051-6673-1-7

Furnham, A., Milner, R., Akhtar, R., & De Fruyt, F. (2014). A review of the measures designed to assess DSM-5 personality disorders. *Psychology*, *5*(14), 1646. https://doi.org/10.4236/psych.2014.514175

Haliczer, L. A., Woods, S. E., & Dixon-Gordon, K. L. (2021). Emotion regulation difficulties and interpersonal conflict in borderline personality disorder.

Personality Disorders: Theory, Research, and Treatment, *12*(4), 347. https://doi.org/10.1037/per0000436

Hengartner, M. P., Müller, M., Rodgers, S., Rössler, W., & Ajdacic-Gross, V. (2014). Occupational functioning and work impairment in association with personality disorder trait-scores. *Social Psychiatry and Psychiatric Epidemiology*, *49*(2), 327-335. https://doi.org/ 10.1007/s00127-013-0739-2

Ishak, W. W., Elbau, I., Ismail, A., Delaloye, S., Ha, K., Bolotaulo, N. I., ... & Wang, C. (2013). Quality of life in borderline personality disorder. *Harvard Review of Psychiatry*, *21*(3), 138-150. https://doi.org/10.2147/PPA.S108777

Johnson, J. G., Rabkin, J. G., Williams, J. B., Remien, R. H., & Gorman, J. M. (2000). Difficulties in interpersonal relationships associated with personality disorders and Axis I disorders: A community-based longitudinal investigation. *Journal of Personality Disorders*, *14*(1), 42-56. https://doi.org/10.1521/pedi. 2000.14.1.42

Kasalova, P., Prasko, J., Kantor, K., Zatkova, M., Holubova, M., Sedlackova, Z., ... & Grambal, A. (2018). Personality disorder in marriage and partnership–a narrative review. *Neuroendocrinology Letters*, *39*(3), 159-71.

Kavanagh, B. E., Stuart, A. L., Berk, M., Turner, A., Dean, O. M., Pasco, J. A., ... & Williams, L. J. (2020). Personality disorder increases risk of low quality of life among women with mental state disorders. *Comprehensive Psychiatry*, *102*, 152193. https://doi.org/10.1016/j.comppsych.2020.152193

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, *15*(2), 155-163. https://doi.org/10.1016/j.jcm.2016.02.012

Krueger, R. F., Derringer, J., Markon, K. E., Watson, D., & Skodol, A. E. (2012). Initial construction of a maladaptive personality trait model and inventory for DSM-5. *Psychological Medicine*, *42*(9), 1879-1890. https://doi.org/10.1017/ S0033291711002674

Krueger, R. F., & Hobbs, K. A. (2020). An Overview of the DSM-5 Alternative Model of Personality Disorders. *Psychopathology*, *53*(3), 126-132. https://doi.org/10.1159/000508538

Lavner, J. A., Lamkin, J., & Miller, J. D. (2015). Borderline personality disorder symptoms and newlyweds' observed communication, partner characteristics, and longitudinal marital outcomes. *Journal of Abnormal Psychology, 124*(4), 975–981. https://doi.org/10.1037/abn0000095

Lim, D., Sanderson, K., & Andrews, G. (2000). Lost productivity among full-time workers with mental disorders. *The Journal of Mental health Policy and Economics*, *3*(3), 139-146. https://doi.org/10.1002/mhp.93

Livesley, W. J., & Jackson, D. (2009). Manual for the dimensional assessment of personality pathology—basic questionnaire. *Port Huron, MI: Sigma*.

Loranger, A. W. (2001). OMNI Personality Inventory. Lutz, FL: Psychological Assessment Resources.

Lynam, D. R., & Widiger, T. A. (2001). Using the five-factor model to represent the DSM-IV personality disorders: an expert consensus approach. *Journal of*

Abnormal Psychology, *110*(3), 401-412. https://doi.org/10.1037/0021-843X.110.3.401

Maruta, T., Yamate, T., Iimori, M., Kato, M., & Livesley, W. J. (2006). Factor structure of the Dimensional Assessment of Personality Pathology-Basic Questionnaire and its relationship with the Revised NEO Personality Inventory in a Japanese sample. *Comprehensive Psychiatry*, 47(6), 528–533. https://doi.org/10.1016/j.comppsych.2006.03.006

Melley, A. H., Oltmanns, T. F., & Turkheimer, E. (2002). The Schedule for Nonadaptive and Adaptive Personality (SNAP) Temporal stability and predictive validity of the diagnostic scales. *Assessment, 9*(2), 181-187. https://doi.org/10.1177/10791102009002009

Overholser, J. C. (1996). The dependent personality and interpersonal problems. *The Journal of Nervous and Mental Disease*, *184*(1), 8-16. https://doi.org/ 10.1097/00005053-199601000-00003

Quirk, S. E., Berk, M., Chanen, A. M., Koivumaa-Honkanen, H., Brennan-Olsen, S. L., Pasco, J. A., & Williams, L. J. (2016). Population prevalence of personality disorder and associations with physical health comorbidities and health care service utilization: A review. *Personality Disorders: Theory, Research, and Treatment*, *7*(2), 136. https://doi.org/10.1037/per0000148

R Core Team (2021*). R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria.

Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Samuel, D. B., & Widiger, T. A. (2008). A meta-analytic review of the relationships between the five-factor model and DSM-IV-TR personality disorders: A facet level analysis. *Clinical Psychology Review*, *28*(8), 1326-1342. https://doi.org/ 10.1016/j.cpr.2008.07.002

Schneider, K. (1923). *Psychopathic Personalities*. London: Cassell.

Schotte, C. K. (2000). New instruments for diagnosing personality disorders. *Current Opinion in Psychiatry*, *13*(6), 605-609.

South, S. C., Turkheimer, E., & Oltmanns, T. F. (2008). Personality disorder symptoms and marital functioning. *Journal of Consulting and Clinical Psychology, 76*(5), 769–780. https://doi.org/10.1037/a0013346

Watters, C. A., Bagby, R. M., & Sellbom, M. (2019). Meta-analysis to derive an empirically based set of personality facet criteria for the alternative DSM-5 model for personality disorders. *Personality Disorders: Theory, Research, and Treatment, 10*(2), 97-104. https://doi.org/10.1037/per0000307

Widiger, T. A., & Boyd, S. E. (2009). Personality disorders assessment instruments. In J. N. Butcher (Ed.), Oxford Handbook of Personality Assessment (pp. 336–363). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195366877.013.0018

Widiger, T. A., & Costa, P. T., Jr. (2002). Five-factor model personality disorder research. In P. T. Costa, Jr. & T. A. Widiger (Eds.), *Personality disorders and the five-factor model of personality* (pp. 59–87). American Psychological Association. https://doi.org/10.1037/10423-005

Widiger, T. A., & Mullins-Sweatt, S. N. (2009). Five-factor model of personality disorder: a proposal for DSM-V. *Annual Review of Clinical Psychology*, *5*, 197–220. https://doi.org/10.1146/annurev.clinpsy.032408.153542

Widiger, T. A., & Trull, T. J. (2007). Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. *American Psychologist*, *62*(2), 71–83. https://doi.org/10.1037/0003-066X.62.2.71

Winsper, C., Bilgin, A., Thompson, A., Marwaha, S., Chanen, A. M., Singh, S. P., ... & Furtado, V. (2020). The prevalence of personality disorders in the community: a global systematic review and meta-analysis. *The British Journal of Psychiatry*, *216*(2), 69-78. https://doi.org/10.1192/bjp.2019.166

World Health Organization (WHO). (1993). *The ICD-10 Classification of Mental and Behavioural Disorders*.