sciendo

SJCAPP

Scandinavian Journal of Child and Adolescent Psychiatry and Psychology
Vol. 13:1-8 (2025) DOI 10.2478/sjcapp-2025-0001

Research Article **Open Access**

The Relationship Between Personality Inventory for DSM (PID-5) Domains and Disruptive Behavior Disorders

Ömer Faruk Akça[1,*], Kiana Cano[2], Carla Sharp[3]

[1] Necmettin Erbakan University, School of Medicine, Department of Child and Adolescent Psychiatry, Konya, Turkey
[2] Sam Houston State University, Department of Psychology and Philosophy, Spring, TX, USA
[3] University of Houston, Department of Psychology, Houston, TX, USA

***Corresponding author:** dromerakca@gmail.com

Abstract

Introduction: Previous research has demonstrated a strong relationship between personality and psychopathology. However, the relationship between the traits listed in the Alternative Model for Personality Disorders (AMPD) and Disruptive Behavior Disorders (DBD) in adolescents has not been examined in detail. This study aimed to examine the relationship between the Personality Inventory for DSM-5 (PID-5) domains and DBD symptoms in an adolescent inpatient sample.
Methods: A total of 127 adolescents (71% female) aged 12–17 years (M = 15.24, SD = 1.33) were recruited from an inpatient psychiatric hospital. These participants exhibited a wide range of psychiatric disorders unresponsive to prior interventions. They completed the PID-5-Short Form, the Child Behavior Checklist (CBCL), and the Diagnostic Interview Schedule for Children - Computerized Version (DISC-IV).
Results: The antagonism, disinhibition, and psychoticism domains showed significant correlations with DBD scores. Hierarchical regression models predicting total DISC-IV and CBCL scores indicated that the addition of the PID-5 Antagonism and Disinhibition scales did not provide incremental predictive validity over total DBD symptoms.
Conclusion: DBD symptoms are related to psychoticism, antagonism, and disinhibition. However, total Antagonism and Disinhibition scores did not contribute additional predictive power for overall psychopathology beyond DBD scores. These findings highlight questions about the discriminant validity of the PID-5 and suggest further research into the construct validity of these domains.

Keywords: Adolescent, Disruptive Behavior Disorder, Externalizing Pathology, Criterion B, Personality, Alternative Model for Personality Disorders, PID5

Introduction

Previous research has demonstrated a close relationship between personality and externalizing pathology (EP) (1). Studies exploring this relationship have conceptualized personality from the perspective of the Five-Factor Model of Personality (FFM), and personality disorders (PDs) as defined in the Diagnostic and Statistical Manual (DSM) classification system. Studies utilizing adult samples have reported a close relationship between EP and PDs. For example, Attention-Deficit and Hyperactivity Disorder (ADHD) and PDs are often highly correlated with each other, with co-morbidity rates between 10 and 75% in different studies (2). In particular, antisocial, borderline, paranoid, avoidant and narcissistic PD have demonstrated consistent and substantial co-occurrence with ADHD (3–5). In addition, retrospective research and longitudinal follow-up studies report high rates of antisocial and borderline PD in adult subjects who had ADHD in childhood (2,6,7). Similar to ADHD, a close relationship between conduct disorder (CD) and personality disorder (i.e. ASPD, BPD) has been documented in several studies (8,9). Despite less empirical evidence compared to ADHD and CD, childhood Oppositional Defiant Disorder (ODD) has also been shown to be related to personality disorders in adulthood (i.e. BPD) (10).

However, several empirical questions about the relationship between EP and PDs remain. Limitations of the categorical diagnostic model for PDs in section II of the DSM-5 make it difficult to fully understand the links between PD and ADHD (11). Section II of the DSM-5 defines PDs as distinct

categories that are dissimilar to each other and other mental disorders (12). This categorical model has been criticized by researchers and clinicians who note that it is restricted by excessive diagnostic co-occurrence, incompetent coverage of maladaptive personality functioning, and discretionary margins for diagnosis, as well as insufficient scientific support (13–16). In light of these discussions, it was proposed that a dimensional trait model would improve the assessment of personality pathology. In particular, the dimensional FFM (17) received the most empirical support (16,18,19) in this regard. Ultimately, the DSM-5 retained the categorical diagnostic model for PDs in Section II but also defined an alternative diagnostic system for PDs in Section III which included a dimensional model of pathological personality traits developed in the context of the FFM (12). According to the proposed alternative model in section III, PDs are characterized by impairments in personality functioning (Criterion A) and pathological personality traits (Criterion B). Criterion A states that an individual must demonstrate functional impairment in the domains of self (identity or self-direction) and interpersonal (empathy or intimacy) functioning, and Criterion B states that an individual must possess maladaptive personality traits. There are 25 trait facets specified in Criterion B of the alternative model for personality disorders (AMPD) and these facets are organized under 5 higher-order domains. These trait domains include antagonism, psychoticism, disinhibition, negative affectivity, and detachment (12). To assess these 5 trait domains and 25 facets described in the AMPD, the DSM-5 personality disorder workgroup developed and published a 220-item self-report measure, the Personality Inventory for DSM-5 (20). The maladaptive trait domains of PID-5 have been demonstrated to broadly correspond to FFM domains as expected (21–23). To address the need for improved clinical utility of the AMPD and the PID-5, the APA also published a 25-item, brief form of the PID-5.

In light of the limitations of the categorical approach to assessing PDs, several studies have examined the relationship between EP and dimensionally measured personality traits, reporting a close relationship between EP and several domains of the FFM (1). Although results have varied across studies, lower extraversion, agreeableness and conscientiousness, and higher neuroticism are most consistently reported to be related to ADHD in adult studies (24–27). Similarly, externalizing behaviors are related to higher neuroticism and lower agreeableness and conscientiousness scores in previous studies (28–30). However, the relationship between EP and the maladaptive trait model proposed in the AMPD has not been studied in detail and all prior research on this subject has been conducted with adults. Smith et al. (2017) examined the presence of categorical PDs, as defined by section II of the DSM, and the presence of pathological personality traits, as defined by the AMPD and the PID-5, in adults with a history of an ADHD diagnosis. Using self-report scales of current and childhood ADHD symptoms, the authors found that in addition to several PDs, current and childhood ADHD symptoms were correlated with almost all facets and domains of the PID-5 (31). Further, Smith and Samuel investigated whether the PID-5 facets predicted current ADHD symptoms using linear regression analyses and found that distractibility was the only PID-5 facet that predicted current ADHD symptoms (32).

The relationship between maladaptive personality traits of AMPD and internalizing/externalizing disorders has also been investigated in an undergraduate student sample (33). Externalizing behaviors (i.e. aggression, alcohol and substance abuse, antisocial behavior) were found to correlate with almost all PID-5 trait domains, however, the antagonism and disinhibition domains were the most consistently correlated. Additionally, regression analyses revealed that only the disinhibition and antagonism domains predicted externalizing symptoms (33).

A significant gap in the literature examining the relationship between EP and the AMPD is that no studies have utilized an adolescent sample - a developmental period during which personality organization maturates and personality pathology often onsets (34,35) and emotional and behavioral problems increase (36). Against this background, we aimed to explore the relationship between EP and the trait domains of the AMPD using the PID-5-BF. We aimed to examine the correlations between the PID-5 domains and disruptive behavior disorder (DBD) symptoms as an indicator of the clinical severity of EP. The term DBD originated in the DSM-4-TR and denotes a group of diagnoses (i.e. ADHD, ODD and CD) which can be used as an indicator of externalizing symptoms (37). Although this definition does not exist in the current classification system of the DSM-5, we used it to capture the symptoms of these three disorders and serve as an indicator of overall EP in the current study. Considering previous studies on this topic in samples of adults, and the description of the trait domains in the alternative model, we hypothesized that DBDs would be most significantly related to the antagonism and disinhibition domains of the PID-5-BF.

The high correlation rates observed between externalizing disorders and the antagonism and

disinhibition domains of the AMPD in previous studies have raised questions about the discriminant validity of criterion B of the AMPD in distinguishing between personality pathology and externalizing disorders. The trait facets that describe the antagonism and disinhibition domains in the AMPD are very similar to the diagnostic criteria for DBDs. For example, the descriptions of the manipulativeness, deceitfulness and callousness facets have very similar features to CD symptoms (i.e. often lies to obtain goods or favors or to avoid obligations, has been physically cruel to people or to animals); questions on the PID-5 which make up the hostility facet are very similar in content to ODD symptoms (i.e. often argues with authority figures, often actively defies or refuses to comply with requests from authority figures or with rules, often deliberately annoys others); and questions of impulsivity, distractibility and risk-taking on the PID-5 are very similar to ADHD symptoms (i.e. often easily distracted by extraneous stimuli, often blurts out an answer before a question has been completed, often has difficulty waiting for his or her turn, often interrupts or intrudes on others) described in the DSM-5. Considering these content similarities and the high correlations between DBDs and PID-5 domains reported in previous studies, we aimed to test whether the antagonism and disinhibition domains provided incremental utility in predicting subjects' total number of overall symptoms (as an index of severity of psychopathology), beyond the subjects' DBD symptoms. We hypothesized that these domains of the PID-5 would not make a significant contribution to the prediction of the total symptoms of subjects over DBD symptoms.

Methods

Participants and Procedures

Participants in the current study were recruited from an inpatient psychiatric hospital between 2014 and 2016. Adolescents admitted to this facility demonstrate a wide range of psychiatric disorders that have not responded to prior intervention efforts. Upon admission to the hospital, parents of adolescents were approached and invited to participate in a larger, ongoing study. If parents provided informed consent for their child to participate, adolescents were approached to provide informed assent. To be eligible to participate, all adolescents had to demonstrate proficiency in English and were excluded if they had a schizophrenia or other psychotic disorder diagnosis, bipolar disorder, autism spectrum disorder, or an IQ of less than 70. To be included in the current analyses, all adolescents must have at least partially completed the Personality Inventory for DSM-5 – Brief Form. All study measures and assessments were completed in private within the first two weeks of admission to the hospital and were administered by trained research coordinators and/or doctoral-level graduate students. All procedures were approved by local human subjects review committees.

Of n = 168 adolescents, n = 16 declined to participate, n = 19 were ineligible to participate based on the aforementioned exclusion criteria, and n = 6 consented to participate but did not complete any study assessments and were excluded. The final sample consisted of n = 127 adolescents (71% female; ages 12-17, Mage = 15.24, SD = 1.33) with the following racial/ethnic breakdown: 69.3% Caucasian (n = 88), 7.9% multiracial or other (n = 10), 3.1% Asian (n = 4), 2.4% Black or African American (n = 3), 0.8% American Indian or Alaskan Native (n = 1) and 16.5% unspecified (n = 21). Based on the Diagnostic Interview Schedule for Children – Computerized Version (NIMH DISC-IV) (38) conducted with adolescents at admission, 69.3% of the sample met criteria for a depressive disorder, 68.5% met criteria for an anxiety disorder, 39.4% met criteria for an externalizing disorder, 27.6% met criteria for a substance use disorder, and 13.4% met criteria for an eating disorder.

Measures

The Diagnostic Interview Schedule for Children – Computerized Version (NIMH DISC-IV) is a valid and reliable structured clinical interview for the assessment of DSM-IV Axis 1 psychopathology in children and adolescents ages 9-17 (38). Administration of the DISC-IV results in a diagnostic report indicating whether each diagnosis is present or absent and the number of symptoms that were endorsed for each disorder. In the current study, two continuous variables were utilized from the DISC-IV. The first variable was an overall DBD symptom score, created by summing the total symptom scores for each of the three DBDs (ADHD, CD and ODD). The second variable was an overall psychopathology symptom score, created by summing the total symptom scores for each disorder assessed using the DISC-IV.

The Child Behavior Checklist (CBCL) is a 112-item questionnaire on which parents rate their adolescent's problem behaviors observed in the past six months. Items are scored on a 3-point scale (0 not true; 1 somewhat or sometimes true; 2 very or often true). The scale yields scores for internalizing symptoms, externalizing symptoms, and a total score for overall emotional and behavioral problems. The validity and reliability of the scale have been shown by Achenbach et al. (39).

The Personality Inventory for DSM-5 – Brief Form (PID-5-BF; American Psychiatric Association) is a 25-item measure published by the APA for the assessment of

criterion B of the AMPD. Each item is rated on a 4-point Likert scale ranging from 0 to 3, with higher scores indicating greater pathology. All items in the measure originated from the full, 220-item original PID-5 (20). Trait domain scores on the PID-5-BF are calculated by summing and averaging 5 assigned items, resulting in total scores ranging from 0-3 with higher scores indicating greater pathology. In the current study, total scores for each of the 5 domains of the PID-5-BF were utilized.

Data Analytic Strategy

We used SPSS 20.0 to conduct all statistical analyses. First, we tested the association between total DBD scores and PID-5 trait domain scores using Pearson correlation analyses. Secondly, we conducted a hierarchical regression analysis predicting total symptom severity obtained using DISC-IV. Specifically, in step 1, we input age and gender. In the second step, we added DBD symptom scores, and in the third step, we added the summation of antagonism and inhibition scores to the model. At each step, we evaluated whether the added variable made an incremental contribution to predicting total symptom severity on the DISC-IV. Lastly, we repeated the same regression model to predict the

TABLE 1. Correlation analyses among PID-5 domains and DBD scores.

	1	2	3	4	5	6
1 DBD symptoms	1					
2 Negative Affect	.18	1				
3 Detachment	.02	.43**	1			
4 Antagonism	.44**	.12	-.01	1		
5 Disinhibition	.55**	.22	.10	.47**	1	
6 Psychoticism	.36**	.45**	.39**	.30**	.25*	1

**p< 0.01 **p< 0.001. DBD: Disruptive behavior disorders*

TABLE 2. Hierarchical Regression Analysis predicting total symptom scores of DISC IV.

		B	SE	Beta	*t*	*p*
Model 1	(Constant)	38.661	25.640		1.508	0.134
	Gender	-4.159	4.965	-0.077	-0.838	0.404
	Age	1.550	1.689	0.084	0.918	0.361
Model 2	(Constant)	23.075	19.306		1.195	0.234
	Gender	-11.120	3.794	-0.206	-2.931	0.004
	Age	0.903	1.269	0.049	0.711	0.478
	DBD	1.576	0.162	0.675	9.702	0.000
Model 3	(Constant)	22.880	19.390		1.180	0.240
	Gender	-10.998	3.829	-0.204	-2.873	0.005
	Age	0.940	1.279	0.051	0.735	0.464
	DBD	1.610	0.197	0.690	8.181	0.000
	Antagonism+Disinhibition	-0.103	0.331	-0.026	-0.309	0.758

SE: Standard Error; DBD: Disruptive Behavior Disorder; DISC IV: Diagnostic Interview Schedule for Children. Model 1: R2: 0.45; R2 change: 0.01; Sig F Change: 0.51. Model 2: R2: 0.45; R2 change: 0.44; Sig F Change: <0.001. Model 3: R2: 0.45; R2 change: <0.001; Sig F Change: 0.76

TABLE 3. Hierarchical Regression Analysis predicting total CBCL scores.

		B	SE	Beta	t	p
Model 1	(Constant)	73.432	6.758		10.866	.000
	Gender	-.026	1.277	-.002	-.020	.984
	Age	-.363	.445	-.082	-.814	.417
Model 2	(Constant)	72.352	6.500		11.131	.000
	Gender	-.877	1.257	-.069	-.697	.487
	Age	-.465	.429	-.105	-1.085	.281
	DBD	.164	.053	.303	3.094	.003
Model 3	(Constant)	72.393	6.511		11.119	.000
	Gender	-1.002	1.268	-.079	-.790	.432
	Age	-.490	.431	-.111	-1.137	.258
	DBD	.135	.064	.249	2.106	.038
	Antagonism+Disinhibition	.088	.107	.097	.819	.415

*SE: Standard Error; DBD: Disruptive Behavior Disorder; CBCL: Child Behavior Check*list. Model 1: R^2: 0.01; R^2 change: 0.01; Sig F Change: 0.71. Model 2: R^2: 0.09; R^2 change: 0.09; Sig F Change: 0.003. Model 3: R^2: 0.10; R^2 change: 0.006; Sig F Change: 0.41

total CBCL scores of the participants as a dependent variable.

Results

We examined the relations between the PID-5 domains and DBDs using bivariate and multivariate approaches. Using a bivariate approach, the antagonism, disinhibition and psychoticism PID-5 domains demonstrated significant correlations with DBD scores (Table 1). Using a multivariate approach, hierarchical regression models found that the antagonism and disinhibition domains of the PID-5 did not demonstrate any incremental validity over total DBD symptoms and CBCL scores in predicting overall psychopathology (p>0,05) (Tables 2 and 3).

Discussion

This study investigated the relationship between DBD symptoms and PID-5 domains in an adolescent inpatient sample, revealing that the antagonism, disinhibition and psychoticism trait domains are highly correlated with DBD symptoms. In addition, hierarchical regression analyses revealed that the antagonism and disinhibition domains - domains that are highly correlated with DBD in previous research as well as the current study - did not make an incremental contribution to the prediction of total symptom scores beyond that provided by DBD symptom scores. This is the first study investigating the relationship between DBD and maladaptive trait domains, as contained in the alternative model for personality disorders of DSM-5, in adolescents.

Our findings demonstrated that antagonism and disinhibition are highly correlated with DBD symptoms. Smith et al. investigated the relationship between ADHD symptoms and PID-5 domains and facets in an undergraduate student sample reporting that all PID-5 domains were correlated with self-report of current ADHD symptom severity, with disinhibition showing the strongest correlation (r=.66) (32). Similarly, another study reported that the antagonism and disinhibition domains showed the highest correlation with externalizing behaviors (i.e. aggression, alcohol misuse, substance use and antisocial behavior), although almost all domains showed correlations with externalizing symptomology to some extent (33). In addition to studies employing AMPD measures, FFM studies also align with our findings. Agreeableness and conscientiousness (which have been proposed as the opposite of antagonism and disinhibition domains of the alternative model respectively) (40) have been shown to be highly and negatively related to externalizing behaviors/symptoms (26,41). Similar findings have been demonstrated in studies utilizing adolescent samples, with agreeableness and conscientiousness significantly associated with several externalizing behaviors (i.e. vandalism, aggression and drug use) (42). This literature indicates that our findings align with prior adult and adolescent research showing that antagonism and disinhibition domains are closely linked to externalizing pathology.

In addition to disinhibition and antagonism, our findings showed that DBD scores were also correlated with the psychoticism domain of PID-5. This finding is consistent with the study of Smith et al. which found that although all domains of the PID-5 were significantly correlated with ADHD scores, the psychoticism domain was among the most highly correlated domains (r=.47) (32). Sleep et al. reported similar results, finding that the psychoticism domain was highly correlated with all externalizing behaviors measured including aggression, alcohol misuse, substance use and antisocial behavior (33). The somewhat unexpected strong correlation between psychoticism and externalizing pathology, in previous research as well as the current study, might be related to a lack of acceptable discriminant validity demonstrated by the psychoticism scale, as stated in previous research (32). Supporting this explanation, existing research indicates that the psychoticism facets correlate very highly with each other and have the highest correlations with other domains of the PID-5 (43). Furthermore, psychoticism has been found to be positively correlated with a large number of conceptually unrelated constructs including depression, anxiety, externalizing and antisocial behaviors, substance use and health concerns (44,45). Thus, the findings obtained from our study and previous similar ones support the proposal that PID-5 psychoticism relates to nearly all forms of psychopathology and may lack discriminant validity. This will be an important area for ongoing research on the construct validity of the PID-5.

Taken together, these findings are consistent with personality psychopathology spectrum approaches (see, e.g., (46) for a review; (31,33,47)), which form the basis for the Hierarchical Taxonomy of Psychopathology (HiTOP; (48)). HiTOP integrates personality pathology into hierarchically organized spectra along with all other forms of psychopathology, tying internalizing, externalizing, and psychotic spectra to the temperamental dimensions that underlie them (49). The HiTOP consortium claims that their model finally gives personality the prominent role it deserves in psychiatric nomenclature (50). However, if maladaptive traits assess nothing more than internalizing and externalizing behaviors, the question arises as to whether the assessment of

maladaptive personality traits has any value beyond what is already captured in measures of DBD (or anxiety and depression on the internalizing dimension). To this end, we assessed whether the maladaptive traits of disinhibition and antagonism provided additional explanatory utility beyond the variance explained by DBD symptoms, with total psychiatric severity as the outcome. Results indicated that the Antagonism and Disinhibition domains did not make an incremental contribution to total symptom scores over and above the contribution of DBD scores. This finding is intriguing and raises some concerns about the discriminative validity of these PID-5 domains for externalizing disorders. We would expect both the antagonism and disinhibition trait domains to be related to a variety of psychiatric symptoms, as maladaptive personality traits and psychopathology are known to be strongly related. It would then appear that assessment of either maladaptive personality traits or DBD may be redundant. The HiTOP consortium would argue for the total elimination of the categories as represented in the DBDs, to be replaced by an externalizing dimension at one level of the hierarchy and the maladaptive trait domains of antagonism and disinhibition at another. In this model, all psychopathology is personality, and symptoms of psychopathology are reconceptualized as personality traits. This study cannot provide insight into whether such a reorganization of DBD symptoms would provide improved clinical utility; however, our findings do confirm redundancy and a need for clarification as to whether removing symptoms of psychopathology in favor of personality traits would provide better patient outcomes and a more rigorous conceptualization of psychopathology.

The findings of this study should be regarded cautiously due to several limitations. Instead of doing our research on members of the general community, we chose a sample of psychiatric inpatients. The sample was selected from a heterogeneous and relatively treatment-resistant inpatient population, which limits the generalizability of the data to the general population or uncomplicated cases. In addition, we did not adjust for previous medical conditions or prescription medications that may have influenced the results. Additionally, even though the utilization of an interview tool for assessing psychiatric symptoms (DISC-IV) and a self-report tool for maladaptive traits (PID-5-BF) may be seen as a strength of the study (i.e. reducing method variance), the use of different methodologies for the assessment of psychopathology and personality may have introduced unknown bias. Despite these limitations, the current study provides incremental knowledge on the ongoing debates regarding the usefulness of categorially defined disorders (such as DBDs) as well as the usefulness of reformulating our diagnostic system as a variation in personality traits.

Acknowledgement

The Scientific and Technological Research Council of Turkey (TUBITAK) supported this work under grant 1059B191700955.

The McNair Family Foundation supported Dr. Sharp's research.

Disclosures

The authors declare that they have no conflict of interest.

References

1 Ruiz MA, Pincus AL, Schinka JA. Externalizing Pathology and the Five-Factor Model: A Meta-Analysis of Personality Traits Associated with Antisocial Personality Disorder, Substance Use Disorder, and Their Co-Occurrence. J Pers Disord 2008;22:365–88. https://doi.org/10.1521/pedi.2008.22.4.365.

2 Matthies S, Philipsen A. Comorbidity of Personality Disorders and Adult Attention Deficit Hyperactivity Disorder (ADHD)—Review of Recent Findings. Curr Psychiatry Rep 2016;18:1–7. https://doi.org/10.1007/s11920-016-0675-4.

3 Storebø OJ, Simonsen E. The Association Between ADHD and Antisocial Personality Disorder (ASPD): A Review. J Atten Disord 2016;20:815–24. https://doi.org/10.1177/1087054713512150.

4 Matthies S, Philipsen A. Common ground in Attention Deficit Hyperactivity Disorder (ADHD) and Borderline Personality Disorder (BPD)–review of recent findings. Borderline Personal Disord Emot Dysregulation 2014;1:3. https://doi.org/10.1186/2051-6673-1-3.

5 Miller CJ, Flory JD, Miller SR, Harty SC, Newcorn JH, Halperin JM. Childhood attention-deficit/hyperactivity disorder and the emergence of personality disorders in adolescence: A prospective follow-up study. J Clin Psychiatry 2008;69:1477–84. https://doi.org/10.4088/JCP.v69n0916.

6 Philipsen A, Limberger MF, Lieb K, Feige B, Kleindienst N, Ebner-Priemer U, et al. Attention-deficit hyperactivity disorder as a potentially aggravating factor in borderline personality disorder. Br J Psychiatry 2008;192:118–23. https://doi.org/10.1192/bjp.bp.107.035782.

7 Yoshimasu K, Barbaresi WJ, Colligan RC, Voigt RG, Killian JM, Weaver AL, et al. Childhood ADHD is strongly associated with a broad range of psychiatric disorders during adolescence: a population-based birth cohort study. J Child Psychol Psychiatry 2012;53:1036–43. https://doi.org/10.1111/j.1469-7610.2012.02567.x.

8 Wesseldijk LW, Bartels M, Vink JM, van Beijsterveldt CEM, Ligthart L, Boomsma DI, et al. Genetic and environmental influences on conduct and antisocial personality problems in childhood, adolescence, and adulthood. Eur Child Adolesc Psychiatry 2018;27:1123–32. https://doi.org/10.1007/s00787-017-1014-y.

9 Fischer M, Barkley RA, Smallish L, Fletcher K. Young adult follow-up of hyperactive children: self-reported psychiatric disorders, comorbidity, and the role of childhood conduct problems and teen CD. J Abnorm Child Psychol 2002;30:463–75.

10 Stepp SD, Burke JD, Hipwell AE, Loeber R. Trajectories of attention deficit hyperactivity disorder and oppositional defiant disorder symptoms as precursors of borderline personality disorder symptoms in adolescent girls. J Abnorm Child Psychol 2012;40:7–20. https://doi.org/10.1007/s10802-011-9530-6.

11 Trull TJ, Durrett CA. Categorical and Dimensional Models of Personality Disorder. Annu Rev Clin Psychol 2005;1:355–80. https://doi.org/10.1146/annurev.clinpsy.1.102803.144009.

12 American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. American Psychiatric Association; 2013. https://doi.org/10.1176/appi.books.9780890425596.

13 Clark LA. Assessment and diagnosis of personality disorder: perennial issues and an emerging reconceptualization. Annu Rev Psychol 2007;58:227–57. https://doi.org/10.1146/annurev.psych.57.102904.190200.

14 Krueger RF, Markon KE. Toward a clinically useful and empirically based dimensional model of psychopathology. World Psychiatry 2012;11:23–4.

15 Skodol AE. Personality disorder classification: stuck in neutral, how to move forward? Curr Psychiatry Rep 2014;16:480. https://doi.org/10.1007/s11920-014-0480-x.

16 Widiger TA, Trull TJ. Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. Am Psychol 2007;62:71–83. https://doi.org/10.1037/0003-066X.62.2.71.

17 John O, Naumann L, Soto C.J. Paradigm shift to the integrative big five trait taxonomy. In: O. P. John, R. W. Robins, L. A. Pervin, editors. Handb. Personal. Theory Res., New York, NY: Guilford; 2008, p. 114–58.

18 Krueger RF, Markon KE. The role of the DSM-5 personality trait model in moving toward a quantitative and empirically based approach to classifying personality and psychopathology. Annu Rev Clin Psychol 2014;10:477–501. https://doi.org/10.1146/annurev-clinpsy-032813-153732.

19 Samuel DB, Widiger TA. A meta-analytic review of the relationships between the five-factor model and DSM-IV-TR personality disorders: a facet level analysis. Clin Psychol Rev 2008;28:1326–42. https://doi.org/10.1016/j.cpr.2008.07.002.

20 Krueger RF, Derringer J, Markon KE, Watson D, Skodol AE. Initial construction of a maladaptive personality trait model and inventory for DSM-5. Psychol Med 2012;42:1879–90. https://doi.org/10.1017/S0033291711002674.

21 De Fruyt F, De Clercq B, De Bolle M, Wille B, Markon K, Krueger RF. General and maladaptive traits in a five-factor framework for DSM-5 in a university student sample. Assessment 2013;20:295–307. https://doi.org/10.1177/1073191113475808.

22 Griffin SA, Samuel DB. A closer look at the lower-order structure of the Personality Inventory for DSM-5: comparison with the Five-Factor Model. Personal Disord 2014;5:406–12. https://doi.org/10.1037/per0000074.

23 Wright AGC, Simms LJ. On the structure of personality disorder traits: conjoint analyses of the CAT-PD, PID-5, and NEO-PI-3 trait models. Personal Disord 2014;5:43–54. https://doi.org/10.1037/per0000037.

24 Gomez R, Corr PJ. ADHD and personality: A meta-analytic review. Clin Psychol Rev 2014;34:376–88. https://doi.org/10.1016/j.cpr.2014.05.002.

25 Knouse LE, Traeger L, O'Cleirigh C, Safren SA. Adult attention deficit hyperactivity disorder symptoms and five-factor model traits in a clinical sample: A structural equation modeling approach. J Nerv Ment Dis 2013;201:848–54. https://doi.org/10.1097/NMD.0b013e3182a5bf33.

26 Nigg JT, Blaskey LG, Huang-Pollock CL, Hinshaw SP, John OP, Willcutt EG, et al. Big five dimensions and ADHD symptoms: Links between personality traits and clinical symptoms. J Pers Soc Psychol 2002;83:451–69. https://doi.org/10.1037/0022-3514.83.2.451.

27 Van Dijk FE, Mostert J, Glennon J, Onnink M, Dammers J, Vasquez AA, et al. Five factor model personality traits relate to adult attention-deficit/hyperactivity disorder but not to their distinct neurocognitive profiles. Psychiatry Res 2017;258:255–61. https://doi.org/10.1016/j.psychres.2017.08.037.

28 Miller J, Lynam D. Structural models of personality and their relation to antisocial behavior: A meta‐analytic review. Criminology 2001;39:765–98. https://doi.org/10.1111/j.1745-9125.2001.tb00940.x.

29 Miller J, Lynam D, Leukefeld C. Examining antisocial behavior through the lens of the five factor model of personality. Aggress Behav 2003;29:497–514. https://doi.org/10.1002/ab.10064.

30 Trull TJ, Sher KJ. Relationship Between the Five-Factor Model of Personality and Axis I Disorders in a Nonclinical Sample. J Abnorm Psychol 1994;103:350–60. https://doi.org/10.1037/0021-843X.103.2.350.

31 Smith TE, Samuel DB, Ruiz MA, Pincus AL, Schinka JA, Gomez R, et al. Externalizing behavior through the lens of the five-factor model: A focus on agreeableness and conscientiousness. Psychiatry Res 2017;31:376–88. https://doi.org/10.1037/a0013742.

32 Smith TE, Samuel DB. A Multi-method Examination of the Links Between ADHD and Personality Disorder. J Pers Disord 2017;31:26–48. https://doi.org/10.1521/pedi_2016_30_236.

33 Sleep CE, Hyatt CS, Lamkin J, Maples-Keller JL, Miller JD. Examining the relations among the DSM-5 alternative model of personality, the five-factor model, and externalizing and internalizing behavior. Personal Disord Theory, Res Treat 2018;9:379–84. https://doi.org/10.1037/per0000240.

34 Klimstra TA, Hale WW, Raaijmakers QAW, Branje SJT, Meeus WHJ. Maturation of personality in adolescence. J Pers Soc Psychol 2009;96:898–912. https://doi.org/10.1037/a0014746.

35 Kaess M, Brunner R, Chanen A. Borderline Personality Disorder in Adolescence. Pediatrics 2014;134:782–93. https://doi.org/10.1542/peds.2013-3677.

36 Steinberg L. Cognitive and affective development in adolescence. Trends Cogn Sci 2005;9:69–74. https://doi.org/10.1016/j.tics.2004.12.005.

37 American Psychiatric Association., American Psychiatric Association. Task Force on DSM-IV. Diagnostic and statistical manual of mental disorders : DSM-IV-TR. American Psychiatric Association; 2000.

38 Shaffer D, Fisher P, Lucas CP, Dulcan MK, Schwab-Stone ME. NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV): description, differences from previous versions, and reliability of some common diagnoses. J Am Acad Child Adolesc Psychiatry 2000;39:28–38. https://doi.org/10.1097/00004583-200001000-00014.

39 Achenbach TM, Rescorla LA. Manual for the ASEBA school-age forms & profiles: an integrated system of multi-informant assessment. Burlington, VT: University of Vermont. Research Center for Children, Youth, & Families; 2001.

40 Gore WL, Widiger TA. The DSM-5 dimensional trait model and five-factor models of general personality. J Abnorm Psychol 2013;122:816–21. https://doi.org/10.1037/a0032822.

41 Jones SE, Miller JD, Lynam DR. Personality, antisocial behavior, and aggression: A meta-analytic review. J Crim Justice 2011;39:329–37. https://doi.org/10.1016/J.JCRIMJUS.2011.03.004.

42 DeYoung CG, Peterson JB, Séguin JR, Tremblay RE. Externalizing Behavior and the Higher Order Factors of the Big Five. J Abnorm Psychol 2008;117:947–53. https://doi.org/10.1037/a0013742.

43 Crego C, Gore WL, Rojas SL, Widiger TA. The discriminant (and convergent) validity of the Personality Inventory for DSM-5. Personal Disord Theory, Res Treat 2015;6:321–35. https://doi.org/10.1037/per0000118.

44 Hopwood CJ, Thomas KM, Markon KE, Wright AGC, Krueger RF. DSM-5 personality traits and DSM–IV personality disorders. J Abnorm Psychol 2012;121:424–32. https://doi.org/10.1037/a0026656.

45 Anderson JL, Sellbom M, Salekin RT. Utility of the Personality Inventory for DSM-5-Brief Form (PID-5-BF) in the Measurement of Maladaptive Personality and Psychopathology. Assessment 2018;25:596–607. https://doi.org/10.1177/1073191116676889.

46 Tackett JL. Evaluating models of the personality-psychopathology relationship in children and adolescents. Clin Psychol Rev 2006;26:584–99. https://doi.org/10.1016/J.CPR.2006.04.003.

47 Anderson JL, Sellbom M, Salekin RT. Utility of the Personality Inventory for DSM-5–Brief Form (PID-5-BF) in the Measurement of Maladaptive Personality and Psychopathology. Assessment 2018;25:596–607. https://doi.org/10.1177/1073191116676889.

48 Kotov R, Waszczuk MA, Krueger RF, Forbes MK, Watson D, Clark LA, et al. The Hierarchical Taxonomy of Psychopathology (HiTOP): A dimensional alternative to traditional nosologies. J Abnorm Psychol 2017;126:454–77. https://doi.org/10.1037/ABN0000258.

49 Clark LA. Temperament as a unifying basis for personality and psychopathology. J Abnorm Psychol 2005;114:505–21. https://doi.org/10.1037/0021-843X.114.4.505.

50 Krueger RF, Kotov R, Watson D, Forbes MK, Eaton NR, Ruggero CJ, et al. Progress in achieving quantitative classification of psychopathology. World Psychiatry 2018;17:282–93. https://doi.org/10.1002/WPS.20566.