Journal of Personality Disorders, 30, 2016, 236

A MULTI-METHOD EXAMINATION OF THE LINKS BETWEEN ADHD AND PERSONALITY DISORDER

Tess E. Smith, BS, and Douglas B. Samuel, PhD

An existing relationship between attention-deficit/hyperactivity disorder (ADHD) and personality disorder (PD) has been well documented, yet research has been limited by possible selection and self-report biases as well as PD models of questionable validity. This study examined the relationship of ADHD with adult personality traits and disorders in a sample that included individuals pre-screened for elevated childhood ADHD symptoms. Four hundred thirty-nine undergraduates completed retrospective reports of childhood ADHD symptoms as well as current ratings of ADHD symptoms, traditional PD categories, and the *DSM-5* alternative PD trait model. To overcome potential biases in self-report, 161 parents of the participants provided ratings of childhood and current functioning. Results suggest that while self-report of ADHD was significantly correlated with several PDs, parent reports obtained somewhat more specific links with adult dependent, borderline, and paranoid PDs. Most importantly, the *DSM-5* Section III dimensional trait model provided greater specificity, as the trait of distractibility consistently emerged as a unique predictor, and thus appeared more useful for understanding the developmental pathways of ADHD.

Attention-deficit/hyperactivity disorder (ADHD) is a behavioral condition that makes focusing on everyday requests or routines challenging (American Psychiatric Association [APA], 2013). This includes, but is not limited to problems getting organized, staying focused, and making realistic plans. Further, ADHD is associated with difficulties in emotional and behavioral control, including poor social relationships and higher rates of accidental injury or death (Barkley, 2014). ADHD is typically diagnosed in school-aged children and has only recently been considered as a disorder that can persist into adulthood (Biederman et al., 2010). In fact, the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; APA, 2013) has updated ADHD symptoms to more accurately diagnose adults who might continue to be affected by ADHD. While it is now recognized that ADHD might continue to manifest throughout adulthood, prior studies have also suggested a link

From Department of Psychological Sciences, Purdue University, West Lafayette, Indiana.

This research was completed as part of the Research Focused Honors Program and was partially funded by the Purdue University Psychological Sciences Undergraduate Research Fund.

Address correspondence to Tess E. Smith, who is now at the Department of Psychology, University of Kentucky, 111H Kastle Hall, Lexington, KY 40506. E-mail: tess.smith@uky.edu

between ADHD and the development of adult psychopathology (e.g., Jarrett & Ollendick, 2008). Personality disorders (PDs) have received particular attention for potential links to childhood ADHD (Anckarsäter et al., 2006; Matthies et al., 2011; Philipsen et al., 2008). PDs are associated with ways of thinking and feeling about oneself and others that significantly and adversely affect how an individual functions (APA, 2013). They are historically defined as adult disorders, however recent work suggests developmental aspects of PDs emerge by adolescence (Sharp & Tackett, 2014).

Understanding the relation between ADHD and PD might be useful for examining the developmental antecedents of PD, as well as outcomes of ADHD. Research has established strong associations between psychopathology and traits, and several models have been proposed to explain this relationship (Nigg, 2006; Tackett, 2006). Many of these theoretical models have received empirical support, including the scar or complication model, the vulnerability model, and the spectrum model (De Bolle, Beyers, De Clercq, & De Fruyt, 2012; van Leeuwen, Mervielde, De Clercq, & De Fruyt, 2007). The scar model suggests that the development of psychopathology changes an individual's personality, while the vulnerability model suggests traits might make an individual more likely to develop psychopathology. The spectrum model, however, theorizes that psychopathology and traits lie on the same continuum (Nigg, 2006; Tackett, 2006). Regardless of the model specifying the link, exploring the nature of the developmental relationship between traits and psychopathology holds important implications for identifying and predicting the course of psychopathology. Moreover, advances in the conceptualization of pathological trait dimensions that underlie PD (see *DSM-5* Section III)—and perhaps all of psychopathology (Krueger & Eaton, 2010)—allow an excellent lens through which to quantify the similarities. Therefore, examining the overlap between ADHD and PD might shed light on the possibility of ADHD as a development antecedent of PD, or the possible utility of identifying cross-cutting dimensions that serve as risk factors for the development of ADHD and PD.

When examining the relationship of ADHD and PD, previous studies have suggested a particularly high co-occurrence between childhood ADHD and adult borderline, antisocial, and avoidant PD (Fischer, Barkley, Smallish, & Fletcher, 2002; Mannuzza et al., 1993; Miller et al., 2008; Philipsen et al., 2008; Sellbom & Jarrett, 2014; Stepp, Burke, Hipwell, & Loeber, 2012; Thapar et al., 2006). For example, within the general population, the median prevalence of PDs is about 10%, with some variability between samples and diagnostics procedures (Lenzenweger, 2008). However, Matthies and colleagues (2011) showed the prevalence of PDs to be as high as 25% within a sample of adults seeking treatment for ADHD symptoms. The most frequent PDs in this sample were avoidant (21.7%) and borderline (18.3%).

Other studies have taken a more narrow approach to examining the link with ADHD by focusing on a single PD. Given that borderline PD (BPD) and ADHD share clinical features such as emotional dysregulation and impulsivity, Philipsen and colleagues (2008) assessed childhood and adult ADHD symptoms in a group of women seeking treatment for BPD and found a high rate of childhood (41.5%) and adult (16.1%) ADHD. Not surprisingly, childhood ADHD severity was associated with greater severity of adult BPD

symptoms in the same sample (Philipsen et al., 2008). Fewer studies have attempted to assess the co-occurrence between ADHD and PD longitudinally, which is critical to understanding the developmental relationship between childhood ADHD and adult PD. However, Miller and colleagues (2008) examined the comorbidity of PDs longitudinally in adolescents diagnosed with ADHD between the ages of 7 and 11. The study found individuals with childhood ADHD significantly more likely to be diagnosed with borderline, antisocial, avoidant, and narcissistic PD at the 16 to 26 year follow-up than the non-ADHD controls (Miller et al., 2008). Additionally, Mannuzza and colleagues (1993) examined the outcomes of adult males diagnosed with ADHD in childhood followed longitudinally for 13–19 years. Of those diagnosed with childhood ADHD, 18% had antisocial PD, compared to only 2% of the non–ADHD control group (Mannuzza et al., 1993). While research on this relationship is somewhat mixed, childhood ADHD has been linked most consistently with adult BPD, while research has also established a strong relationship with antisocial and avoidant PDs.

Several fundamental questions remain about the relation between ADHD and adult PD. For example, acknowledged limitations of the current categorical PD model (e.g., Trull & Durrett, 2005) complicate the understanding of the precise links between PD and ADHD. The *DSM-5* conceptualizes PDs as ten discrete categories that are distinct from each other and other mental disorders (APA, 2013). This categorical model has received heavy criticism by researchers and clinicians who note that it is limited by excessive diagnostic co-occurrence, inadequate coverage of maladaptive personality functioning, and arbitrary boundaries for diagnosis, as well as lacking an adequate scientific base (Clark, 2007; Krueger & Markon, 2012; Skodol, 2014; Widiger & Trull, 2007). In light of these problems, dimensional trait models have been proposed that would improve the classification of PD. In particular, the five-factor model (FFM; John, Naumann, & Soto, 2008) of personality has received the most empirical support (Krueger & Markon, 2014; Samuel & Widiger, 2008; Widiger & Trull, 2007).

This fact is important in that even though the majority of the literature on ADHD focuses on categorical diagnoses of PD (Matthies et al., 2011), some research has examined relations of ADHD with general personality dimensions (e.g., Martel, Nigg, & von Eye, 2009; May & Bos, 2000; Miller et al., 2013; Nigg et al., 2002). These studies have been helpful in outlining generally consistent relations between these constructs that are consistent with the conceptualizations of ADHD. For example, Nigg and colleagues (2002) examined the relationship between the Big Five personality dimensions and ADHD symptoms both recalled from childhood and reported concurrently. This study reported that the inattention-disorganization symptoms of ADHD were related to low conscientiousness as well as neuroticism, whereas the hyperactivity-impulsivity symptoms of ADHD were linked to low agreeableness. Other studies taking a dimensional approach have suggested that the relationship between ADHD and personality traits may vary across age groups. Martel and colleagues (2009) looked at personality traits in relation to ADHD within a sample of children (7–12 years) and a sample of adolescents (13–18 years). It was concluded that in the child sample conscientiousness

was related to inattention, while agreeableness and neuroticism were related to hyperactivity-impulsivity. However, in an adolescent sample, conscientiousness was related to both inattention and hyperactivity-impulsivity (Martel et al., 2009). Thus, although existing research on FFM domains and ADHD provides guidance to the relations with dimensional models of PD, this remains to be clarified using measures designed to assess the maladaptive ranges of the FFM traits. Further, it would be helpful to examine these relations at the level of the lower-order facets.

In fact, the *DSM-5* now specifies an alternative diagnostic system for PDs in Section III that includes a model of pathological traits, which represent "maladaptive variants of the five domains of the extensively validated and replicated personality model known as the 'Big Five,' or FFM." Ergo, investigating the relations of these maladaptive traits with ADHD represents a logical extension of existing work. This alternative dimensional trait model in *DSM-5* consists of 25 traits that are operationalized by the Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012). Research has indicated that these traits can be sorted into five higher-order domains (negative affectivity, detachment, psychoticism, antagonism, and disinhibition; Krueger et al., 2012) that are largely consistent with domains from more general measures of the FFM (De Fruyt et al., 2013; Griffin & Samuel, 2014; Wright & Simms, 2014) and pathological scales, such as from the PSY-5 (Anderson et al., 2013). A key advantage of these traits is that they provide a more fine-grained, homogeneous assessment of PD and thus may be particularly well-suited for explicating the precise relationship of ADHD to PD. Thus, a study which examines the link between childhood ADHD and these adult PD traits would be particularly informative.

Another complication with extant research involves reliance on self-reports of childhood ADHD symptoms. Most research examining ADHD symptoms retrospectively relies solely on self-report, and those examining the validity of this method vary in their results (Miller, Newcorn, & Halperin, 2010). It has been suggested that an informant, such as a parent, might provide more reliable retrospective ratings (Barkley, Fischer, Smallish, & Fletcher, 2002). Sibley and colleagues (2012) examined the use of self versus informant raters of current and childhood ADHD criteria and found parent retrospective report of symptoms and impairment to be more sensitive to clinician diagnosis in childhood than retrospective self-report. Further, research has indicated that while young adults with ADHD tend to under-report current symptoms, those without ADHD tend to over-report symptoms (Sibley et al., 2012). Therefore, including informant report of both current and retrospective ratings of ADHD symptoms would further help to clarify the relationship between ADHD and PD.

A final notable aspect of the existing literature is that most previous studies examining ADHD in relation to PDs have utilized treatment-seeking clinical samples (i.e., Carlotta, Borroni, Maffei, & Fossati, 2013; Matthies et al., 2011). Although clinical samples have obvious advantages for studying psychopathology, there may also be advantages to casting a wider net. For example, utilizing a treatment-seeking sample introduces a possible bias toward those that self-select for therapy that complicates the findings. It is known that individuals with traits relevant to borderline PD seek out services at a greater rate, which artificially inflates the link of BPD with other conditions, such as ADHD. Further, the use

of clinical samples obviously restricts the range of ADHD symptoms which may suppress correlations with personality traits and disorder. Given that research has indicated that ADHD might be better conceptualized dimensionally (Marcus & Barry, 2011), we ultimately adopted a strategy consistent with the National Institute of Mental Health's Research Domain Criteria (RDoC) approach that seeks to sample across the range of the underlying dimension. We suggest that although clinical samples are certainly valuable, community samples might present particular advantages as complements, as they are likely to include a fuller range of symptoms. DuPaul and colleagues (2001) suggest that the prevalence of problematic ADHD symptoms in university populations approximates that expected in more general community samples. Therefore, a university sample should still include individuals with clinically significant symptoms, yet also include a more diverse range of all possible symptom levels than would be seen in purely clinical samples. Thus, the present study aimed to overcome potential self-selection bias introduced by the use of clinical treatment-seeking samples by utilizing a university sample.

In sum, several prior studies have suggested appreciable links between childhood ADHD and aspects of adult PD. Nonetheless, this existing research has been limited by inadequate categorical PD models and biases related to self-report, and complicated by self-selection in clinical samples. This study, therefore, aimed to extend this knowledge by examining the relationship between ADHD and PD using a method that accounts for these three possible limitations. Specifically, (1) we assessed PDs both in terms of the traditional categories and pathological traits in the *DSM-5* alternative PD model, (2) we augmented the self-report questionnaires with parent ratings of ADHD symptoms as well as personality traits, and (3) we utilized a university sample that was oversampled for individuals with clinically significant ADHD symptoms in childhood. Most generally, consistent with past work, we fully expected to obtain higher correlations among concurrently assessed variables than between current and retrospective variables. More specifically, it was hypothesized that ADHD would evince stronger associations with certain PD constructs than others (including borderline, antisocial, and avoidant), but that discriminant validity would be elusive due to limitations in the PD categories themselves. It was hypothesized that the ADHD–PD relations would be more clearly distinguished by the dimensional traits from *DSM-5*. Based on prior work with more general FFM measures, we hypothesized that ADHD would be associated with low levels of conscientiousness and high neuroticism. In regard to pathological traits, we hypothesized that ADHD would be most strongly associated with the PID-5 domain of disinhibition and specific facets such as distractibility and impulsivity, as well as the domain of negative affectivity.

METHOD

RECRUITMENT AND PROCEDURES

Participants included undergraduate students at a large Midwest university who completed an online self-assessment in exchange for credit in an introductory psychology course. In order to ensure an adequate range of clinical

ADHD symptoms, a subsample of individuals pre-screened for a diagnosis of ADHD or elevated levels of childhood ADHD symptoms were invited to participate in the study. All undergraduate participants were provided with a link to an online survey tool (i.e., Qualtrics) and asked to indicate their informed consent to participate in the study before completing a series of self-report questionnaires. These included a series of demographic questions including race, ethnicity, gender, year in school, and age. Additionally, they reported information regarding their primary and secondary schooling, such as public or private institution, rural or urban setting, and size of graduating class, as well as information on their academic achievement, including GPA and SAT/ACT scores. Information concerning past and present use of stimulant medications was also collected.

In addition to the demographic and background information, participants completed retrospective ratings of childhood ADHD symptoms as well as assessments of current ADHD symptoms and measures of personality and personality disorder. Participants also completed measures of risk-taking behavior, psychosocial functioning, and additional psychiatric symptoms, which are not a focus of the present investigation.

After completing the study, participants were asked to provide their parents' contact information so they could be asked to serve as informant raters. Parents were sent an e-mail invitation to take part in the study. If an e-mail address was not provided, parents received a sealed invitation in the mail. Parents who completed the study were entered into a drawing for one of three prizes (i.e., one $300 gift card and two $100 gift cards). Parent participants indicated their informed consent and then rated their child's ADHD symptoms, both currently and retrospectively (ages 6 through 10), and personality traits.

PARTICIPANTS

Of the 582 undergraduates who completed the online self-assessment, 143 were eliminated as invalid based on excessive missing data, long strings of identical answers, and/or responses to invalidity indicators from the Personality Diagnostic Questionnaire 4+ (PDQ-4+). Thus, the final sample included 439 undergraduate students. Of this sample, 63 (14%) were recruited through a prescreen assessing for elevated childhood ADHD symptoms, such that the final sample included 49 (11%) undergraduates who reported an ADHD diagnosis and 196 (45%) undergraduates who reported elevated levels of ADHD symptoms in childhood (e.g., a score of 46 or higher on the short version of the Wender Utah Rating Scale (WURS-k; Ward, Wender, & Reimherr, 1993). The age of these participants ranged from 17 to 31 with an average of 19.2 years (*SD* = 1.4). Most participants were freshman (57%) or sophomores (22%), and the majority were Caucasian (76%). In terms of race, the remainder were Asian (17%), African American (6%), Native Hawaiian or other Native Islander (1%), and 5% who described their ethnicity as Hispanic or Latino. Most participants were single or never married (98%).

We received completed ratings from 138 informants (31%) nominated by the participants. The majority of the informants were the mother (81%) or father (16%) of the undergraduate, with the remainder being the grandmother,

aunt, cousin, or sister (4%).[1] We conducted a series of *t*-tests and chi-square analyses to determine if those with parent ratings differed from those without on the variables of interest. The subsample of participants with informant ratings did not significantly differ from the remaining sample in terms of sex, ethnicity, self-reported ADHD diagnosis, domains of the Five Factor Model Rating Form (FFMRF), domains/facets of the Personality Inventory for DSM-5 (PID-5), or PD scores on the PDQ-4+. There was also no significant difference in terms of self-reported adult ADHD scores on the Modified Adult Self Report Scale (ASRS), but those without parent ratings did have marginally higher scores on the WURS-K, $t = 1.98$, $p = .049$; $m = 47.4$ ($SD = 18.0$) versus 44.4 (15.1). In addition, the parents of students who were younger (both in terms of age and year of study) were significantly more likely to provide complete ratings. Finally, there was a significant difference in terms of race, such that parents of students who identified as white were more likely to provide ratings than those who identified as Asian or African American. The latter may simply reflect a language barrier among the parents of Asian students who were likely international.

MEASURES

Short Version of the Wender Utah Rating Scale (WURS-k). The WURS-k (Retz-Junginger et al., 2002; Ward et al., 1993) is a 25-item questionnaire that retrospectively assesses childhood ADHD symptoms. Items ask questions about childhood behaviors and experiences and are rated on a five-point Likert scale (*Not at all* to *Very much*), for example, "As a child I was (or had) disobedient with parents, rebellious, sassy." Taylor, Deb, and Unwin (2011) found the WURS-k to have the best combination of psychometric properties when compared to 14 other ADHD scales, with Cronbach's alpha values ranging from .86 to .92 across studies. In the present research, $\alpha = .94$ for self-report, and $\alpha = .91$ for parent-report.

Modified Adult Self-Report Scale (Modified Version of ASRS-V1.1). The ASRS-V1.1 (Adler, Kessler, & Spencer, 2003) is an 18-item self-report symptom checklist that assesses the *DSM-IV-TR* ADHD criteria. Self-ratings of symptoms over the past 6 months are assessed on a Likert scale, with responses *never*, *rarely*, *sometimes*, *often*, or *very often*. The ASRS-V1.1 was found to have Cronbach's alpha values ranging from .75 to .89 (Taylor et al., 2011). Importantly, the ASRS-V1.1 was modified in this study to include the updated descriptions of ADHD criteria in *DSM-5*, designed to more usefully detect adult symptoms. For example, the original question, "How often do you feel overly active and compelled to do things, like you were driven by a motor," was updated to include the *DSM-5* descriptions, now asking, "How often do you feel overly active and compelled to do things, like you were driven by a motor (e.g., unable to be or uncomfortable being still for extended time, as in restaurants, meetings; others may feel you are restless or difficult to keep up

1. Percentages add up to more than 100, due to rounding.

with)?" Cronbach's alphas in the current sample were α = .91 for self-report, and α = .94 for parent-report.

Personality Diagnostic Questionnaire 4+ (PDQ-4+). The PDQ-4+ (Hyler, 1994) is a self-report questionnaire that uses 99 items to assess overall personality pathology. The items are true/false statements that correspond to the *DSM-IV-TR* (and thus *DSM-5*) diagnostic criteria of personality disorders. The PDQ-4+ is commonly used within clinical research (Bagby & Farvolden, 2004; Widiger & Boyd, 2009). Additionally, the PDQ-4+ includes a series of validity indicators, using a *Too Good* scale (i.e., "I have never told a lie" and "There are some people I don't like") and a *Suspect Questionnaire* scale (i.e., "I have lied a lot on this questionnaire" and "A nuclear war may not be such a bad idea"). The sum of endorsement of these questions was used to eliminate invalid responses. Cronbach's alpha values for the ten PD scales ranged from .43 to .70, with a median of .56 in this sample. This is consistent with previous studies examining the internal consistency of the PDQ-4+ (Bagby & Farvolden, 2004).

Personality Inventory for DSM-5 (PID-5). The PID-5 (Krueger et al., 2012) was designed by the *DSM-5* Personality and Personality Disorders Workgroup in order to assess maladaptive personality traits that are included within Section III of the *DSM-5*. It includes 220 items rated on a 4-point scale that represent 25 lower-order traits that have been sorted into five higher-order maladaptive traits (negative affectivity, detachment, antagonism, disinhibition, and psychoticism). In this sample, Cronbach's alpha values ranged from .68 to .95, with a median of .85 for the 25 lower-order traits, and from .75 to .85, with a median of .80 for the five higher-order traits.

Five Factor Model Rating Form (FFMRF). The FFMRF (Mullins-Sweatt & Widiger, 2006) is a one-page rating form that contains 30 items assessing the domains of the FFM and their 30 facets. The 30 items are organized so that six items, rated on a Likert scale, correspond to each of the five domains. The facets are assessed by 2–3 adjectives describing each pole and are rated as *extremely low*, *low*, *neither high nor low*, *high*, or *extremely high*. The FFMRF has been used as a self-report measure of the FFM in several studies and shows appreciable convergent and discriminant validity with lengthier measures (Samuel, Mullins-Sweatt, & Widiger, 2013). Within the current sample, Cronbach's alpha values ranged from .71 to .85, with a median of .77 for self-report, and from .66 to .89, with a median of .82 for parent-report.

DATA ANALYSIS

Although respondents with excessive missing data were removed casewise, as described earlier, there remained instances of missing data. Those remaining missing variables were deleted in a pairwise fashion for given correlations, with the result that the total valid *n* for given comparisons ranged as low as 432 for the self-reported data and as low as 131 for the parent-reported data. Distributional characteristics of PDQ-4+ PD categories, as well as PID-5 trait

domains, were examined. The PDQ-4+ PD categories, aside from obsessive-compulsive PD (OCPD), were somewhat positively skewed, but only antisocial (1.049) and dependent (1.083) were above 1.0. All kurtosis values were below 1.0, but the PDQ-4 paranoid and avoidant scales were at least somewhat platykurtic, while schizoid, borderline, antisocial, and dependent evinced somewhat leptokurtic distributions. All PID-5 trait domains also exhibited positive skew, with psychoticism the most notable (.987). Negative affect, psychoticism, and antagonism evinced slightly platykurtic distributions.

RESULTS

CORRELATIONS BETWEEN SELF- AND PARENT-REPORTED ADHD ACROSS THE LIFESPAN

A first step in our analysis was to examine the correlations between childhood and adult ADHD ratings provided by parents and self-report. Self- and parent-report of childhood ADHD symptoms correlated .57 ($p < .01$), whereas self- and parent-report of adult ADHD symptoms correlated .39 ($p < .01$). Although both correlations were significant, there was greater agreement on the retrospective reporting of symptoms displayed in childhood than the students' current ADHD symptoms ($z = 1.94$, $p = .03$).

RELATIONS WITH *DSM-5* PD CATEGORICAL CONSTRUCTS

The first three columns of Table 1 present point-biserial correlations between the dimensional PDQ-4+ PD scores and the categorical variables of presence of an ADHD diagnosis, ever being prescribed a stimulant, and currently taking a stimulant. The remaining columns in Table 1 present Pearson correlations between ADHD symptom levels and dimensional scores for the *DSM-5* PD categorical constructs. Pearson correlations for self-reported childhood ADHD symptoms with the PDs ranged from .18 (narcissistic) to .34 (schizotypal), with a median of .24. Self-reported adult ADHD symptoms revealed a similar distribution, with correlations ranging from .23 (schizoid) to .41 (borderline), with a median of .31. Parent-reported childhood ADHD symptoms, on the other hand, showed more variability in their relations with self-reported PDs, with correlations ranging from .00 (histrionic) to .23 (borderline), with a median of .03, and parent-reported adult ADHD symptoms ranging from .01 (histrionic) to .28 (paranoid) with a median of .17. The most consistent relations with ADHD, across raters as well as across retrospective and current symptoms, were observed for BPD. The BPD scores correlated significantly with historical ADHD diagnosis (.12) and stimulant prescription (.13) as well as retrospective and current ADHD symptoms. The correlation between BPD and ADHD symptoms ranged from .23 (parent-report of childhood symptoms) to .41 (self-report of adult symptoms). Similarly, OCPD correlated significantly with historical ADHD diagnosis (.20), historical stimulant prescription (.17), and current stimulant use (.16), as well as most ADHD symptom measures. Although the relation between OCPD and parent-reported childhood ADHD was

TABLE 1. Correlations of ADHD and Personality Disorders Constructs

PDQ-4+	ADD or ADHD diagnosis	Ever prescribed stimulant	Currently taking stimulant	Self-report ADHD		Parent-report ADHD	
				Childhood	Adult	Childhood	Adult
Paranoid	.06	.08	.01	.27**	.30**	.17*	.28**
Schizoid	.07	.03	.00	.20**	.23**	.02	.14
Schizotypal	.03	.04	–.02	.34**	.32**	.03	.17*
Histrionic	.03	.05	.04	.20**	.24**	.00	.01
Narcissistic	.05	.05	–.03	.18**	.25**	.02	.10
Borderline	.12**	.13**	.08	.33**	.41**	.23**	.24**
Antisocial	.05	.06	.01	.30**	.32**	.03	.16
Avoidant	–.07**	–.07	–.06	.20**	.29**	.03	.14
Dependent	.05	.02	.02	.26**	.36**	.14	.27**
Obsessive-Compulsive	.20**	.17**	.16**	.21**	.33**	.11	.22*
Mdn	.05	.05	.01	.24	.31	.03	.17

Note. Self-report $n = 437$, parent-report $n = 137$. PDQ-4+ = Personality Diagnostic Questionnaire 4+; ADD = Attention-Deficit Disorder; ADHD = Attention-Deficit/Hyperactivity Disorder; *Mdn* = Median. *$p < .05$. **$p < .01$.

non-significant ($r = .11$), the relations with parent-reported adult ADHD and self-reported ADHD were all significant and above .20.

In order to move beyond the zero-order correlations and probe for unique links between PDs and ADHD, we also conducted multivariate analyses. In order to maximize covariance, we regressed self-reported, adult ADHD symptoms on the ten dimensional PD scores from the PDQ-4, entered simultaneously. Table 2 summarizes the regression analyses of self-reported, adult ADHD symptoms as predictors of PD scores. Results suggested that four PDs were significant predictors ADHD: Borderline ($\beta = .19$; $p < .01$, $R^2 = .27$), antisocial ($\beta = .18$; $p < .01$), dependent ($\beta = .18$; $p < .01$), and OCPD ($\beta = .14$, $p < .01$). Thus, it appeared that there were multiple pathways between ADHD and PD categories. Results of regressing parent-reported adult ADHD symptoms on the self-report ten dimensional PD scores from the PDQ-4 suggested that dependent PD was the only significant predictor of ADHD ($\beta = .28$; $p < .05$, $R^2 = .17$).

CORRELATIONS WITH *DSM-5* ALTERNATIVE PD TRAIT MODEL

The relations between ADHD–related variables and dimensional representations of PD traits from the PID-5 are presented in Table 3. Point-biserial correlations between the presence of an ADHD diagnosis, ever being prescribed a stimulant, and currently taking a stimulant with the domains and facets of the PID-5 are provided in the first three columns. Pearson correlations between self- and parent-reported ADHD symptoms and the PID-5 are reported in the remaining columns. Domain-level results revealed moderate to large correlations between self-reported ADHD symptoms, both retrospective and current, with all five PID-5 domains, although the strongest relationships were for

TABLE 2. Personality Disorder Categories as Predictors of Adult ADHD

PDQ-4+ Predictors	Self-report of ADHD B (β)
Paranoid	.14 (.02)
Schizoid	.33 (.04)
Schizotypal	.11 (.02)
Histrionic	–.24 (–.03)
Narcissistic	–.34 (–.05)
Borderline	1.29* (.19)
Antisocial	1.63* (.18)
Avoidant	.40 (.07)
Dependent	1.25* (.18)
Obsessive-Compulsive	1.0** (.14)
Model R^2	.27

Note. PDQ-4+ = Personality Diagnostic Questionnaire 4+; ADHD = Attention-Deficit/Hyperactivity Disorder. *$p < .01$.

disinhibition. As expected, the concurrent ADHD ratings correlations with the PID-5 were generally higher than the retrospective childhood ADHD ratings correlations with the PID-5. For example, disinhibition correlated .66 with adult ADHD symptoms and .52 with childhood symptoms. Psychoticism also correlated highly with self-reported ADHD in adulthood (r = .47) and childhood (r = .43). The pattern of correlations was slightly different when considering the informants' ADHD ratings as negative affectivity also evinced a strong correlation for parent report of adult (r = .38) and childhood (r = .23) symptoms.

The PID-5 facets provided even more distinctiveness regarding the relation with ADHD symptoms. The distractibility facet from disinhibition consistently revealed the highest correlations with all the markers of ADHD. This included a point-biserial correlation of .27 with a historical ADHD diagnosis, .20 with historical stimulant prescription, and .17 with current stimulant use, as well as very strong correlations with concurrent and retrospective ADHD symptoms reported by the participant and their informant. Most notably, distractibility correlated .71 with self-report of adult ADHD symptoms, suggesting that these scales are assessing very similar constructs. The facet of perseveration from the domain of negative affectivity also consistently correlated strongly with ADHD symptoms, and the effects were larger for self-report than informant-report. Another, perhaps more surprising, correlate of ADHD symptoms was the facet of perceptual dysregulation from psychoticism. Perceptual dysregulation correlated .50 with adult and .45 with childhood self-reported ADHD.

In order to assess unique relations between PID-5 traits and ADHD, multivariate analyses in the form of a multiple regression were conducted. All PID-5 traits were entered simultaneously in predicting adult ADHD scores.

TABLE 3. Correlations of ADHD and *DSM-5* Section III Dimensional Trait Model

PID-5 scales	ADD or ADHD diagnosis	Ever prescribed stimulant	Currently taking stimulant	Self-report ADHD		Parent-report ADHD	
				Childhood	Adult	Childhood	Adult
Negative Affectivity	.06	.05	.02	.39**	.41**	.23**	.38**
Detachment	–.02	–.05	–.08	.35**	.34**	.21*	.26**
Psychoticism	.08	.07	.00	.43**	.47**	.13	.25**
Antagonism	.08	.07	.01	.30**	.33**	.14	.25**
Disinhibition	.19**	.15**	.09	.52**	.66**	.22**	.36**
Negative Affectivity							
Emotional Lability	.05	.03	.05	.36**	.38**	.22*	.31**
Anxiousness	.06	.07	.05	.36**	.40**	.20*	.37**
Separation Insecurity	.04	.02	–.04	.28**	.25**	.18*	.32**
Perseveration	.15**	.11*	.04	.43**	.50**	.26**	.36**
Submissiveness	–.04	–.05	.10*	.18**	.24**	.08	.17
Depressivity	.00	.00	–.04	.39**	.39**	.20*	.28**
Detachment							
Withdrawal	–.02	–.05	–.09	.29**	.24**	.20*	.28**
Anhedonia	–.01	–.01	–.04	.34**	.35**	.16	.15
Intimacy Avoidance	–.02	.05	–.06	.23**	.25**	.15	.19*
Restricted Affectivity	–.04	.05	–.01	.21**	.24**	.15	.25**
Suspiciousness	–.02	–.03	–.08	.30**	.30**	.26**	.31**
Psychoticism							
Unusual Beliefs & Experiences	.05	.04	.00	.33**	.30**	.06	.23**
Eccentricity	.09	.07	.00	.38**	.45**	.08	.22*
Perceptual Dysregulation	.08	.06	–.01	.45**	.50**	.23**	.24**
Antagonism							
Manipulativeness	.12*	.10*	.07	.25**	.29**	.15	.26**
Deceitfulness	.04	.05	–.01	.27**	.33**	.12	.23**
Grandiosity	.02	.03	–.05	.24**	.20**	.06	.13
Attention Seeking	.06	.05	.06	.23**	.30**	.09	.26**
Callousness	–.03	–.02	–.07	.26**	.25**	.05	.09
Hostility	.03	.05	–.01	.38**	.40**	.21*	.24**
Disinhibition							
Irresponsibility	.06	.05	–.02	.37**	.42**	.17	.21*
Impulsivity	.13**	.10*	.06	.42**	.46**	.12	.24**
Distractibility	.27**	.20**	.17**	.47**	.71**	.26**	.42**
Risk Taking	.10*	.11*	.08	.18**	.20**	.07	.12
Rigid Perfectionism	.15**	.11*	.07	.24**	.24**	.14	.27**

Note. Self-report $n = 437$, parent-report $n = 137$. PID-5 = Personality Inventory for DSM-5; ADD = Attention-Deficit Disorder; ADHD = Attention-Deficit/Hyperactivity Disorder; ADD or ADHD diagnosis = a self-reported history of diagnosis by a mental health professional. *$p < .05$. **$p < .01$.

Table 4 summarizes the regression analyses of PID-5 traits as predictors of adult ADHD scores. The model was significant, $F(25, 408) = 20.65$, $p < .01$, $R^2 = .56$, and distractibility was a statistically significant predictor of ADHD ($\beta = .54$, $p < .01$). Withdrawal was the only other significant predictor of ADHD ($\beta = -.22$, $p < .01$), however it was negative in contrast to the positive zero-order correlation ($r = .24$), suggesting a suppression effect. In order to account for possible collinearity, we further entered a restricted set of PID-5

TABLE 4. *DSM-5* Section III Dimensional Traits as Predictors of Adult ADHD

PID-5 Predictors	Self-report of ADHD B (β)
Negative Affectivity	
Emotional Lability	.29 (.02)
Anxiousness	.78 (.04)
Separation Insecurity	–1.70 (–.10)
Perseveration	.31 (.02)
Submissiveness	1.36 (.08)
Depressivity	–1.30 (–.06)
Detachment	
Withdrawal	–4.17* (–.22)
Anhedonia	3.07 (.14)
Intimacy Avoidance	1.30 (.06)
Restricted Affectivity	–.15 (–.01)
Suspiciousness	1.70 (.07)
Psychoticism	
Unusual Beliefs & Experiences	–2.63 (–.13)
Eccentricity	.28 (.02)
Perceptual Dysregulation	4.13 (.18)
Antagonism	
Manipulativeness	1.25 (.08)
Deceitfulness	–1.76 (–.09)
Grandiosity	.23 (.01)
Attention Seeking	–.85 (–.05)
Callousness	–2.66 (–.10)
Hostility	1.85 (.09)
Disinhibition	
Irresponsibility	2.93 (.12)
Impulsivity	1.23 (.07)
Distractibility	9.91* (.54)
Risk Taking	.87 (.04)
Rigid Perfectionism	.20 (.01)
Model R^2	.56

Note. PID-5 = Personality Inventory for DSM-5; ADHD = Attention-Deficit/Hyperactivity Disorder. *$p < .01$.

traits in predicting adult ADHD scores based on zero-order correlations from Table 3. All traits that achieved at least a moderate correlation with ADHD (.30 or higher) were entered in the restricted regression model. Distractibility was again a statistically significant predictor of ADHD (β = .55, $p < .01$). Unusual beliefs and experiences was the only other significant predictor of ADHD (β = –2.54, $p = .01$), however it was negative in contrast to the positive zero-order correlation ($r = .30$), suggesting a suppression effect.

These results were further supported by regressing parent-reported adult ADHD symptoms on PID-5 traits. With all traits entered simultaneously, distractibility was again a statistically significant predictor of ADHD (β = .43, $p < .01$). Manipulativeness was also a statistically significant predictor of parent-reported adult ADHD symptoms (β = .37, $p = .01$). However, when the restricted set of PID-5 traits was entered to predict parent-reported adult ADHD, distractibility was again the only statistically significant predictor (β = .44, $p < .01$).

CORRELATIONS WITH THE DOMAINS WITH A MEASURE OF GENERAL PERSONALITY

Correlations between adult FFMRF personality domains and childhood and adult ADHD symptoms are reported in Table 5. We note here that the personality ratings presented here were provided within *and* across method for all constructs. Not surprisingly, the correlations were stronger within method than across. Interestingly, though, the pattern of correlations was similar: The FFMRF domain of neuroticism, whether rated by the participant or his/her

TABLE 5. Correlations Between Self and Parent Report of ADHD and FFMRF

	Self-report ADHD		Parent-report ADHD	
FFMRF	**Childhood**	**Adult**	**Childhood**	**Adult**
Self-Report				
Neuroticism	.41**	.48**	.29**	.31**
Extraversion	–.14**	–.03	–.07	–.04
Openness	.09*	.20**	.10	.19*
Agreeableness	–.15**	–.14**	–.09	–.02
Conscientiousness	–.17**	–.29**	–.10	–.09
Parent-Report				
Neuroticism	.16	.14	.42**	.54**
Extraversion	.05	.06	–.03	.00
Openness	.12	.20*	.14	.25**
Agreeableness	–.09	–.04	–.26**	–.19*
Conscientiousness	–.08	–.16	–.24**	–.22*

Note. Self-report $n = 438$, parent-report $n = 133$. FFMRF = Five Factor Model Rating Form; ADHD = Attention-Deficit/Hyperactivity Disorder. *$p < .05$. **$p < .01$.

parent, obtained the highest correlation with ADHD symptoms. Conscientiousness and agreeableness also obtained appreciable negative relations with ADHD symptoms, but these correlations were particularly strong for parent-rated childhood ADHD and parent-rated adult personality.

DISCUSSION

Over the past decade, there have been a variety of studies examining the childhood and developmental antecedents for adult personality disorder, and ADHD has emerged as a candidate (De Clercq & De Fruyt, 2012). Existing research has suggested relatively specific relations of childhood ADHD with borderline and antisocial PDs in particular (Matthies et al., 2011). Nonetheless, a pressing limitation of this research has been the reliance on PD categories that are demonstrably problematic (Trull & Durrett, 2005). In the meantime, another line of research has linked childhood and adult ADHD with personality traits from the FFM (Nigg et al., 2002). In the present study, we capitalized on strengths of both these approaches and examined the links between both childhood and adult ADHD symptoms (assessed via self- and parent-report) with PD categories as well as maladaptive trait dimensions among a sample with a range of ADHD symptoms.

This yielded findings that both extended existing research and challenged some conclusions of prior studies. Most notably, the present results were consistent with hypotheses in suggesting that the relationship between ADHD and PD categories is not particularly clear cut or specific when considering self-reported symptoms. Self-reported childhood ADHD symptoms, assessed retrospectively, obtained comparable correlations with all ten *DSM-5* PDs (ranging from .18 to .34). Similarly, the results of self-reported adult ADHD symptoms with concurrent PD scores also appeared to lack specificity, with correlations hovering around .30 for all ten PDs. Although there was some evidence for correlations of higher magnitude between BPD and ADHD (particularly in adulthood), BPD was by no means a unique predictor in multivariate analyses, suggesting that ADHD is related to PD generally, with less-specific links to the individual diagnostic constructs.

The present findings did reinforce the utility of collecting retrospective reports from parents, as their ratings of the participants' ADHD symptoms in childhood evinced clearer links with adult dependent, borderline, and paranoid PDs. Nonetheless, the overall discrimination was also lower when parents' concurrent PD and ADHD ratings were considered. Specifically, PDQ-4 dependent was the only PD scale that significantly predicted parent-rated adult ADHD symptoms. This again reinforces the lack of a clear and robust link between PDs and ADHD.

It is a tall order for nearly *any* construct to show specificity in its relationship with the *DSM-5* PDs as they are notorious for significant overlap and co-occurrence (Zimmerman, Chelminski, & Young, 2008). Nonetheless, this suggests studies that focus on the relationship between ADHD and single PDs (e.g., Philipsen et al., 2008) are likely to detect effects, but likely overestimate the specificity of that possible developmental pathway. Instead, our results

suggest it would be more fruitful to focus on the homogenous traits of the FFM within the *DSM-5* alternative PD model to determine the relationship between ADHD and personality pathology. This echoes an emerging consensus that trait dimensions will form the future of PD diagnosis and perhaps psychopathology more broadly (Krueger & Markon, 2014; Pincus & Hopwood, 2012; Skodol, 2014; Widiger & Mullins-Sweatt, 2009).

In line with our primary hypothesis, the relations among the indicators of ADHD and the PID-5 traits showed increased specificity, relative to the PD categories. Across the traits, the most robust link was between ADHD and the broad domain of disinhibition. This was particularly powerful for the history of an ADHD diagnosis and self-reported ADHD symptoms in adulthood (r = .66). This likely helps to explain the tentative connections between borderline and antisocial PDs found in prior research as both of these disorders are defined by considerable difficulties in impulsivity (Hopwood, Thomas, Markon, Wright, & Krueger, 2012; Samuel & Widiger, 2004).

This is not to say that the link was entirely specific to disinhibition. The other PID-5 domains, particularly negative affectivity and psychoticism, also obtained sizeable correlations with ADHD. The correlation with negative affectivity was unsurprising given the previously reported relations between ADHD and FFM neuroticism. Although the parent-ratings obtained a similar pattern of correlations to the self-reported variables, one distinction was that the correlations with negative affectivity were as large as those for disinhibition. This suggests that parents may see ADHD in their children as manifesting more in negative affect, whereas the children may see the symptoms as more specifically linked to their behavioral control (De Los Reyes & Kazdin, 2005). Regardless, in line with previous research and hypotheses, negative affect or neuroticism appears to share a meaningful relationship with ADHD.

Somewhat surprising was the robust relation found between PID-5 psychoticism and ADHD. It is possible that this finding is due to deviant responding, as psychoticism items are not frequently endorsed. However, it is also likely that participants with significant deviant responding were eliminated based on infrequently endorsed items on the PDQ-4+ validity scales. Another possible explanation for this unexpected correlation is that the psychoticism scale lacks acceptable discriminant validity. Existing research indicates that psychoticism subscales correlate very highly with one another and have the highest correlations with other domains of the PID-5 (Crego, Gore, Rojas, & Widiger, 2015). Further, Hopwood and colleagues (2012) found that those scales correlated positively with a large number of conceptually unrelated scales on the Personality Assessment Inventory (Morey, 1991), including substance use, antisocial behaviors, depression, and health concerns. Thus, the present findings echo prior literature in suggesting that PID-5 psychoticism relates with nearly all forms of psychopathology. This will be an important area for continued research on the construct validity of the PID-5.

The relationships of the higher-order domains were further clarified by examining the lower-order facets of the PID-5. It was clear that the overall effect for disinhibition was driven primarily by the facet of distractibility. Distractibility obtained the largest zero-order relationship with each indicator of ADHD that we employed. It was, by far, the strongest predictor in

multivariate regressions as well. In fact, when entered simultaneously, the only other significant PID-5 facet predictor of self-reported adult ADHD was withdrawal ($\beta = -.22$, $p < .01$), but given that it was negative, in contrast to the positive zero-order correlation, this result likely reflects suppression. Similar findings also emerged for regressions of parent-reported adult ADHD. Thus, distractibility appears to be the unique relation between PD traits and self-reported and parent-reported adult ADHD. In fact, the correlation between self-reported adult ADHD and PID-5 distractibility was so large ($r = .71$) as to suggest the scales assess exceptionally similar constructs. This finding is consistent with our hypotheses as well as the general description of ADHD in *DSM-5*. Indeed, the definition for distractibility within the *DSM-5* ("difficulty concentrating and focusing on tasks; attention is easily diverted by extraneous stimuli; difficulty maintaining goal-focused behavior, including both planning and completing tasks") reads much like a description of ADHD, so it should be hardly surprising that this scale related strongly with a measure of ADHD. In other words, not only do childhood symptoms of ADHD manifest as elevated distractibility in adulthood, but the trait of distractibility may help conceptualize ADHD across the lifespan (De Bolle et al., 2009). Further, the strong correlation with *DSM-5* adult ADHD indicates that PID-5 distractibility can serve as a reasonably valid proxy marker of ADHD. This both builds upon the notion that the traits of the FFM can serve as an organizing framework for the larger diagnostic manual (Krueger & Markon, 2014) and enhances the clinical utility of the PID-5.

Finally, the relations among a measure of general personality traits with ADHD revealed a similar pattern across self-report and parent ratings. These were also in line with past studies examining the relation between ADHD and the FFM in that neuroticism was most strongly and consistently related (Nigg et al., 2002). Conscientiousness and agreeableness were also consistently related, particularly within source, but perhaps at a slightly lesser magnitude than would be expected from past findings. It was particularly true that the relationships between ADHD and the FFM, across methods, were suppressed. Only a handful of correlations of self-reported FFMRF with parent-rated ADHD, or parent-reported FFMRF with self-reported ADHD, were significant. Interestingly, one trend within those cross-method relations was a small, but robust association for openness. This finding is not consistent with the findings from Nigg and colleagues (2002) and perhaps suggests a measurement effect. The FFMRF, as opposed to the Big Five Inventory (BFI), was developed to capture more maladaptive aspects of openness, which might increase the association with ADHD. Combined with the surprisingly robust relation of ADHD with PID-5 psychoticism, this finding may suggest ADHD shares some relation with maladaptive variants, but not more adaptive aspects of openness.

THE PUZZLING RELATIONSHIP BETWEEN ADHD AND OBSESSIVE-COMPULSIVE PD

One particularly intriguing finding from the present study was the robust, positive relationship between OCPD and various markers of ADHD. Although both OCPD and ADHD might be said to struggle with cognitive

flexibility, an executive function, they also seem quite dissimilar in other ways. Thus, it was surprising that OCPD obtained the largest correlations with the history of an ADHD diagnosis and whether the individual had ever been prescribed, or was currently taking a stimulant medication. This was particularly surprising as Miller and colleagues (2008) found no longitudinal link between childhood ADHD and adult OCPD, concluding that this diagnosis and a few others were "not likely outcomes of ADHD in adulthood" (p. 1483). Conceptually, the lack of an association makes sense. OCPD is defined by a behavioral rigidity, overconscientiousness, and stubbornness (APA, 2013). Not surprisingly then, within trait models OCPD is typically conceptualized as maladaptively high conscientiousness (Samuel & Gore, 2012). Although this link is less robust than some others (Samuel & Widiger, 2011), empirical studies have typically shown a positive correlation between OCPD and conscientiousness (Crego, Samuel, & Widiger, 2015). In contrast, ADHD typically obtains a negative relationship with conscientiousness (Martel et al., 2009; Nigg et al., 2002). Thus, it was somewhat surprising to observe that ADHD would correlate positively with OCPD, let alone that it would obtain among the largest effects. It is true that neuroticism also correlates highly with OCPD scales, particularly the PDQ-4 (Samuel & Widiger, 2010). To post-hoc investigate whether this association might explain the current finding, we regressed ADHD onto OCPD, first controlling for FFMRF neuroticism. Although entering neuroticism accounted for a large portion of the variance (R^2 = .228), the change in R^2 (.047) when OCPD was entered remained significant (p > .001), suggesting an unexpected link between OCPD and ADHD.

One possible explanation for this finding is the nature of our sample. As college students, each of the participants in our sample achieved a significant degree of scholastic success over their lifetime. This level of educational attainment may be predicted, or enhanced, by OCPD characteristics, such as workaholism and perfectionism. In fact, empirical findings indicate that OCPD is the only one of the PDs that is more prevalent among college students and college graduates than the general population (Blanco et al., 2008; Torgersen, Kringlen, & Cramer, 2001). Nonetheless, it does not appear to be the case that the present findings simply are related to an increased range of OCPD scores within our sample. Probing further into the data, we examined the mean endorsement of each OCPD criterion and found that those with an ADHD diagnosis had significantly greater levels for only five of the eight criteria, compared to those without a diagnosis. Specifically, those with ADHD were more likely to endorse perfectionism, workaholism, getting lost in details, stubbornness, and miserly spending. This trend was further supported by examining the *DSM-5* alternative PD model traits assigned to OCPD. The group that reported an ADHD diagnosis showed significantly higher levels of rigid perfectionism and perseveration than those who did not, yet there were no differences for the more interpersonally oriented traits of restricted affectivity and intimacy avoidance. Thus, it appears that those aspects of OCPD that would be specifically helpful in educational attainment were most elevated among those with ADHD, relative to their college peers.

This leaves two intriguing possibilities that cannot be answered with this cross-sectional data, but warrant further attention. First, this finding may reflect that aspects of OCPD are etiologically unrelated to ADHD, but serve as a resilience factor for educational attainment that counterbalances some of the inattention difficulties of ADHD. This would provocatively suggest that these features of OCPD would be *beneficial* to these individuals, at least in terms of their scholastic performance. An alternative possibility is that features of OCPD, such as perfectionism, might even be iatrogenic and to some extent engendered or enhanced by habits or routines that were born of successful strategies to cope with ADHD. For example, it would be interesting to determine if levels of these OCPD features would increase among those who showed therapeutic improvement during treatment for ADHD. It will be quite intriguing to see if this finding replicates in additional samples and determine the relation among these variables.

LIMITATIONS AND FUTURE DIRECTIONS

This study used a multimethod assessment of a range of constructs and suggested advantages to using dimensional traits over traditional categories for distinguishing the relationship between ADHD and personality pathology in adults. Nonetheless, it is not without limitations. It is possible that retrospective report of childhood ADHD symptoms might be somewhat inaccurate compared to an actual assessment of the individual during their childhood. Further, while examining ADHD in a university sample permitted the examination of a broader range of symptomology than is typically found in clinical samples, a university sample is potentially limited as well due to the proportion of individuals with ADHD who do not pursue college. Additionally, those with ADHD in the present sample likely portray different personality profiles than those within the general population. Therefore, future research should examine these relationships longitudinally within the general population.

A tradeoff of the current sample, however, is that these are individuals who have had scholastic success despite their ADHD diagnoses. Therefore, associations between ADHD and PDs, particularly OCPD, and personality traits within this sample might reflect some protective or resilience factors. It will be important for future research to replicate these findings in order to further understand the nature of these relationships.

CONCLUSIONS

The current study expands on previous research examining the relationship between ADHD and PD by examining both traditional PD categories and the alternative dimensional trait model from *DSM-5* Section III within a college sample. While BPD and OCPD most consistently related to childhood and adult ADHD, all PDs displayed significant correlations with self-reported ADHD symptoms. These results suggest that ADHD might not necessarily correlate with one specific PD, but rather personality pathology more generally.

Further, results suggest that trait models provide greater specificity in distinguishing personality pathology among those with childhood and adult ADHD. Specifically, the PID-5 facet of distractibility might be particularly useful in examining ADHD across development and should be investigated in future studies.

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