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Interpersonal Dysfunction in Personality Disorders: A Meta-Analytic Review

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Abstract

Personality disorders are defined in the current psychiatric diagnostic system as pervasive, inflexible, and stable patterns of thinking, feeling, behaving, and interacting with others. Questions regarding the validity and reliability of the current personality disorder diagnoses prompted a reconceptualization of personality pathology in the most recent edition of the psychiatric diagnostic manual, in an appendix of emerging models for future study. To evaluate the construct and discriminant validity of the current personality disorder diagnoses, we conducted a quantitative synthesis of the existing empirical research on associations between personality disorders and interpersonal functioning, defined using the interpersonal circumplex model (comprising orthogonal dimensions of agency and communion), as well as functioning in specific relationship domains (parent– child, family, peer, romantic). A comprehensive literature search yielded 127 published and unpublished studies, comprising 2,579 effect sizes. Average effect sizes from 120 separate meta-analyses, corrected for sampling error and measurement unreliability, and aggregated using a random-effects model, indicated that each personality disorder showed a distinct profile of interpersonal style consistent with its characteristic pattern of symptomatic dysfunction; specific relationship domains affected and strength of associations varied for each personality disorder. Overall, results support the construct and discriminant validity of the personality disorders in the current diagnostic manual, as well as the proposed conceptualization that disturbances in self and interpersonal functioning constitute the core of personality pathology. Importantly, however, contradicting both the current and proposed conceptualizations, there was not evidence for pervasive dysfunction across interpersonal situations and relationships.

Keywords

interpersonal circumplex; interpersonal functioning; meta-analysis; personality disorders

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Personality disorders are defined in the current psychiatric diagnostic system as characterized by pervasive, inflexible, and stable patterns of thinking, feeling, behaving, and interacting with others that cause significant distress or impaired functioning in interpersonal or professional domains (American Psychiatric Association [APA], 2013). The importance of interpersonal dysfunction in defining personality disorders is clearly evident in their descriptive features and diagnostic criteria— each personality disorder, as defined in the most recent editions of the *Diagnostic and Statistical Manual of Mental Disorders (DSM–IV*; APA, 2000; *DSM–5* Section II; APA, 2013), is described by a problematic approach to interpersonal interactions, or by characteristics that are likely to interfere with adaptive interactions and relationships (see Table 1). Given the central role of interpersonal dysfunction for personality disorders, considerable empirical research has sought to characterize the key interpersonal features of personality disorders, in general, as well as of each individual personality disorder. Although studied to a somewhat lesser extent, a growing body of empirical research has also considered associations between personality disorders and the quality of functioning in specific interpersonal relationships, such as with one's children, parents and siblings, peers, and romantic partners.

Significant changes to the conceptualization of personality pathology were proposed and are now delineated in the *DSM–5* appendix of emerging models for future study; however, both current (*DSM–IV*, reprinted in *DSM–5* Section II) and proposed (*DSM–5* Section III) conceptualizations emphasize core disturbances in interpersonal functioning. We conducted a meta-analytic review of empirical research on associations between personality disorders and interpersonal functioning to evaluate (a) the construct and discriminant validity of the existing personality disorder diagnoses, as defined in the *DSM–IV* and in the main manual of *DSM–5* (Section II), as well as (b) the extent to which they reflect pervasive interpersonal dysfunction or impairment that is specific to a subset of relationship types. To do so, we synthesized empirical research conducted over the past 20 years, using the interpersonal circumplex model—which comprises the orthogonal dimensions of agency (dominance vs. submissiveness) and communion (warmth vs. coldness)—to organize the findings of this literature. We also considered (c) whether methodological or sample variables moderated these associations. The results have direct implications for theoretical conceptualizations of personality pathology and for personality science more broadly; will help to determine the features that should be emphasized in personality disorder diagnostic criteria sets; will guide empirical research on mechanisms linking personality disorders and interpersonal functioning; and will provide an empirical basis for future editions of the *DSM* (see Hopwood, Wright, Ansell, & Pincus, 2013; Ro & Clark, 2009).

DSM Personality Disorders: Controversies and Challenges

The classification of personality disorders has evolved substantially since the *DSM* was introduced over seven decades ago and continues to be an area of active—and sometimes controversial—research (see Widiger, 2012, for a historical review of personality disorders across *DSM* editions). Contemporary diagnostic criteria sets for the personality disorders were introduced in *DSM–IV* (APA, 1994), with the 10 personality disorders organized into three descriptive clusters: Cluster A ("odd-eccentric") included paranoid, schizoid, and schizotypal personality disorders; Cluster B ("dramatic-emotional-erratic") included

antisocial, borderline, histrionic, and narcissistic personality disorders; and Cluster C ("anxious-fearful") included avoidant, dependent, and obsessive– compulsive personality disorders. In addition, *DSM–IV* included the diagnosis personality disorder not otherwise specified, given for symptoms indicative of a personality disorder not adequately captured by one of the other personality disorder diagnoses.

A number of important criticisms of the *DSM–IV* personality disorders (e.g., Clark, 2007; Krueger & Eaton, 2010; Krueger, Skodol, Livesley, Shrout, & Huang, 2007; Trull & Durrett, 2005; Widiger & Samuel, 2005; Widiger, Simonsen, Krueger, Livesley, & Verheul, 2005) prompted calls for major changes to their conceptualization and diagnosis. The *DSM–IV* personality disorders are conceptualized as 10 dichotomous categories, but evidence that this conceptualization best represents the underlying latent structure of personality pathology is limited (e.g., Clark, 2007; Kotov et al., 2011; Krueger & Eaton, 2010; Widiger & Samuel, 2005). The diagnostic thresholds that determine the presence versus absence of a personality disorder diagnosis have little empirical rationale and do not appear to correspond to clinically significant impairment (Clark, 2007; Spitzer & Wakefield, 1999; Widiger, 2001; Widiger & Trull, 2007). High diagnostic overlap and comorbidity among personality disorder diagnoses also fueled concerns about the validity of the diagnostic categories, as most individuals who meet criteria for one personality disorder also qualify for an additional diagnosis (e.g., Krueger & Markon, 2006). Thus, significant concerns were raised as to the construct validity of the personality disorders as defined in *DSM–IV*, or the extent to which the personality disorders, as a whole, as well as each specific personality disorder, reflect true psychopathology constructs with meaningful associations with other constructs of relevance. Further concerns have been raised as to their discriminant validity, or the extent to which each personality disorder reflects a discrete diagnostic construct with unique associations relative to the other personality disorders. At the same time, decades of research and several large-scale studies also provide evidence that *DSM–IV* personality disorders are meaningfully associated with and predict important psychosocial functioning constructs (e.g., Cohen, Crawford, Johnson, & Kasen, 2005; Fergusson, Horwood, & Ridder, 2005; Gunderson et al., 2011; Skodol et al., 2002; Zanarini, Frankenburg, Reich, & Fitzmaurice, 2010).

The decade preceding the publication of *DSM–5* saw considerable and varied efforts to address limitations in how personality pathology is defined within the *DSM* (see Clark, 2007; Krueger & Eaton, 2010; Krueger & Markon, 2014; Widiger, 2013; Widiger & Samuel, 2005). The *DSM–5* was intended to promote a "paradigm shift" (Kupfer, First, & Regier, 2008; p. xix): Major revisions and reconceptualizations throughout the *DSM*, and in particular to the personality disorders, were actively encouraged and solicited (First et al., 2002; Krueger et al., 2007; Widiger et al., 2005). Proposed revisions ran the gamut from relatively minor modifications to the specific diagnostic criteria for each of the personality disorders to a complete revamping of the personality disorder diagnostic classification system. Although many of these proposed revisions had ardent supporters, there were also strident objections, primarily with regard to their nature and scope, as well as a lack of sufficient empirical support for some of the proposed revisions (see Widiger, 2013; Zimmerman, 2012). Ultimately, the APA Board of Trustees elected to retain the original *DSM–IV* diagnostic criteria for personality disorders (but not the personality disorder

clusters) in the main manual of *DSM–5* (Section II). However, a new hybrid dimensional-categorical model proposed by the Personality and Personality Disorders Work Group was also included in the *DSM– 5*'s appendix of emerging measures and models for further study (Section III).

In the proposed hybrid model, a personality disorder diagnosis is made in the presence of significant problems in personality (self and interpersonal) functioning, and specific patterns of pathological personality traits, delineated using five broad traits of personality (Negative Affectivity vs. Emotional Stability, Detachment vs. Extraversion, Antagonism vs. Agreeableness, Disinhibition vs. Compulsivity, Psychoticism vs. Lucidity) that can in turn be further specified using 25 specific maladaptive trait facets. Problems in personality functioning are defined in terms of how an individual typically experiences himself/herself or others: impairments in "self" functioning include issues with identity, self-concept, self-direction, and agentic behavior, whereas impairments in "interpersonal" functioning include issues with interpersonal relatedness, intimacy, empathy, and communal behavior. *DSM–5* Section III retains six proposed personality disorder types: schizotypal, antisocial, borderline, narcissistic, avoidant, and obsessive– compulsive personality disorders, each defined by a specific pattern of impairment in personality functioning and traits. In addition, a diagnosis of personality disorder—trait specified is given in the presence of impaired personality functioning that does not fully meet criteria for a specific personality disorder type.

Although the proposed hybrid model was ultimately not adopted for the *DSM–5*'s main manual, its inclusion in the Section III appendix of emerging models for further study encourages research on its alternative conceptualization of personality pathology. Of particular interest is research that evaluates the construct validity of the *DSM–5* Section III proposed definition of personality pathology, including associations with indicators of psychosocial functioning (Clark, 2007; Hopwood, Wright, et al., 2013; Widiger, Simonsen, et al., 2005). Germane are recent efforts toward greater integration of research on psychopathology symptoms, personality traits, and psychosocial functioning, with growing evidence of overlap between personality pathology and functioning in important psychosocial domains, including in interpersonal relationships (see Clark & Ro, 2014; Ro & Clark, 2013). Thus, examination of interpersonal functioning among individuals with personality disorders and symptoms, as defined in *DSM–IV* and the main manual of *DSM–5* (Section II), offers an important test of the construct validity of each of the current personality disorder diagnoses. In addition, as reviewed below, the core features of *DSM–5* Section III personality disorders—impairment in self and interpersonal functioning—are remarkably well aligned with the core dimensions described in interpersonal circumplex models (see Hopwood, Wright, et al., 2013). Thus, examining interpersonal functioning as conceptualized using the interpersonal circumplex model offers an important test of the construct validity of personality disorders defined using *DSM–IV* and the main manual of *DSM–5* Section II, as well as the proposed *DSM–5* Section III classification system for personality pathology.

Moreover, because both the current (*DSM–IV* and *DSM–5* Section II) and proposed (*DSM–5* Section III) diagnoses emphasize the pervasiveness of dysfunction across relationship

types and interaction partners, examining interpersonal functioning for personality disorders across specific relationship domains indicates the extent to which interpersonal dysfunction is evident across relationships or is specific to a subset of relationship types, thus providing a test of the construct validity of both the current and proposed classification systems. Models emphasizing pervasiveness of dysfunction across relationship contexts (as do both the current and proposed *DSM* models) are consistent with conceptualizing interpersonal dysfunction as a trait-like construct that individuals "carry" with them across their different relationships. By contrast, evidence of differences in the presence and type of interpersonal dysfunction across different relationships would underscore the need for conceptual and etiological models of interpersonal dysfunction in personality pathology to account for this heterogeneity by considering such features as relationship partners, relationship quality, role demands, and other individual and systemic influences.

Interpersonal Functioning: Implications for Personality Disorder Theory and Research

Interpersonal style is defined by one's characteristic approach to interpersonal situations and relationships, and includes attitudes toward, behaviors in, and goals for relationships; cognitions about the meaning of relationships; affect and behavior in interpersonal interactions; and interpretation of others' interaction behaviors. Along with other factors, one's characteristic interpersonal style determines the quality of functioning in specific relationship domains, including with one's children, parents and siblings, peers, and romantic partners.

Interpersonal theory emphasizes the integral role of interpersonal relationships and experiences with others for broader aspects of psychosocial functioning, and is rooted in the assumption that all interpersonal interactions reflect attempts to establish and maintain self-esteem or avoid anxiety (Leary, 1957; Sullivan, 1953). The means by which an individual accomplishes these fundamental goals is apparent in a durable set of techniques that are observable in any interpersonal situation, from brief interactions to enduring relationships. Interpersonal theory is comprised of three major principles: complementarity, vector length, and circumplex structure. The principle of complementarity, or reciprocity, posits that an individual's interpersonal behaviors tend to initiate and elicit interpersonal responses from his or her interaction partner that reinforce the individual's original behaviors; importantly, these responses tend to be restricted to a relatively narrow range of interpersonal reactions that are both reciprocal and correspondent: dominance tends to provoke its reciprocal response of submissiveness (and vice versa, with submissiveness provoking dominance), whereas coldness/hostility and warmth/friendliness tend to provoke their corresponding responses (Carson, 1969; Kiesler, 1983; Leary, 1957; Markey, Funder, & Ozer, 2003). The principal of vector length, or amplitude, posits that statistical deviance from a point of origin is an index of the extremity of an individual's interpersonal behaviors; vector length can also be thought of as the degree of differentiation within an interpersonal profile (Gurtman & Balakrishnan, 1998; Gurtman & Pincus, 2003; Leary, 1957). Finally, the principle of circumplex structure posits that variables in the interpersonal domain are arranged in a two-dimensional, circular space referred to as a "circumplex," which is defined by two

orthogonal, bipolar interpersonal dimensions, agency (dominance vs. submissiveness) and communion (warmth vs. coldness, also referred to as hostility or hate vs. friendliness or love); this circumplex space is further subdivided into eight equal segments that form progressive blends of the agency and communion dimensions (see Figure 1; Acton & Revelle, 2002; Leary, 1957; Wiggins & Trobst, 1997).

The circumplex model of interpersonal style provides a means of conceptualizing, organizing, and assessing individuals' and groups' characteristic approach toward interpersonal interactions. Several circumplex measures of interpersonal behavior, goals, and values have been developed, including those that reflect more normative aspects of interpersonal style and those that tap into more problematic aspects. These include the Interpersonal Checklist (ICL; LaForge & Suczek, 1955), Interpersonal Adjective Scales (IAS; Wiggins, 1979) and Revised Interpersonal Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips, 1988), Inventory of Interpersonal Problems— Circumplex (Alden, Wiggins, & Pincus, 1990), Octant Scale Impact Message Inventory (IMI-C; Schmidt, Wagner, & Kiesler, 1999), Person's Relating to Others Questionnaire (PROQ; Birtchnell, Falkowski, & Steffert, 1992) and Person's Relating to Others Questionnaire—Revised (PROQ2; Birtchnell & Evans, 2004; Birtchnell & Shine, 2000), Chart of Interpersonal Reactions in Closed Living Environments (CIRCLE; Blackburn & Renwick, 1996), Inventory of Interpersonal Goals (IIG; Horowitz, Dryer, & Krasnoperova, 1997), Support Actions Scale—Circumplex (SAS-C; Trobst, 2000), and Circumplex Scales of Interpersonal Values (CSIV; Locke, 2000). Although the names of the subscales for each measure vary, each is defined by the two orthogonal interpersonal dimensions of agency and communion, with the circumplex space divided into octants that reflect specific interpersonal traits. Depending on the measure, these octants reflect interpersonal traits that are relatively normative, such as the Managerial-Autocratic, Competitive-Exploitive, Blunt-Aggressive, Skeptical-Distrustful, Modest-Self-Effacing, Docile-Dependent, Cooperative-Overconventional, and Responsible-Overgenerous subscales of the ICL, or are more problematic and excessive, such as the Domineering, Vindictive, Cold, Socially Avoidant, Nonassertive, Exploitable, Overly Nurturant, and Intrusive subscales of the IIP-C (see Table 2 for a description of the interpersonal traits assessed by the IIP-C).

Interpersonal circumplex measures have demonstrated both reliability and validity, lending empirical support to the theoretical circumplex model. Numerous studies have reported at least adequate internal consistency for the most commonly used interpersonal circumplex measures (e.g., Alden et al., 1990; Vittengl, Clark, & Jarrett, 2003; Wilson, Revelle, Stroud, & Durbin, 2013), as well as good test–retest reliability (Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988; Monsen, Hagtvet, Havik, & Eilertsen, 2006). Acton and Revelle (2002) examined the structure of the ICL, IAS and IAS-R, IIP-C, and IIG, and found that each showed the expected circumplex structure, with constant radius, equal spacing, and no preferred rotation. Evidence of construct validity also comes from a growing body of empirical research demonstrating that interpersonal style shows meaningful associations with interpersonal interactions and the quality of interpersonal relationships (e.g., Lawson, 2008; Saffrey, Bartholomew, Scharfe, Henderson, & Koopman, 2003; Stroud, Durbin, Saigal, & Knobloch-Fedders, 2010; Wilson et al., 2013).

In addition to indexing interpersonal traits, the interpersonal circumplex model offers a powerful representation of an individual's or group's interpersonal style in the form of interpersonal "profiles" (see Gurtman, 2009). In an interpersonal profile, scores on the eight octants of the circumplex are presented visually, either in a polar coordinate system (i.e., the circumplex) or arranged linearly across the eight interpersonal traits; the ordering of the scores reflects their theoretical arrangement on the circumplex. Because interpersonal profiles produced using circumplex measures tend to be sinusoidal in form, they can be modeled against the prototypical cosine function (see Gurtman, 1992; Gurtman & Balakrishnan, 1998; Gurtman & Pincus, 2003; Wright, Pincus, Conroy, & Hilsenroth, 2009; Zimmermann & Wright, 2017; see Figure 2).

Applying this structural summary method yields parameters useful for characterizing both individuals and groups. For an individual's profile, elevation is the mean level on the profile; amplitude (mathematically equivalent to vector length) is the difference between the mean level and the peak value of the profile; and angular displacement is the angular distance from 0° to the peak value of the profile. Elevation reflects an individual's idiosyncratic response style, or, in the presence of a general factor underlying the specific scales of the interpersonal circumplex measure (e.g., Tracey, Rounds, & Gurtman, 1996; Vittengl et al., 2003; Wilson et al., 2013), the individual's level on that general factor. Amplitude reflects the extent to which an individual's profile shows little differentiation, characterized by comparable values across each interpersonal trait, or a differentiated pattern, characterized by a single peak value on a particular interpersonal trait. Angular displacement reflects the predominant interpersonal theme for an individual. Similar logic can be applied to interpersonal profiles for groups—to the extent that another construct is characterized by interpersonal content, associations with an interpersonal circumplex measure should form the expected sinusoidal wave (see Gurtman, 1992; Gurtman & Balakrishnan, 1998; Gurtman & Pincus, 2003; Wright et al., 2009; Zimmermann & Wright, 2017). For group profiles, elevation is the average correlation with interpersonal style; amplitude is the difference between the average correlation and the peak correlation of the profile; and angular displacement is the angular distance from 0° to the peak correlation of the profile. As for individuals, elevation reflects the group's idiosyncratic response style or its association with a general factor; amplitude reflects the differentiation of the group; and angular displacement reflects the predominant interpersonal theme for the group. In addition to these three structural parameters, the structural summary method also yields a goodness-of-fit statistic, R^2, that can be used to determine how well the individual or group profile fits the expected pattern. Interpersonal profiles can, thus, provide a rich representation of the predominant interpersonal style that characterizes an individual or group, as well as the extent to which this style is defined by differentiated interpersonal behaviors.

The importance of interpersonal style and the utility of interpersonal profiles can be readily appreciated in the study of personality disorders. As defined in the current *DSM* classification system, each personality disorder is characterized by interpersonal dysfunction, but each also demonstrates its own specific "flavor" of pathology. Moreover, to the extent that each personality disorder shows a unique pattern of dysfunction, each is expected to show a unique interpersonal style, indexed by high amplitudes and different angular displacements relative to other personality disorders. Thus, organizing interpersonal

functioning using the interpersonal circumplex model offers a valuable and informative approach to evaluating the construct and discriminant validity of the personality disorders.

Personality Disorders and Problems in Interpersonal Functioning: Empirical Research

Several researchers have suggested that personality disorders are fundamentally disorders of relating with others (e.g., Benjamin, 1993; Hopwood, Wright, et al., 2013; Kiesler, 1983); this conceptualization is reflected in the definition of personality pathology proposed in *DSM–5* Section III (APA, 2013). Much of the empirical research on personality disorders and interpersonal functioning has considered associations with interpersonal style, assessed using interpersonal circumplex measures (see Pincus & Gurtman, 2006; Widiger & Hagemoser, 1997, for reviews). There is remarkable consistency across different methods of assessing personality disorders and interpersonal style, different interpersonal circumplex measures, and among clinical and nonclinical samples in placement for most of the personality disorders within the interpersonal circumplex. Several recent studies using *DSM–IV* personality disorder criteria (see Haslam, Reichert, & Fiske, 2002; Locke, 2000; Monsen et al., 2006; Pagan, Eaton, Turkheimer, & Oltmanns, 2006) have shown that paranoid and antisocial personality disorders consistently show their highest associations with dominant and dominant-cold traits (i.e., Vindictive, Cold, and Domineering subscales of the IIP-C), whereas schizoid personality disorder consistently shows its highest associations with cold and submissive-cold traits (i.e., Cold and Socially Avoidant subscales of the IIP-C) and avoidant personality disorder consistently shows its highest associations with cold-submissive traits (i.e., Socially Avoidant, Nonassertive, and Cold subscales of the IIP-C). By contrast, histrionic and narcissistic personality disorders consistently show their highest associations with dominant and dominant-warm traits (i.e., Intrusive, Domineering, and Vindictive subscales of the IIP-C), whereas dependent personality disorder consistently shows its highest associations with submissive and submissive-warm traits (i.e., Nonassertive, Exploitable, and Overly Nurturant subscales of the IIP-C). However, there have also been some inconsistencies in this literature—schizotypal, borderline, and obsessive– compulsive personality disorders have shown both generally large associations or a general lack of associations with IIP-C subscales (see Haslam et al., 2002; Locke, 2000; Pagan et al., 2006)—indicating that not all of the personality disorders have yet been consistently located in the interpersonal circumplex space. There have also been examinations of associations between personality disorders and functioning within specific relationship domains, in addition to empirical research on associations with interpersonal style. A review of this research indicates that, as expected, personality disorders are associated with dysfunction in important relationship domains, including with one's children, family, peers, and romantic partners (e.g., Oltmanns, Melley, & Turkheimer, 2002; Skodol et al., 2002; Wilson & Durbin, 2012).

Thus, a qualitative assessment of previous research indicates that personality disorders are associated with interpersonal dysfunction, as evidenced by associations with problematic interpersonal styles and impairment in specific relationship domains. As such, the existing research provides some evidence of the construct validity of the current classification system

for personality disorders. However, a number of questions remain, many of which can be more definitively addressed through the systematic quantitative synthesis of relevant data in a meta-analytic review. First, although there is general consensus of the predominant interpersonal style for many personality disorders, for others, this remains unclear. Meta-analysis allows for the derivation of effect size estimates for associations between personality disorders and each trait in the interpersonal circumplex. This, in turn, allows for examination of interpersonal profiles for each personality disorder that can be summarized using the structural parameters of elevation (average correlation with interpersonal style), amplitude (peak correlation of the profile), and angular displacement (angular distance from 0° to the peak correlation). Second, although there is evidence that personality disorders are associated with dysfunction in specific relationship domains, it is unclear whether some personality disorders show greater dysfunction than others, and to what extent dysfunction is pervasive across all relationship domains or is specific to particular domains. By including all available relevant data, meta-analysis yields a comprehensive set of effect sizes for each personality disorder for functioning in the different relationship domains. Third, some personality disorders and some relationship domains are more highly represented in the published literature than others. The inclusion of unpublished data, including relevant dissertations and data sets from researchers, may yield additional information for domains that are less frequently reported in the published literature, thereby giving a more accurate representation of true effect sizes. Fourth, there is considerable variability in the existing data in study design, the methods used to assess personality disorders and interpersonal functioning, and sample characteristics—these issues can be addressed in meta-analysis by correcting for sampling error and measurement unreliability and by conducting moderator analyses that stratify effect sizes as a function of study, methodological, and sample characteristics. To our knowledge, this is the first meta-analysis to examine associations between personality disorders and interpersonal functioning (but see Lazarus, Cheavens, Festa, & Rosenthal, 2014, for a qualitative review of borderline personality disorder and interpersonal functioning assessed using behavioral and laboratory measures).

The Present Meta-Analytic Review

The present meta-analytic review provides a test of the construct and discriminant validity of personality disorders, as they are conceptualized in the current psychiatric diagnostic classification system (*DSM–IV* and *DSM–5* Section II). It also tests the extent to which personality disorders are defined by disturbances in self and interpersonal functioning, as conceptualized in the proposed classification system (*DSM–5* Section III). We conducted a series of meta-analyses that examined associations between personality disorder diagnoses and symptoms and (a) interpersonal style, defined using the interpersonal circumplex, and (b) functioning in specific relationship domains, including the parent– child, family, peer, and romantic domains. We expected that personality disorders would be generally associated with interpersonal dysfunction, as evidenced by moderate-to-strong associations with maladaptive interpersonal traits and impaired functioning in specific relationship domains—that is, the *construct* validity of the personality disorders, as a whole, and of each specific personality disorder, would be supported. Moreover, we expected that each personality disorder would show a predominant interpersonal style, indexed by amplitude and angular

displacement—that is, the *discriminant* validity of each personality disorder would be supported. We further expected that the personality disorders would show pervasive impairment across specific relationship domains, as emphasized in both the current and proposed *DSM* conceptualizations of personality pathology. Our examination of potential methodological and sample variables, including the method used to assess personality disorders and interpersonal functioning constructs, and sample age, sex, and type, was exploratory.

Personality Disorders

We defined personality disorders using the current *DSM* taxonomy, that is a *DSM–IV* (reprinted in *DSM–5* Section II) diagnosis of personality disorder, a symptom count of *DSM–IV* criteria, or a questionnaire or rating scale of symptoms consistent with *DSM–IV* criteria. Although the personality disorder constructs defined in *DSM–IV* are fundamentally the same as those in *DSM–III–R*, there were sufficient changes to the specific diagnostic criteria sets (e.g., substantive changes in the wording of specific criteria; dropping or adding criteria; changes to the number of criteria needed for a diagnosis) to introduce potentially meaningful variability in effects assessed using the different editions; thus, we limited our literature search to research published after 1994, when *DSM–IV* was published. Notably, because the diagnostic criteria for personality disorders in *DSM–5* are identical to those in *DSM–IV*, the results of our meta-analysis for *DSM–IV* personality disorders are directly applicable to the current *DSM–5* Section II (main manual) personality disorders. Although nomenclatures and personality pathology constructs other than those found in the *DSM* exist, some of which with strong theoretical underpinnings and empirical support (e.g., borderline personality organization; Kernberg, 1967), and some older instruments developed to assess pre-*DSM–IV* personality disorder constructs have been widely used (e.g., Narcissistic Personality Inventory; Raskin & Hall, 1979), we limited our meta-analysis to *DSM–IV* personality disorders to maximize comparability in personality disorder constructs across studies and because the *DSM–IV* personality disorder diagnostic criteria sets are exactly the same as those for *DSM–5*. Our focus on *DSM* diagnoses and symptoms meant that we excluded some widely studied and related constructs, including psychopathy, antisocial behavior, and conduct problems. Although psychopathy shows overlap with antisocial personality disorder, it includes several interpersonal and affective features not in the current *DSM* diagnostic criteria (Cleckley, 1976). Antisocial behavior and conduct problems are typically defined quite broadly (e.g., substance use, gambling, risky sex, impulsivity, callousness), often with considerable variation across studies, and, thus, do not necessarily reflect antisocial personality disorder and conduct disorder diagnostic criteria, respectively. In addition, because we were interested in examining the specificity of effects for each of the 10 personality disorders, we excluded studies that presented results for the presence versus absence of any personality disorder, a symptom count across different personality disorders, or personality disorder clusters.

Interpersonal Functioning

We defined interpersonal style using circumplex models of interpersonal functioning. We selected the circumplex model based on its rich theoretical history (Leary, 1957; Sullivan, 1953), strong empirical support (Acton & Revelle, 2002; Alden et al., 1990; Horowitz et al.,

1988), and direct relevance to *DSM–5* Section III personality pathology (Hopwood, Wright, et al., 2013). Interpersonal circumplex models include two orthogonal, bipolar dimensions defined by agency (dominance vs. submissiveness) and communion (warmth vs. coldness), but there is variation in the terms used to describe the eight interpersonal traits that comprise the circumplex depending on the specific nature of the interpersonal circumplex measure, with labels reflecting both normative and problematic aspects of interpersonal style (see Figure 1). Because of our interest in the more extreme, pathological aspects of interpersonal functioning, we refer to all interpersonal traits using subscale names from the IIP-C, namely Domineering, Vindictive, Cold, Socially Avoidant, Nonassertive, Exploitable, Overly Nurturant, and Intrusive (see Table 2). We selected the parent– child, family, peer, and romantic domains for our examination of functioning in specific relationship domains because of the importance of these domains for the vast majority of people. Given our interest in current functioning within these domains, we excluded studies that used retrospective reports of relationship functioning, including experiences of the family of origin, or studies that did not include assessment of personality disorders and interpersonal functioning in close temporal proximity to one another. Because we were interested in examining the specificity of effects for each interpersonal trait or relationship domain, we excluded studies that presented results for the sum or average across different interpersonal traits (e.g., total interpersonal problems), or for general interpersonal functioning not defined to a particular relationship domain (e.g., social skills).

Moderator Analyses

We considered several potential methodological and sample moderators of associations between personality disorders and interpersonal functioning, including the method used to assess personality disorders and interpersonal functioning, and sample age, sex, and type.

Assessment of personality disorders and interpersonal functioning—We conducted moderator analyses that compared associations between personality disorders and interpersonal functioning assessed using self-report methods to those assessed using other methods (structured interviews, unstructured interviews, informant reports, observational ratings, archives/records). A majority of the literature has relied on self-report questionnaires; (semi-) structured diagnostic interviews are also frequently used to assess personality disorders. Other less commonly used methods include unstructured clinician interviews, informant reports, observational ratings, and archives/records (e.g., hospital or arrest records). Self-report questionnaires have the advantages of being easily administered and useful for obtaining individuals' own perspectives on their symptoms, behavior, and relationships. However, they rarely assess the stability and long-standing nature of personality disorder symptoms, nor do they typically assess whether symptoms are accompanied by clinically significant impairment or distress, both key criteria for a personality disorder diagnosis; as such, they are not appropriate for use as diagnostic instruments. Structured diagnostic interviews, on the other hand, are developed specifically to assess personality disorders according to diagnostic criteria; their use facilitates the systematic, comprehensive, replicable, and objective assessment of personality disorders (see Trull, Carpenter, & Widiger, 2013; Widiger & Coker, 2002). Though widely used in

clinical contexts, unstructured clinical interviews are less common in research because they are often idiosyncratic, noncomprehensive, unreliable, and subjective (Trull et al., 2013).

Self-report questionnaires tend to yield dramatically higher prevalence rates of personality disorders relative to structured interviews (Clark & Harrison, 2001; Kaye & Shea, 2000; Westen, 1997; Zimmerman, 1994). Although structured diagnostic interviews rely on self-reports of symptoms and behaviors, unlike for self-report questionnaires, the interviewer has opportunities to ensure accuracy through the use of open-ended and indirect questioning and follow-up questioning, as well as observations throughout the interview. Informant reports from family, close friends, and acquaintances, observational ratings based on samples of behavior, and information obtained through archives/records also circumvent potential issues related to self-report, and have considerable potential for providing an alternative perspective or objective status. These methods may be particularly useful for individuals with personality disorders, who may show a lack of insight into their own symptoms and behaviors, and for assessing these constructs in general, as they tend to be affected less by social desirability effects than self-reports. Evidence from moderator analyses of weaker associations between personality disorders and interpersonal dysfunction when personality disorders or interpersonal functioning are assessed using self-reports would be consistent with a lack of insight and/or a positive reporting bias associated with a personality disorder.

Sample age—We conducted moderator analyses that compared associations between personality disorders and interpersonal functioning among samples of adults (18 years and older) with those assessed among samples of children and adolescents (younger than 18 years). To comprehensively include personality disorders assessed among samples of children, adolescents, and adults, we included each of the 10 personality disorders, plus conduct disorder. A *DSM–IV* (and *DSM–5* Section II) personality disorder diagnosis requires that the onset of symptoms occurred prior to adolescence or early adulthood. However, the *DSM* cautions that a personality disorder diagnosis should not typically be given prior to age 18, primarily because of concerns that personality may change considerably through childhood and adolescence and into adulthood. Nonetheless, a growing body of research indicates that personality pathology in adolescence deviates from normative personality development, and that personality disorders diagnosed in adolescence are reliable and valid (e.g., Durrett & Westen, 2005; Levy et al., 1999; Skodol, Johnson, Cohen, Sneed, & Crawford, 2007). Studies of personality disorders and symptoms in children and adolescents typically apply adult criteria without modifications. The one exception is that of antisocial personality disorder, which can only be diagnosed after age 18; prior to that, the persistent pattern of rule and norm violation seen in antisocial personality disorder is instead considered under a conduct disorder diagnosis. Evidence from moderator analyses of comparable associations between personality disorders and interpersonal dysfunction in samples of children/adolescents and adults would speak to the validity of personality pathology across these developmental stages.

Sample sex—We conducted moderator analyses that compared associations between personality disorders and interpersonal functioning assessed among predominately male to those assessed among predominately female samples. There is some evidence that certain

personality disorders (schizoid, antisocial, and narcissistic personality disorders) are more commonly diagnosed among males, whereas others (paranoid, borderline, histrionic, avoidant, dependent, and obsessive– compulsive personality disorders) are more commonly diagnosed among females (Trull, Jahng, Tomko, Wood, & Sher, 2010; but see also Lenzenweger, Lane, Loranger, & Kessler, 2007). Sex differences in diagnoses may reflect actual sex differences in prevalence rates, but may also reflect stereotypical views of typical gender roles and behaviors and/or gender bias in assessment (Garb, 1997; Jane, Oltmanns, South, & Turkheimer, 2007; Lindsay & Widiger, 1995). Evidence from moderator analyses of comparable associations between personality disorders and interpersonal dysfunction among males and females would suggest that personality pathology is similarly manifested in the interpersonal domain for males and females, whereas different associations would suggest that personality pathology is differentially associated with interpersonal functioning for males versus females.

Sample type—We conducted moderator analyses that compared associations between personality disorders and interpersonal functioning assessed among nonclinical and those assessed among clinical samples. Many studies examine clinical populations, typically drawn from psychiatric (e.g., inpatients and outpatients in hospitals and mental health clinics) and forensic settings (e.g., juvenile detention, court-mandated domestic violence treatment centers). Although these samples are likely to show more severe personality pathology, there is also the possibility of ascertainment bias and/or systematic differences in treatment-seeking samples (e.g., Corbitt & Widiger, 1995). Other studies examine nonclinical populations, typically university students, as well as individuals in community and school settings. These samples likely show greater variability but generally less severity of personality pathology than clinical samples. Evidence from moderator analyses of stronger associations between personality disorders and interpersonal dysfunction among clinical samples would suggest that more severe personality pathology is associated with comparably greater impairment in the interpersonal domain.

Effect Size Statistics

Because we conceptualize personality pathology and interpersonal functioning as dimensional constructs, we selected Pearson's *r* as our index of the association between personality disorders and interpersonal functioning (see Schmidt & Hunter, 2014). The *r* statistic reflects the amount of overlapping variance among personality disorders and interpersonal functioning constructs. Although *r* is reduced when comparing groups (e.g., personality disorder vs. no disorder) with unequal sample sizes, the majority of studies included in the present meta-analysis used continuous personality disorder and interpersonal functioning variables. Thus, we considered this to be the most appropriate statistic for the questions of interest examined in the present meta-analysis.

Method

Inclusion and Exclusion Criteria

Inclusion criteria were (a) assessment of one or more of the personality disorders included in the *DSM–IV* (and in *DSM–5* Section II; schizoid personality disorder, schizotypal

personality disorder, paranoid personality disorder, antisocial personality/conduct disorder, histrionic personality disorder, narcissistic personality disorder, borderline personality disorder, avoidant personality disorder, dependent personality disorder, obsessive–compulsive personality disorder diagnoses or symptom counts); (b) assessment of interpersonal functioning (interpersonal traits measured using a circumplex measure of interpersonal style; functioning within the parent– child, family [parent, sibling, extended family], peer, or romantic relationship domains); and (c) sufficient information given for calculating study effect sizes (e.g., correlation between personality disorder symptom count and interpersonal functioning variables, means and standard deviations of interpersonal functioning variables in the personality disorder group and a comparison group), provided either in the published study or dissertation or by the study authors upon request.

Exclusion criteria were (a) effect sizes calculated for (a1) personality disorder diagnoses or symptoms combined across personality disorder categories (e.g., diagnostic criteria met for any personality disorder, a total personality disorder symptom count), rather than for specific personality disorders; (a2) personality diagnoses or symptoms defined using non-*DSM–IV* (and *DSM–5* Section II) diagnostic criteria (e.g., an earlier diagnostic classification system; other personality disorder conceptualizations not aligned with *DSM–IV* criteria, such as borderline personality organization, Kernberg, 1967); (a3) psychopathy, antisocial behavior, or conduct problems more broadly defined; (b) studies without an appropriate control or comparison group; (c) case studies or studies with fewer than 10 participants total; (d) longitudinal assessment of personality disorders and interpersonal functioning (i.e., not in close temporal proximity to one another) or assessment of interpersonal functioning prior to the assessment of personality disorders (e.g., experiences in the family of origin); and (e) insufficient information given for calculating effect sizes (e.g., beta weights from multiple regression analyses) and we were unable to obtain the relevant data from the study authors.

Literature Search

Studies were obtained using multiple search strategies, including (a) searches using three online databases (PsycINFO, Medline, ProQuest Dissertations and Theses) for relevant empirical studies; (b) examination of reference sections in the studies selected for inclusion in the meta-analysis; (c) examination of reference sections in relevant review articles and meta-analyses, obtained using searches of PsycINFO and Medline; (d) examination of all articles published in relevant journals during the relevant time period; (e) posted requests for published and unpublished data on relevant listservs; and (f) contact with research teams to obtain additional data for published reports and/or unpublished data. An overview of the literature search is presented in Figure 3.

Keywords used in the PsycINFO, Medline, and ProQuest database searches included combinations of personality disorder search terms (*personality disorder, schizoid personality disorder, schizotypal personality disorder, paranoid personality disorder, antisocial personality disorder, conduct disorder, histrionic personality disorder, narcissistic personality disorder, borderline personality disorder, avoidant personality disorder, dependent personality disorder*, or *obsessive– compulsive personality disorder*) with interpersonal functioning search terms (*interpersonal, domineering, vindictive, cold, socially avoidant,*

*nonassertive, exploitable, overly nurturant, intrusive, marital relation**, *romantic relation**, *parent-* [or *mother-* or *father-*] *child relation**, *parenting*, *sibling relation**, *family relation**, *peer relation**, or *friend**). The search was limited to journal articles and dissertations published in the English language between January 1994 (the publication year of *DSM–IV*) and December 2013.

These database searches yielded 4,788 nonoverlapping abstracts. Titles and abstracts for all potentially eligible studies were reviewed, and 4,258 studies that clearly did not meet the inclusion criteria were excluded. The full text of the remaining 530 studies was then reviewed. In addition, we examined reference sections for all studies selected for inclusion in the meta-analytic review, as well as reference sections from relevant review articles and meta-analyses, obtained using searches of PsycINFO and Medline (the above personality disorder and interpersonal functioning search terms in combination with the terms *meta-analysis, literature review*, or *systematic review*, limited to the English language and published after January 1994 through the search date in August, 2014). We also examined all articles published between January 1994 and December 2013 in *Journal of Abnormal Psychology ; Journal of Nervous and Mental Disease ; Journal of Personality ; Journal of Personality Assessment ; Journal of Personality Disorders* ; and *Personality Disorders: Theory, Research, and Treatment*, and posted requests for published and unpublished data on 4 listservs (*Association for Behavioral and Cognitive Therapies, Society for Personality and Social Psychology, Society for Research in Psychopathology*, and *Society for a Science of Clinical Psychology*). These search efforts yielded an additional 33 studies or unpublished data sets that met inclusion criteria. Of the 563 studies that underwent full-text review, 436 were excluded. Studies were excluded because they did not assess *DSM–IV* personality disorder symptoms or diagnoses ($k = 185$) or interpersonal functioning (interpersonal traits measured using a circumplex measure of interpersonal style or functioning within the parent– child, family, peer, or romantic domains; $k = 155$); they reported data for personality disorders combined across personality disorder categories or clusters ($k = 20$); personality disorders and interpersonal functioning were not assessed in close temporal proximity to one another ($k = 13$); they did not include an appropriate control or comparison group ($k = 15$); they reported data that were redundant with that reported in another included study ($k = 6$); or information necessary for calculating effect sizes was not reported and we were unable to obtain the relevant data from the study authors ($k = 42$). Finally, we contacted 60 research teams requesting additional data necessary for the computation of effect sizes; 22 study authors provided additional or unpublished data that were included in the meta-analysis. All told, these search efforts yielded 127 studies and unpublished data sets that met inclusion criteria and were selected for inclusion in the meta-analytic review.

Study Coding

Studies that met inclusion criteria were coded for the following: (a) personality disorder and interpersonal functioning information, (b) descriptive study information and sample characteristics, and (c) data for the calculation of effect sizes. All studies were coded by the first author (S. W.), and 25% of randomly selected studies were second coded by the second author (C. B. S.) to assess reliability of study coding. Interrater reliability coefficients (kappas for categorical variables, intraclass correlation coefficients [*ICCs*] for continuous

variables) for the first coding pass are provided below; following conventional guidelines, kappas greater than .75 and *ICC*s greater than .90 reflect excellent agreement beyond chance, kappas between .40 and .75 and *ICC*s between .50 and .90 reflect good-to-fair agreement, and kappas less than .40 and *ICC*s less than .50 reflect poor agreement (Fleiss, 1981; Mitchell, 1979); any coding disagreements were resolved by discussion and consensus. An overview of all included studies and unpublished data sets, study characteristics, and study effect sizes is given in Appendix A (interpersonal style) and Appendix B (specific relationship domains).

Personality disorder constructs—Information coded for personality disorders included the personality disorder(s) assessed (κ = 1.00); the method by which personality disorders were assessed, coded as self-report or other (structured clinician interview, unstructured clinician interview, informant report, observational, archives/records; κ = .95); the specific personality disorder measure(s) used (κ = 1.00); and reliability coefficients (interrater reliability: kappa, intraclass correlation coefficient, correlation coefficient, percentage agreement; internal consistency: alpha) for the personality disorder measure (*ICC* = .96).

Interpersonal functioning constructs—Information coded for interpersonal functioning included a description of the interpersonal functioning construct(s) assessed; the interpersonal functioning domain (interpersonal style; quality of functioning in parent–child, family, peer, or romantic domains; κ = 1.00); the method by which interpersonal functioning was assessed, coded as self-report or other (clinician interview, informant report, observational, archives/ records, experimental/laboratory; κ = .84); the specific interpersonal functioning measure(s) used (κ = 1.00); and reliability coefficients (interrater reliability: kappa, intraclass correlation coefficient, correlation coefficient, percentage agreement; internal consistency: alpha) for the interpersonal functioning measure (κ = .99).

Study information—Descriptive study information coded included the study citation (authors, year); study publication status (published, unpublished; κ = 1.00); and, if a published study, in which journal. We also coded the time frame of assessment of personality disorders and interpersonal functioning constructs (concurrent, functioning in the past 1 year; κ = 1.00) to ensure that they were within close temporal proximity; if a study reported prospective, longitudinal assessment, we included only effect sizes for the earliest available concurrent assessment because this yielded the largest sample size.

Sample characteristics—Descriptive sample information coded included participant age, coded as child/adolescent (younger than 18 years) or adult (18 years and older; κ = 1.00); participant sex, coded as predominantly (greater than 50%) male or female (κ = .94); and the sample population, coded as nonclinical (university student, community, school) or clinical (psychiatric inpatient or outpatient, forensic; κ = .79); where relevant, the comparison group was also coded as nonclinical (university student, community, school) or clinical (psychiatric inpatient or outpatient, forensic), but studies with comparison groups were infrequent enough to preclude examination in moderator analyses.

Effect size data—Information for the calculation of effect sizes coded included statistics for the association between personality disorder and interpersonal functioning variables

(correlation coefficients, means and standard deviations, percentages, chi-square statistic, *t* statistic; *ICC* = .99) and the sample size(s) for each test (*ICC* = .99).

Data Analysis

Effect sizes for associations between personality disorders and interpersonal functioning were derived from each study. All effect sizes were either coded directly from studies as *r*s or were converted to *r*s prior to analyses using standard formulae (Lipsey & Wilson, 2001; Schmidt & Hunter, 2014). All effect sizes were coded so that positive effect sizes indicated larger associations with interpersonal dysfunction. Several studies reported multiple effect sizes for an interpersonal functioning domain (e.g., satisfaction and intimacy in the romantic domain); in such instances, effect sizes were averaged within studies, resulting in one effect size for each personality disorder and each interpersonal domain per study. Several studies also reported separate effect sizes for different assessment methods (e.g., self-report and informant report) or subsamples (e.g., males and females); in such instances, effect sizes were averaged across method or sample characteristic for overall analyses, but were examined separately in subsequent moderator analyses, as appropriate.

We conducted 120 separate meta-analyses of associations between each of the 10 personality disorders and the 12 interpersonal functioning domains. We used a random-effects model, which takes into consideration sample variation, as well as true between-study variation. Meta-analyses followed Hunter-Schmidt procedures (Schmidt & Hunter, 2014; see also Hunter & Schmidt, 2004). Like other meta-analytic approaches (e.g., Hedges & Olkin, 1985; Rosenthal, 1991), the Hunter-Schmidt approach accounts for random and systematic variation in study effects; the distinctive feature of this approach is that it also provides procedures to correct for measurement artifacts, namely measurement unreliability and restriction of range (though correction for the former is more common, given the information typically reported in studies). The Hunter-Schmidt approach has been compared with other meta-analytic procedures using simulation methods and has been found to yield generally comparable results, or even more accurate results under certain conditions (e.g., when population effect sizes are variable; Field, 2001, 2005; Schulze, 2004). We selected the Hunter-Schmidt approach because it allowed us to correct for both sampling error and measurement unreliability in study effects. Because personality disorder and interpersonal functioning constructs are indexed by ratings or scores on diagnostic interviews, questionnaires, or observed behavior, some amount of unreliability in the measures used is expected, thus leading to attenuated estimates of the true correlation between constructs (Campbell & Fiske, 1959). Reliability statistics (e.g., alpha coefficients) for the personality disorder and interpersonal functioning measures used were often, but not always, reported in the studies included in the meta-analysis—the Hunter-Schmidt approach uses the distribution of all available reliability estimates to correct for attenuation due to measurement unreliability, thereby allowing us to correct all effects for measurement unreliability, even those from studies that did not report reliability statistics.

Each meta-analysis yielded an estimated mean population effect size, corrected for sampling error and measurement unreliability, around which we calculated 80% credibility intervals and 95% confidence intervals (see Schmidt & Hunter, 2014). Credibility intervals and

confidence intervals give different but complementary information. Credibility intervals define the range within which population effect sizes are distributed, and are calculated using the standard deviation; an 80% credibility interval that does not include zero indicates that more than 80% of the study effect sizes are greater than zero. Confidence intervals give an estimate of variability around the mean population effect size, and are calculated using the standard error; a 95% confidence interval that does not include zero indicates that the estimated mean population effect size is greater than 2 standard deviations away from zero and can be considered statistically significant. When neither the 80% credibility interval nor the 95% confidence interval for a mean population effect size included zero, we considered it to be a meaningful effect. We further considered effect sizes for a personality disorder-interpersonal functioning domain that fell outside both the 80% credibility interval and the 95% confidence interval for another personality disorder-interpersonal functioning domain to be meaningfully different from one another (see Schmidt & Hunter, 2014)—this allowed us to directly compare effect sizes across personality disorders and interpersonal functioning domains. Following conventional guidelines, we considered mean population effect sizes greater than |.20| to be modest, greater than |.30| to be moderate, and greater than |.50| to be large (Cohen, 1988).

In addition to computing mean effect sizes for associations between personality disorders and interpersonal style, we also applied the structural summary method developed for interpersonal circumplex profiles (see Gurtman, 1992; Gurtman & Pincus, 2003; Wright et al., 2009; Zimmermann & Wright, 2017). This approach yields three structural parameters, elevation (the average correlation with interpersonal style), amplitude (difference between the average correlation and the peak correlation of the profile), and angular displacement (the angular distance from 0° to the peak correlation of the profile), that summarize the structure of the entire profile of associations for each personality disorder, along with a goodness-of-fit statistic for the profile (see Gurtman, 1992; Gurtman & Pincus, 2003; Wright et al., 2009; Zimmermann & Wright, 2017, for detailed formulae used to compute these statistics).

To determine whether moderator analyses were warranted, we examined variability in the estimated mean population effect sizes (see Schmidt & Hunter, 2014). When the proportion of variance in observed effect sizes due to sampling error and measurement unreliability was greater than 75%, the population of studies was considered to be homogenous, suggesting a lack of study moderators; when the proportion was less than 75%, the population of studies was considered to be heterogeneous, and we thus examined potential moderators to account for this heterogeneity. Moderator analyses involved stratifying effect sizes by each moderator in turn, then conducting separate meta-analyses within each stratum; if the resulting mean effect sizes within each stratum fell outside both the 80% credibility interval and the 95% confidence interval for the comparison stratum, we concluded that the effect sizes come from different populations. All analyses were conducted using the Hunter & Schmidt Meta-Analysis Programs Package (version 1.2; Schmidt & Le, 2014).

Finally, we attempted to combat potential publication bias by including both published and unpublished studies, and by seeking out relevant unpublished data sets. We investigated potential publication bias attributable to the underrepresentation of published studies with

small samples and the consequent lower power to detect significant effects by conducting cumulative meta-analyses for published studies based on sample size (see Kepes, Banks, McDaniel, & Whetzel, 2012; Kepes, Banks, & Oh, 2014; Schmidt & Hunter, 2014). In cumulative meta-analyses, studies are iteratively added to the overall meta-analysis based on decreasing sample sizes; increasing mean effect sizes indicates the possibility of publication bias in that studies with smaller samples that are published will tend to report larger effects (relative to studies with smaller samples that go unpublished, which will tend to report smaller effects).

Results

Overview of Studies Included in the Meta-Analyses

A total of 127 studies, comprising a total of 2,579 effect sizes, were included in this review (see Appendixes A and B for an overview of the included studies). The number of studies available for each meta-analysis varied widely. A heatmap of the number of studies in each meta-analysis is presented in Figure 4, with darker shading indicating a larger number of studies. The majority of studies examining associations between personality disorders and interpersonal functioning focused on interpersonal style (mean $k = 13$, $SD = 3$; mean $N = 3,751$, $SD = 1,120$) relative to functioning in specific relationship domains (mean $k = 8$, $SD = 7$; mean $N = 2,531$, $SD = 2,961$). Moreover, the majority of studies examining associations between personality disorders and interpersonal style focused on avoidant (mean $k = 17$, $SD = 2$; mean $N = 4,694$, $SD = 442$), narcissistic (mean $k = 16$, $SD = 2$; mean $N = 6,296$, $SD = 442$), and borderline (mean $k = 15$, $SD = 1$; mean $N = 3,808$, $SD = 418$) personality disorders; relatively fewer studies focused on the other personality disorders (mean ks ranged from 10 to 13, mean Ns ranged from 2,844 to 4,334). The majority of studies examining associations between personality disorders and functioning in specific relationship domains focused on antisocial (mean $k = 18$, $SD = 7$; mean $N = 6,788$, $SD = 2,953$) and borderline (mean $k = 17$, $SD = 11$; mean $N = 5,414$, $SD = 5,313$) personality disorders; considerably fewer studies focused on the other personality disorders (mean ks ranged from 5 to 8, mean Ns ranged from 1,153 to 3,836). Moreover, the majority of these studies focused on the romantic domain (mean $k = 14$, $SD = 8$; mean $N = 4,796$, $SD = 3,285$). The largest number of studies identified were for associations between borderline and antisocial personality disorders and functioning in the romantic domain ($k = 33$, $N = 13,290$ and $k = 25$, $N = 7,379$, respectively); there were considerably fewer studies that focused on the parent– child, family, or peer relationships (mean ks ranged from 3 to 7, mean Ns ranged from 852 to 2,318). In fact, there were studies of the peer relationship for only 5 of the 10 personality disorders.

Associations Between Personality Disorders and Interpersonal Style

Average effect sizes, corrected for sampling error and measurement unreliability, are presented in Table 3 and illustrated in Figure 5. Each personality disorder showed a distinct pattern of associations with interpersonal style that was consistent with its characteristic form of dysfunction, as defined by its diagnostic criteria in *DSM–IV* and *DSM–5* Section II. Comparisons of associations with interpersonal style for each personality disorder (i.e., whether the effect for one personality disorder-interpersonal functioning domain fell outside

of the 80% credibility interval and 95% confidence interval of another personality disorder-interpersonal functioning domain) identified a number of meaningful differences in associations across personality disorders, indicating that each personality disorder (with two exceptions, noted below) showed unique associations with interpersonal dysfunction relative to the other personality disorders. Moreover, parameters derived using the structural summary method (see Table 4) revealed interpersonal differentiation and discriminability across the personality disorders. Taken together, the results for interpersonal style lend support for the construct and discriminant validity of the current personality disorder diagnoses, as well as the proposed conceptualization of disturbed self and interpersonal functioning.

Associations with interpersonal style and comparisons across personality disorders—Paranoid, schizoid, and schizotypal personality disorders, historically classified as Cluster A (odd-eccentric) personality disorders, and avoidant personality disorder, historically classified as a Cluster C (anxious-fearful) personality disorders, all showed moderate-to-large and significant associations with coldness, vindictiveness, and social avoidance (see Table 3 and Figure 5). Paranoid and schizotypal personality disorders showed moderate and modest, respectively, associations with domineeringness. Avoidant personality disorder showed a large and significant association with nonassertiveness, whereas schizotypal personality disorder showed a modest but significant association. Paranoid and schizotypal personality disorders also showed modest-to-moderate, significant associations with intrusiveness. In addition, avoidant personality disorder showed a moderate and significant association with exploitability and a modest, significant association with overnurturance.

A direct comparison of effect sizes (i.e., using the 80% credibility interval and 95% confidence interval) for paranoid, schizoid, schizotypal, and avoidant personality disorder indicated that these personality disorders all showed comparable associations with coldness; paranoid, schizoid, and schizotypal personality disorders also showed comparable associations with social avoidance, nonassertiveness, exploitability, and overnurturance. However, paranoid personality disorder showed larger associations with vindictiveness and intrusiveness than did schizoid and avoidant personality disorders, and larger associations with domineeringness than did avoidant personality disorder; avoidant personality disorder showed larger associations with social avoidance than did paranoid, but not schizoid or schizotypal, personality disorders, and larger associations with nonassertiveness and exploitability than did paranoid, schizoid, and schizotypal personality disorders.

Antisocial, borderline, histrionic, and narcissistic personality disorders, historically classified as Cluster B (dramatic-emotional-erratic) personality disorders, all showed moderate-to-large and significant associations with domineeringness, vindictiveness, and intrusiveness (see Table 3 and Figure 5). Antisocial, borderline, and narcissistic personality disorders also showed moderate-to-large, significant associations with coldness. Borderline personality disorder was also moderately and significantly associated with social avoidance. Borderline and histrionic personality disorders showed modest and significant associations with exploitability, and histrionic personality disorder showed a modest, significant association with overnurturance.

A direct comparison of effect sizes (i.e., using the 80% credibility interval and 95% confidence interval) for antisocial, borderline, histrionic, and narcissistic personality disorder indicated that antisocial, histrionic, and narcissistic personality disorders showed comparable associations with domineeringness, vindictiveness, coldness, social avoidance, nonassertiveness, and intrusiveness. Borderline personality disorder showed comparable associations with domineeringness, vindictiveness, and intrusiveness relative to the other three personality disorders, but larger associations with social avoidance and nonassertiveness than did antisocial, histrionic, and narcissistic personality disorders; larger associations with coldness than did antisocial and histrionic (but not narcissistic) personality disorders; larger associations with exploitability than did antisocial and narcissistic (but not histrionic) personality disorders; and larger associations with overnurturance than did antisocial (but not histrionic or narcissistic) personality disorders. Histrionic personality disorder showed larger associations with exploitability and overnurturance than did antisocial and narcissistic (but not borderline) personality disorders.

Dependent and obsessive– compulsive personality disorders, historically classified as Cluster C personality disorders, showed distinct patterns of associations with interpersonal style relative to the other personality disorders (see Table 3 and Figure 5). Dependent personality disorder showed moderate-to-large, significant associations with vindictiveness, social avoidance, nonassertiveness, exploitability, overnurturance, and intrusiveness, as well as a modest, significant association with coldness (i.e., it was significantly associated with all interpersonal traits except domineeringness). Obsessive– compulsive personality disorder showed modest, significant associations with domineeringness, vindictiveness, coldness, and social avoidance.

A direct comparison of effect sizes (i.e., using the 80% credibility interval and 95% confidence interval) for dependent and obsessive– compulsive personality disorders with the other personality disorders indicated that dependent personality disorder showed generally larger associations with nonassertiveness, exploitability, and overnurturance than the other personality disorders. By contrast, obsessive– compulsive personality disorder did not show a consistent pattern of differences in associations with interpersonal style relative to the other personality disorders.

Structural summary method for interpersonal style—Structural parameters for each of the personality disorders, as well as the goodness-of-fit statistic, are presented in Table 4. The R^2 statistic indicated good fit with the expected sinusoidal pattern for each personality disorder with the exceptions of dependent and obsessive– compulsive personality disorders, indicating that these personality disorders did not show high interpersonal prototypicality. Paranoid, schizotypal, borderline, avoidant, and dependent personality disorders each showed moderate elevation, indicating moderate interpersonal distress, whereas histrionic and obsessive– compulsive personality disorders showed modest elevation, and schizoid and antisocial personality disorders showed trivial elevation. Paranoid, schizoid, antisocial, histrionic, narcissistic, and avoidant personality disorders each showed moderate differentiation in their interpersonal style, indexed by their moderate amplitudes, whereas schizotypal and borderline personality disorders showed modest differentiation and dependent and obsessive–compulsive personality disorders showed trivial differentiation.

Differences in angular displacements indicated different locations, or predominant interpersonal themes, for each personality disorder: Paranoid, schizoid, schizotypal, and obsessive– compulsive personality disorders were each located in the dominant-cold quadrant, whereas avoidant personality disorder was located in the submissive-cold quadrant; antisocial, borderline, and narcissistic personality disorders were each located in the dominant-cold quadrant, whereas histrionic personality disorder was located in the dominant-warm quadrant, and dependent personality disorder was located in the submissive-warm quadrant. Moreover, even when they were located in the same or adjacent quadrants, the angular displacement for most personality disorders differed by an octant's width (45°) or more, suggesting meaningful differences in their locations in the interpersonal circumplex space.

Summary—Taken together, these results indicate that each of the 10 personality disorders in the current diagnostic classification system (*DSM–IV* and *DSM–5* Section II), with the potential exception of obsessive– compulsive personality disorder, shows associations with dysfunctional interpersonal traits and unique predominant interpersonal themes, suggesting both construct and discriminant validity. Paranoid, schizoid, and schizotypal personality disorders showed associations primarily with cold interpersonal traits, and avoidant personality disorder showed associations with both submissive and cold interpersonal traits. Antisocial, histrionic, and narcissistic personality disorders showed associations primarily with dominant interpersonal traits. Borderline and dependent personality disorders showed associations with all problematic interpersonal traits, except nonassertiveness and overnurturance for borderline personality disorder and domineeringness for dependent personality disorder. Obsessive– compulsive personality disorder showed associations primarily with cold interpersonal traits. Moreover, the results of the structural summary method indicate differentiation in interpersonal style, as well as unique interpersonal themes, for most of the personality disorders.

Associations Between Personality Disorders and Interpersonal Functioning in Specific Relationship Domains

Average effect sizes, corrected for sampling error and measurement unreliability, are presented in Table 5. Personality disorders were associated with modest impairments in interpersonal functioning in specific relationship domains. Moreover, comparisons of associations with functioning in specific interpersonal domain for each personality disorder (i.e., whether the effect for one personality disorder-interpersonal functioning domain fell outside of the 80% credibility interval and 95% confidence interval of another personality disorder-interpersonal functioning domain) identified several noteworthy differences in associations for each personality disorder and for specific relationship domains. Taken together, the results for interpersonal functioning in specific interpersonal domains lend support for the construct and discriminant validity of the current personality disorder diagnoses, but they also provide little evidence for the pervasiveness of associations across relationship domains noted in both current and proposed conceptualizations.

Associations with interpersonal functioning in specific relationship domains and comparisons across personality disorders and relationship domains—

Paranoid personality disorder showed modest-to-moderate, significant associations with impairment in the parent– child and family domains, but a trivial, nonsignificant association with functioning in the romantic domain; a direct comparison of effect sizes (i.e., using the 80% credibility interval and 95% confidence interval) indicated that effects were comparable across the different relationship domains. Schizoid personality disorder showed only a modest, but significant, association with impairment in the family domain, and trivial, nonsignificant associations with functioning in the parent– child and romantic domains; a direct comparison of effect sizes indicated that effects for the family domain were larger than for the romantic domain. Schizotypal personality disorder showed a large, significant association with impairment in the peer domain, and moderate, significant associations with impairment in the parent– child and family domains, but a trivial, nonsignificant association with functioning in the romantic domain; a direct comparison of effect sizes indicated that effects for the peer domain were larger than for the other relationship domains, and effects for the romantic domain were smaller. Avoidant personality disorder showed a large, significant association with impairment in the peer domain, and modest, significant associations with impairment in the parent– child and family domains, but a trivial, nonsignificant association with functioning in the romantic domain; similar to schizotypal personality disorder, a direct comparison of effect sizes indicated that effects for the peer domain were larger than for the other relationship domains, and effects for the romantic domain were smaller.

Antisocial personality disorder showed a moderate, significant association with impairment in the peer domain, a modest, significant association with impairment in the family domain, and trivial, nonsignificant associations with functioning in the parent– child and romantic domains; a direct comparison of effect sizes indicated that effects for the peer domain were larger than for the other relationship domains. Histrionic personality disorder showed only a modest, but significant, association with impairment in the family domain, and negative, but nonsignificant, associations with impaired functioning in the parent– child and romantic domains; a direct comparison of effect sizes indicated that effects for the family domain were larger than for the parent– child domain. Narcissistic personality disorder showed trivial, nonsignificant associations with impairment in the parent– child, family, and romantic domains; a direct comparison of effect sizes indicated that effects were comparable across the different relationship domains. Borderline personality disorder showed modest-to-moderate, significant associations with impairment in the parent– child, family, peer, and romantic, domains; a direct comparison of effect sizes indicated that effects for the family and peer domains were larger than for the parent– child and romantic domains. Dependent personality disorder showed only a modest, but significant, association with impairment in the family domain; it showed a trivial, nonsignificant association with functioning in the parent– child domain, and a negative, but nonsignificant, association with impaired functioning in the romantic domain; a direct comparison of effect sizes indicated that effects for the family domain were larger than for the parent– child and romantic domains. Obsessive– compulsive personality disorder showed trivial, nonsignificant associations with functioning in the family and peer domains, and negative, but nonsignificant, associations with impaired functioning in the parent– child and romantic relationship domains.

Summary—Taken together, these results indicate that personality disorders are generally associated with impaired relationship functioning, suggesting construct validity. Moreover, the specific domains affected and the strength of the associations varied for each personality disorder, and comparison of effect sizes for each personality disorder indicated several noteworthy differences for specific relationship domains, suggesting discriminant validity. Paranoid, schizotypal, borderline, and avoidant personality disorders showed modest-to-moderate associations with impairment in the parent– child domain; associations for schizotypal personality disorder were larger than for all of the other personality disorders except paranoid personality disorder. Paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, avoidant, and dependent (but not narcissistic or obsessive– compulsive) personality disorders showed modest-to-moderate associations with impairment in the family domain; associations for paranoid, schizotypal, and borderline personality disorders were comparable with one another, but were generally larger than for the other personality disorders. Schizotypal, antisocial, borderline, and avoidant personality disorders showed moderate-to-large associations with impairment in the peer domain; the peer domain was not assessed for any of the other personality disorders with the exception of obsessive–compulsive personality disorder, for which there was only one study. Notably, only borderline personality disorder showed a significant, albeit modest, association with impairment in the romantic domain—associations for the other personality disorders were all trivial or negative and nonsignificant, though the association for borderline personality disorder was larger only relative to schizoid, avoidant, and obsessive– compulsive personality disorders.

Moderators of Associations Between Personality Disorders and Interpersonal Functioning

We examined five potential moderators of the associations between personality disorders and interpersonal functioning: the method used to assess the personality disorder (self-report vs. other), the method used to assess the interpersonal functioning construct (self-report vs. other), the age of the sample (child/adolescent vs. adult), the sex of the sample (male vs. female), and the type of sample (nonclinical vs. clinical). To stratify studies in a meaningful way, we required there be at least 2 studies per moderator. There was a sufficient number of studies to conduct moderator analyses for associations between personality disorders and interpersonal style for all moderators with the exception of age of sample, which had too few studies conducted in child/adolescent samples. We also conducted moderator analyses for associations between personality disorders and interpersonal functioning in specific relationship domains. There was a sufficient number of studies to conduct moderator analyses for associations between all personality disorders and functioning in the romantic domain for all moderators with the occasional exception of age of sample, for which there were sometimes too few studies conducted in child/ adolescent samples; there was generally a sufficient number of studies to conduct moderator analyses for all moderators for associations between antisocial and borderline personality disorders and functioning in the parent– child, family, and peer domains with the occasional exceptions of age and sex of sample, for which there were sometimes too few studies conducted in child/adolescent or male samples. The proportion of variance in the observed effect sizes accountable by sampling error and measurement unreliability was almost always less than 75% for each of these associations, indicating heterogeneity in the population of studies and suggesting that

the examination of potential moderators to account for this heterogeneity was warranted (see Schmidt & Hunter, 2014); the four exceptions were associations between dependent personality disorder and coldness and exploitability, and antisocial and borderline personality disorders and functioning in the parent– child relationship, each of which had more than 75% variance attributable to sampling error and measurement unreliability, suggesting that these were homogenous study populations.

Overlap among moderators—Prior to conducting moderator analyses, we considered the extent to which these five moderator variables overlapped by calculating uncertainty coefficients for each pair of moderators. Uncertainty coefficients give an index of the proportion of variance in one nominal variable that is accounted for by another nominal variable. As shown in Table 6, there was modest but notable overlap between personality disorder method and interpersonal method, personality disorder method and sample age, interpersonal method and sample age, and sample age and sample sex, with coefficients greater than .10 indicating more than 10% overlapping variance among these moderator variables. Specifically, 84% of studies that used self-reports to assess personality disorders also used self-reports to assess interpersonal functioning, whereas only 44% of studies that used other methods to assess personality disorders used self-reports; 58% of studies among adult samples used self-reports to assess personality disorders, but only 2% of studies among child/adolescent samples did; 73% of studies among adult samples used self-reports to assess interpersonal functioning, but only 24% of studies among child/ adolescent samples did; and 72% of studies among adult samples were conducted among predominately female samples, versus 49% of studies among child/adolescent samples. When moderator variables are not independent and when there is a sufficient number of studies, moderator analyses should be conducted in a hierarchical fashion, in which studies are stratified by both (or more) of the relevant moderator variables (see Schmidt & Hunter, 2014). Although there was generally a sufficient number of studies to allow us to conduct analyses separately for each moderator, there were not enough studies to allow us to conduct hierarchical moderator analyses. Thus, interpretation of the below results, which were conducted for studies stratified by a single moderator at a time, must be interpreted with caution.

Moderators of associations between personality disorders and interpersonal style—An overview of the number of studies for each moderator for each meta-analysis of associations between personality disorders and interpersonal style, and average effect sizes, corrected for sampling error and measurement unreliability, for studies stratified by each moderator, is presented in Table 7.

Method used to assess personality disorder—A comparable number of studies examined associations between personality disorders and interpersonal style using self-reports (mean $k = 7$, $SD = 2$; mean $N = 1{,}416$, $SD = 1{,}073$) and other methods (mean $k = 7$, $SD = 2$; mean $N = 2{,}706$, $SD = 624$) for assessing personality disorders. One notable exception was that studies of narcissistic personality disorder more commonly used self-reports ($k = 12$, $SD = 1$; $N = 4{,}177$, $SD = 364$) than other methods ($k = 6$, $SD = 1$; $N = 3{,}188$, $SD = 81$) of personality disorder assessment.

Several personality disorders showed larger associations with dysfunctional interpersonal traits when methods other than self-reports were used to assess personality disorders. The moderate associations between paranoid personality disorder and domineeringness and intrusiveness, and the modest association between schizotypal personality disorder and domineeringness, in the overall meta-analyses were evident only when assessed using other methods. The large association between antisocial personality disorder and domineeringness in the overall meta-analysis was evident when assessed using other methods, but was significantly smaller, though still moderate, when using self-reports; the moderate association with intrusiveness was evident only when assessed using other methods. The moderate association between borderline personality disorder and domineeringness in the overall meta-analysis was evident only when assessed using other methods; the moderate association with intrusiveness was large when assessed using other methods, but was significantly smaller, though still moderate, when using self-reports. The moderate association between histrionic personality disorder and vindictiveness was only evident when assessed using other methods; although histrionic personality disorder showed a nonsignificant association with coldness in the overall meta-analysis, this association was significant, though modest, when assessed using other methods. Although narcissistic personality disorder showed a nonsignificant association with nonassertiveness in the overall meta-analysis, this association was significant and negative, though modest, when assessed using other methods. The large association between dependent personality disorder and intrusiveness in the overall meta-analysis was evident when assessed using other methods, but significantly smaller, though still moderate, when using self-reports. Although obsessive– compulsive personality disorder showed a modest association with domineeringness in the overall meta-analysis, this association was moderate when assessed using other methods.

A number of personality disorders also showed larger associations with dysfunctional interpersonal traits when self-reports were used to assess personality disorders. Although schizoid personality disorder showed a nonsignificant association with overnurturance in the overall meta-analysis, this association was significant and negative, though modest, when assessed using self-reports. Histrionic personality disorder showed a modest association with overnurturance in the overall meta-analysis, but this association was moderate and significant when assessed using self-reports, and nonsignificant when assessed using other reports. Dependent personality disorder showed moderate associations with social avoidance and nonassertiveness in the overall meta-analysis, but these associations were large when assessed using self-reports, and significantly smaller, though still modest to moderate, when assessed using other methods.

Taken together, moderator analyses comparing associations between personality disorders and interpersonal style as a function of method used to assess personality disorders indicated that associations with more dominant and cold traits were generally stronger when personality disorders were assessed using other methods, whereas associations with more submissive and warm traits were generally stronger when personality disorders were assessed using self-reports.

Method used to assess interpersonal functioning—Considerably more studies examined associations between personality disorders and interpersonal style using self-reports (mean $k = 10$, $SD = 3$; mean $N = 2,489$, $SD = 1,113$) than using other methods (mean $k = 3$, $SD = 1$; mean $N = 1,723$, $SD = 564$) for assessing interpersonal style.

Several personality disorders showed larger associations with dysfunctional interpersonal traits when methods other than self-reports were used to assess interpersonal style. The moderate-to-large associations between paranoid personality disorder and vindictiveness and intrusiveness in the overall meta-analyses were evident when assessed using other methods, but were significantly smaller, though still large, for vindictiveness, and nonsignificant for intrusiveness, when using self-reports. The large association between schizoid personality disorder and social avoidance in the overall meta-analyses was large when assessed using other methods, but was significantly smaller, though moderate, when using self-reports; the nonsignificant association with nonassertiveness in the overall meta-analysis was moderate and significant when assessed using other methods. The moderate-to-large associations between schizotypal personality disorder and vindictiveness, coldness, and social avoidance in the overall meta-analyses were large when assessed using other methods, but were significantly smaller, though still moderate, when using self-reports. The moderate-to-large associations between antisocial personality disorder and vindictiveness, coldness, and intrusiveness in the overall meta-analyses were evident when assessed using other methods, but were significantly smaller, though still modest to moderate, for vindictiveness and coldness, and nonsignificant for intrusiveness, when using self-reports. The nonsignificant association between antisocial personality disorder and nonassertiveness in the overall meta-analyses was significant, negative, and moderate when assessed using other reports. The moderate-to-large associations between borderline personality disorder and vindictiveness and intrusiveness in the overall meta-analyses were evident when assessed using other methods, but were significantly smaller, though still moderate to large, when using self-reports. The moderate-to-large associations between histrionic personality disorder and vindictiveness and intrusiveness in the overall meta-analyses were evident when assessed using other reports, but were significantly smaller, though still large, for intrusiveness, and nonsignificant for vindictiveness, when using self-reports; the nonsignificant association with coldness in the overall meta-analysis was significant and moderate when assessed using other reports. The moderate-to-large associations between narcissistic personality disorder and vindictiveness and intrusiveness were evident when assessed using other methods, but were significantly smaller, though still moderate to large, when using self-reports; the nonsignificant association with nonassertiveness in the overall meta-analysis was significant, negative, and moderate when assessed using other methods. The large association between dependent personality disorder and intrusiveness in the overall meta-analysis was large when assessed using other methods, but significantly smaller, though still moderate, when assessed using self-reports. Although obsessive– compulsive personality disorder showed a modest association with vindictiveness and nonsignificant intrusiveness in the overall meta-analyses, these associations were significant and modest to moderate when assessed using other reports.

A number of personality disorders also showed larger associations with dysfunctional interpersonal traits when self-reports were used to assess interpersonal style. The modest-to-moderate associations between borderline personality disorder and social avoidance and exploitability, and the nonsignificant associations with nonasssertiveness and overnurturance, in the overall meta-analyses were modest to moderate when assessed using self-reports, but nonsignificant when assessed using other reports. The modest association between histrionic personality disorder and overnurturance in the overall meta-analysis was moderate when assessed using self-reports, but nonsignificant when assessed using other reports. Dependent personality disorder showed moderate associations with social avoidance, nonassertiveness, and exploitability in the overall meta-analysis, but these associations were moderate to large when assessed using self-reports and significantly smaller and modest to moderate for nonassertiveness and exploitability, and nonsignificant for social avoidance, when assessed using other reports.

Taken together, moderator analyses comparing associations between personality disorders and interpersonal style as a function of method used to assess interpersonal style indicated that associations with more dominant and cold traits were generally stronger when other methods were used to assess interpersonal style, whereas associations with more submissive and warm traits were generally stronger when interpersonal style was assessed using self-reports.

Age of sample—Most studies examined associations between personality disorders and interpersonal style in adult samples (mean $k = 12$, $SD = 3$; mean $N = 3{,}719$, $SD = 1{,}120$) compared with child/adolescent samples (mean $k = 1$, $SD = 0$; mean $N = 32$, $SD = 0$). As such, no moderator analyses for age of sample were conducted for associations between personality disorders and interpersonal style.

Sex of sample—Considerably more studies examined associations between personality disorders and interpersonal style in predominately female samples (mean $k = 10$, $SD = 3$; mean $N = 3{,}568$, $SD = 1{,}113$) compared with predominately male samples (mean $k = 2$, $SD = 1$; mean $N = 261$, $SD = 69$).

Several personality disorders showed larger associations with dysfunctional interpersonal traits when assessed in predominately female samples. The large association between paranoid personality disorder and vindictiveness in the overall meta-analysis was evident among females, but was significantly smaller, though still large, among males; the moderate association with intrusiveness in the overall meta-analysis was evident only among females. Schizoid personality disorder showed moderate-to-large associations with vindictiveness and coldness in the overall meta-analyses, but these associations were only evident among females. The large association between schizotypal personality disorder and vindictiveness, the modest association between schizotypal personality disorder and intrusiveness, and the moderate-to-large associations between antisocial and borderline personality disorders and intrusiveness in the overall meta-analyses were evident only among females. The large association between histrionic personality disorder and intrusiveness in the overall meta-analysis was evident among females, but was significantly smaller and modest among males. The moderate-to-large associations between narcissistic personality disorder and

vindictiveness, coldness, and intrusiveness in the overall meta-analyses were evident among females, but were significantly smaller, though moderate, for vindictiveness, and nonsignificant for coldness and intrusiveness, among males. The large association between avoidant personality disorder and coldness was evident among females, but was significantly smaller, though moderate, among males. The moderate-to-large associations between dependent personality disorder and vindictiveness and intrusiveness in the overall meta-analyses were evident among females, but were nonsignificant for vindictiveness and significantly smaller and modest for intrusiveness among males.

By contrast, several personality disorders showed larger associations with dysfunctional interpersonal traits when assessed in predominately male samples. Although schizoid personality disorder showed a nonsignificant association with exploitability in the overall meta-analysis, this association was significant and modest among males. The modest association between schizotypal personality disorder and nonassertiveness in the overall meta-analysis was moderate when assessed among males, and significantly smaller, though modest, among females; the nonsignificant association with exploitability in the overall meta-analysis was significant and moderate among males. Histrionic personality disorder showed nonsignificant associations with social avoidance and nonassertiveness, and a modest association with exploitability, in the overall meta-analyses, but these associations were modest to moderate and significant among males. The nonsignificant association between narcissistic personality disorder and exploitability in the overall meta-analysis was significant and modest among males. Dependent personality disorder showed moderate associations with social avoidance, nonassertiveness, and exploitability in the overall meta-analyses, but these associations were large among males and significant smaller, though still moderate, among females. Obsessive– compulsive personality disorder showed modest associations with vindictiveness and social avoidance, and nonsignificant nonassertiveness in the overall meta-analyses, but these associations were significant and moderate to large among males and significantly smaller, though still moderate, for vindictiveness and social avoidance, and nonsignificant for nonassertiveness, among females.

Taken together, moderator analyses comparing associations between personality disorders and interpersonal style as a function of whether they are assessed in predominantly female versus male samples indicated that associations with more dominant and cold traits were generally stronger when assessed among predominantly female samples, whereas associations with more submissive and warm traits were generally stronger when assessed among predominantly male samples.

Type of sample—A comparable number of studies examined associations between personality disorders and interpersonal style in nonclinical (e.g., university, community; mean $k = 6$, $SD = 2$; mean $N = 2{,}401$, $SD = 1{,}062$) and clinical (e.g., psychiatric, forensic) samples (mean $k = 4$, $SD = 1$; mean $N = 808$, $SD = 216$), with one exception: a larger number of studies examined associations between narcissistic personality disorder and interpersonal style in nonclinical ($k = 10$, $SD = 1$; $N = 5{,}170$, $SD = 328$) than other ($k = 3$, $SD = 0$; $N = 599$, $SD = 54$) samples.

Several personality disorders showed larger associations with dysfunctional interpersonal traits when assessed in nonclinical samples. Paranoid personality disorder showed a moderate association with intrusiveness in the overall meta-analysis, but this association was large in nonclinical samples and nonsignificant in clinical samples. The large associations between schizoid personality disorder and coldness and social avoidance in the overall meta-analyses were evident in nonclinical samples, and were significantly smaller, though still moderate, in clinical samples. The large association between schizotypal personality disorder and coldness in the overall meta-analysis was evident in nonclinical samples, and was significantly smaller, though still moderate, in clinical samples. The moderate-to-large associations between antisocial personality disorder and vindictiveness and intrusiveness in the overall meta-analyses were evident in nonclinical samples, but were significantly smaller, though still moderate, for vindictiveness and nonsignificant for intrusiveness, in clinical samples; the nonsignificant association with nonassertiveness was significant, negative, and moderate in nonclinical samples. The large associations between histrionic, narcissistic, dependent personality disorders and intrusiveness in the overall meta-analyses were evident in nonclinical samples, and were significantly smaller, though still moderate to large for histrionic and dependent personality disorders, and modest for narcissistic personality disorder, in clinical samples. Obsessive– compulsive personality disorder showed a nonsignificant association with intrusiveness in the overall meta-analysis, but this association was significant and modest in nonclinical samples.

Several personality disorders showed larger associations with dysfunctional interpersonal traits when assessed in clinical samples. The nonsignificant associations between schizoid and schizotypal personality disorders and exploitability in the overall meta-analyses were significant and modest to moderate in clinical samples. The nonsignificant associations between borderline personality disorder and nonassertiveness and overnurturance, and the modest association with exploitability, in the overall meta-analyses were significant and moderate in clinical samples. The moderate associations between dependent personality disorder and social avoidance and nonassertiveness in the overall meta-analyses were evident in clinical samples, but were significantly smaller, though still modest to moderate, in nonclinical samples.

Taken together, moderator analyses comparing associations between personality disorders and interpersonal style as a function of whether they are assessed in nonclinical versus clinical samples indicated that associations with more dominant and cold traits were generally stronger when assessed in nonclinical samples, whereas associations with more submissive and warm traits were generally stronger when assessed in clinical samples.

Moderators of associations between personality disorders and interpersonal functioning in specific relationship domains—An overview of the number of studies for each moderator for each meta-analysis of associations between personality disorders and interpersonal functioning in specific relationship domains, and average effect sizes, corrected for sampling error and measurement unreliability, for studies stratified by each moderator, is presented in Table 8.

Method used to assess personality disorder—A comparable number of studies examined associations between personality disorders and interpersonal functioning in specific relationship domains using self-reports (mean $k = 5$, $SD = 4$; mean $N = 1{,}798$, $SD = 2{,}360$) and other methods (mean $k = 4$, $SD = 4$; mean $N = 1{,}002$, $SD = 1{,}469$) for assessing personality disorders. One notable exception was that studies examining associations between antisocial personality disorder and functioning in specific relationship domains more commonly used other methods ($k = 13$, $SD = 5$; $N = 4{,}769$, $SD = 1{,}992$) than self-reports ($k = 5$, $SD = 4$; $N = 1{,}880$, $SD = 1{,}558$) of personality disorder assessment.

Histrionic personality disorder showed a nonsignificant association with functioning in the romantic domain in the overall meta-analysis, but this association was significant and modest when assessed using self-reports. The modest association between antisocial personality disorder and impairment in the family domain in the overall meta-analysis was moderate when assessed using self-reports, but was significantly smaller, though still modest, when using other methods.

Method used to assess interpersonal functioning—A comparable number of studies examined associations between personality disorders and interpersonal functioning in specific relationship domains using self-reports (mean $k = 5$, $SD = 5$; mean $N = 1{,}666$, $SD = 2{,}311$) and other methods (mean $k = 5$, $SD = 4$; mean $N = 1{,}163$, $SD = 1{,}712$) of assessing interpersonal functioning, with the exception that studies examining associations between antisocial personality disorder and functioning in specific relationship domains more commonly used other methods ($k = 14$, $SD = 4$; $N = 5{,}324$, $SD = 2{,}418$) than self-reports ($k = 9$, $SD = 5$; $N = 3{,}640$, $SD = 1{,}801$) for assessing relationship functioning, and that studies examining associations between personality disorders and functioning in the parent– child relationship more commonly used other methods (mean $k = 6$, $SD = 3$; mean $N = 788$, $SD = 560$) than self-reports (mean $k = 1$, $SD = 1$; mean $N = 132$, $SD = 347$) for assessing relationship functioning.

The nonsignificant associations between paranoid and schizoid personality disorders and functioning in the romantic domain in the overall meta-analysis were significant and modest when assessed using self-reports. The nonsignificant and negative associations between schizotypal, histrionic, avoidant, and dependent personality disorders and functioning in the romantic domain in the overall meta-analyses were significant, positive, and modest when assessed using self-reports, and significant, negative, and modest to moderate when using other methods. Antisocial personality disorder showed moderate impairment in the peer domain in the overall meta-analysis, but this association was only evident when assessed using other reports.

Age of sample—Most studies examined associations between personality disorders and interpersonal functioning in specific relationship domains in adult samples (mean $k = 7$, $SD = 6$; mean $N = 1{,}882$, $SD = 2{,}325$) compared with child/adolescent samples (mean $k = 1$, $SD = 3$; mean $N = 648$, $SD = 1{,}897$). The one exception was that studies examining associations between antisocial personality disorder and functioning in specific relationship domains were conducted in both adult (mean $k = 11$, $SD = 8$; mean $N = 3{,}215$, $SD = 1{,}965$) and child/adolescent (mean $k = 8$, $SD = 6$; mean $N = 3{,}618$, $SD = 3{,}415$) samples. As such, few

moderator analyses for age of sample were conducted, and only one was notable: the moderate association between antisocial personality disorder and impairment in the peer domain was only evident when assessed among children/adolescents.

Sex of sample—A comparable number of studies examined associations between personality disorders and functioning in specific relationship domains in predominately female (mean $k = 6$, $SD = 5$; mean $N = 1,456$, $SD = 2,189$) and predominately male (mean $k = 4$, $SD = 5$; mean $N = 1,495$, $SD = 2,159$) samples. One notable exception was that studies examining associations between borderline personality disorder and functioning in specific relationship domains were more often conducted in predominately female ($k = 14$, $SD = 8$; $N = 4,308$, $SD = 5,651$) than male ($k = 5$, $SD = 6$; $N = 2,947$, $SD = 3,545$) samples.

The nonsignificant associations between paranoid and dependent personality disorders and functioning in the romantic domain in the overall meta-analyses were significant and modest to moderate among females. The moderate association between antisocial personality disorder and impairment in the peer domain was large among females and significantly smaller, though modest, among males.

Type of sample—A comparable number of studies examined associations between personality disorders and functioning in specific relationship domains in nonclinical samples (mean $k = 5$, $SD = 4$; mean $N = 1,787$, $SD = 2,425$) compared with other samples (mean $k = 3$, $SD = 3$; mean $N = 710$, $SD = 871$). One notable exception was that studies examining associations between antisocial personality disorder and functioning in specific relationship domains were more often conducted in nonclinical ($k = 13$, $SD = 4$; $N = 5,666$, $SD = 2,535$) than other ($k = 5$, $SD = 3$; $N = 1,045$, $SD = 791$) samples.

The nonsignificant association between paranoid personality disorder and functioning in the romantic domain in the overall meta-analysis was significant and modest in nonclinical samples. The nonsignificant associations between schizoid, histrionic, avoidant, and dependent personality disorders and functioning in the romantic domain in the overall meta-analyses were significant, negative, and modest to moderate when assessed in other samples, and significant, positive, and modest in nonclinical samples. The nonsignificant association between obsessive– compulsive personality disorder and functioning in the romantic domain in the overall meta-analysis was significant, negative, and modest in other samples. The moderate association between antisocial personality disorder and impairment in the peer domain was moderate in nonclinical samples, and significantly smaller, though modest, in other samples.

Publication Bias

We examined potential publication bias attributable to the underrepresentation of studies with small samples and consequently lower power to detect significant effects by conducting cumulative meta-analyses for published studies in each meta-analysis of associations between personality disorders and interpersonal functioning. In cumulative meta-analyses, studies are iteratively added to the overall meta-analysis based on decreasing sample sizes; increasing mean effect sizes suggests the possibility of publication bias in that studies with smaller samples that are published will tend to report larger effects (relative to studies with

smaller samples that go unpublished, which will tend to report smaller effects). It is important to note when interpreting the results of these analyses that the number of available studies was generally relatively small, particularly for studies of associations with functioning in specific relationship domains.

There was some evidence of publication bias for associations between schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, and dependent personality disorders and interpersonal style. Mean effect sizes for published studies increased with decreasing study sample sizes for associations between schizoid, schizotypal, and antisocial personality disorder and exploitability; borderline personality disorder and social avoidance, nonassertiveness, exploitability, and overnurturance; histrionic personality disorder and overnurturance; narcissistic personality disorder and social avoidance, nonassertiveness, exploitability, and overnurturance; and dependent personality disorder and social avoidance and nonassertiveness. These results suggest that unpublished studies exist that report smaller effects for these personality disorders. Interestingly, because the associations found in the present meta-analysis for schizoid, schizotypal, and antisocial personality disorders and exploitability, and for narcissistic personality disorder and social avoidance, nonassertiveness, exploitability, and overnurturance, are trivial or negative (and nonsignificant), the results of the cumulative meta-analysis suggest that these personality disorders may actually show even stronger negative associations with (i.e., a more marked lack of) submissive interpersonal traits than is reported in the published literature. By contrast, the results of the cumulative meta-analyses suggest that the modest associations between borderline, histrionic, and dependent personality disorders and submissive interpersonal traits may actually be smaller than reported in the published literature. There was no evidence of publication bias for associations between personality disorders and interpersonal style for paranoid, avoidant, or obsessive– compulsive personality disorders; the mean effect sizes were unrelated to study sample sizes in the cumulative meta-analyses.

There was some evidence of publication bias for associations between paranoid, schizoid, schizotypal, antisocial, borderline, narcissistic, and avoidant personality disorders and interpersonal functioning in specific relationship domains. The results of the cumulative meta-analyses suggest that the moderate association between borderline personality disorder and functioning in the peer relationship, the modest-to-moderate associations between paranoid and schizotypal personality disorders and functioning in the family domain, and the modest association between avoidant personality disorder and functioning in the parent–child domain may actually be smaller than reported in the published literature; the already small associations between paranoid, schizoid, antisocial, and narcissistic personality disorders and functioning in the romantic domain may actually be even smaller. There was no evidence of publication bias for associations between personality disorders and interpersonal functioning in specific relationship domains for histrionic, dependent, or obsessive– compulsive personality disorders; the mean effect sizes were unrelated to study sample sizes in the cumulative meta-analyses.

Discussion

Although the central role of interpersonal dysfunction for personality disorders has been emphasized since their initial inclusion in the psychiatric diagnostic system, the present meta-analytic review is the first quantitative synthesis of empirical research examining associations between personality disorders and interpersonal functioning. This meta-analytic review offers an important test of the construct and discriminant validity of the personality disorders as they are conceptualized in both the current and proposed diagnostic classification systems. We conducted a comprehensive literature search to obtain relevant published and unpublished data—spanning 20 years of research—on personality disorders and interpersonal functioning, that yielded a total of 127 studies was included and unpublished data sets. Analyses comprised 120 separate individual meta-analyses examining associations between each of the 10 personality disorders included in the current *DSM* diagnostic system (*DSM–IV* and *DSM–5* Section II) and indicators of interpersonal style and functioning in specific interpersonal relationship domains. The number of studies included in each meta-analysis ranged from 4 to 33, and the total sample size for each meta-analysis ranged from 462 to 13,290 participants. Overall, the findings provide evidence that personality disorders and interpersonal functioning have rich and nuanced connections that vary across the particular personality disorder and the domain of interpersonal functioning in question.

Personality Disorders Show Interpersonal Dysfunction

Personality disorders are associated with dysfunctional interpersonal styles— The results of the present meta-analytic review provide evidence of the construct and discriminant validity of the personality disorder constructs included in the current *DSM* system (with the potential exception of obsessive– compulsive personality disorder, discussed in greater detail below) in showing associations with dysfunctional interpersonal traits, as well as differentiation (amplitude) and discriminable predominant interpersonal styles (angular displacement). The results also lend support to the proposed conceptualization of personality pathology in *DSM–5* Section III as constituted of core disturbances in self and interpersonal functioning. Finally, the results speak to the construct validity of the interpersonal circumplex in showing the characteristic sinusoidal pattern—significant correlations for each personality disorder were typically adjacent to one another.

Paranoid, schizoid, and schizotypal personality disorders, historically classified as Cluster A (odd-eccentric) personality disorders, and, interestingly, avoidant personality disorder, historically classified as a Cluster C (anxious-fearful) personality disorder, all showed large associations with cold interpersonal traits, though associations for dominant and submissive interpersonal traits varied, as reflected in different angular displacements for each of these personality disorders, most notably for avoidant personality disorder. Antisocial, narcissistic, and histrionic personality disorders, historically classified as Cluster B (dramatic-emotional-erratic) personality disorders, all showed large associations with dominant interpersonal traits, though antisocial and narcissistic personality disorders also showed large associations with coldness, whereas histrionic personality disorder also showed large associations with warmth, as reflected in angular displacements that were comparable for antisocial and

narcissistic personality disorders, but that differed considerably from histrionic personality disorder. Notably, borderline and dependent personality disorders, historically classified as Cluster B and Cluster C personality disorders, respectively, both showed generally large associations with interpersonal traits along both the dominant versus submissive and warm versus cold dimensions. Obsessive– compulsive personality disorder, historically classified as a Cluster C personality disorder, showed only modest associations with dominant-cold interpersonal traits. Interestingly, each of the personality disorders showed a significant association with vindictiveness, speaking to commonality across the personality disorders in a tendency toward distrust and suspicion of others and an inability to care about the needs of others. Finally, the results suggest a pattern of associations that are inconsistent with the traditional personality disorder clusters, and support the discarding of the clustering system in *DSM–5* Section II.

The structural summary method provided complementary evidence of the differentiation and discriminability of the personality disorders. Each personality disorder showed good fit with the expected sinusoidal pattern, suggesting high interpersonal prototypicality, with the notable exceptions of dependent and obsessive–compulsive personality disorders—interestingly, dependent and obsessive–compulsive personality disorders showed relatively linear patterns of associations, but differed in their elevation and amplitude, suggesting different reasons for their lack of interpersonal prototypicality. Consistent with their characteristic interpersonal dysfunction, most of the personality disorders, including paranoid, schizotypal, borderline, avoidant, and dependent personality disorders, showed moderate elevation, indicating moderate interpersonal distress; by contrast, and also consistent with less characteristic interpersonal dysfunction, histrionic and obsessive–compulsive personality disorders showed only modest elevation, whereas schizoid and antisocial personality disorders showed only trivial elevation, speaking to the ego syntonic nature of these personality disorders. Moreover, most of the personality disorders, including paranoid, schizoid, antisocial, histrionic, narcissistic, and avoidant personality disorders, showed moderate amplitudes, indicating moderate differentiation in their interpersonal style; schizotypal and borderline personality disorders showed modest amplitudes, and dependent and obsessive-compulsive personality disorders showed trivial amplitudes, suggesting little differentiation in interpersonal style. Finally, differences in the angular displacements for each personality disorder suggested varied predominant interpersonal styles that were consistent with the overall results of the meta-analysis and the characteristic symptom pattern and dysfunction evidenced by each personality disorder.

It is important to note that, although the interpersonal circumplex is theoretically defined by the two orthogonal dimensions of agency and communion, structural analyses of interpersonal circumplex measures tapping more maladaptive and problematic aspects of interpersonal style, namely the IIP-C, consistently show a general factor underlying the eight octant scales on which all items load positively and that accounts for the high positive intercorrelations among the scales (see Alden et al., 1990; Horowitz et al., 1988; Horowitz, Alden, Wiggins, & Pincus, 2000; Soldz, Budman, Demby, & Merry, 1993; Tracey et al., 1996; Vittengl et al., 2003; Wilson et al., 2013). This general factor has been variously labeled “complaint,” “interpersonal distress,” and “general distress.” Because meta-analysis is necessarily limited to the studies available in the existing literature, which

overwhelmingly report associations between personality disorders and each of the interpersonal traits, rather than for the factors underlying the interpersonal circumplex measure, the present meta-analysis cannot speak directly to the extent to which personality disorder-interpersonal style associations reflect shared distress, rather than substantive interpersonal associations. However, the results of the structural summary method, which indicate modest-to-moderate elevation for most (but not all) of the personality disorders, suggest that the personality disorder-interpersonal style associations found in the meta-analyses are influenced at least somewhat by this general factor. To determine whether associations differed for interpersonal traits measured using the IIP-C (*k*s ranged from 6 to 13) relative to other interpersonal circumplex measures without this general factor (CIRCLE: Blackburn & Renwick, 1996; CSIV: Locke, 2000; IAS, IAS-R: Wiggins et al., 1988; PROQ2: Birtchnell & Evans, 2004; Birtchnell & Shine, 2000; *k*s ranged from 3 to 8), we conducted supplementary moderator analyses. As expected, associations were generally larger in magnitude for studies that used the IIP-C, though only associations for domineeringness, vindictiveness, and intrusiveness assessed using the IIP-C consistently fell outside of the 80% credibility interval and 95% confidence interval for associations assessed using non-IIP-C measures, suggesting that differences were not pervasive across personality disorder-interpersonal style associations (full results available from the first author upon request).

Impairment in specific relationship domains is not pervasive—The meta-analytic results for interpersonal style are extended by our examination of interpersonal functioning in specific relationship domains. Although results provide further evidence of the construct validity of each of the personality disorder constructs included in the current *DSM* system (with the potential exception of obsessive– compulsive personality disorder, discussed in greater detail below) in showing impaired relationship functioning, a lack of evidence of consistent dysfunction across relationship domains for each personality disorder (with the potential exception of borderline personality disorder, discussed in greater detail below) contradicts both current and proposed conceptualizations of personality pathology. That is, the dysfunctional interpersonal styles evidenced by each of the personality disorders were manifested in some amount of impaired relationship functioning, but the specific relationship domains affected and the strength of the associations varied considerably across the different personality disorders. This is a notable finding in that personality disorders are presumed to show dysfunction that is pervasive across interpersonal situations and relationships (see Hopwood, Wright, et al., 2013)—the *DSM–IV* and main manual of the *DSM–5*, as well as *DSM–5* Section III, explicitly include this as a diagnostic criterion (*DSM–IV*/*DSM–5* Section II: Criterion B, “The enduring pattern is inflexible and pervasive across a broad range of personal and social situations,” APA, 2013, p. 646; *DSM–5* Section III: Criterion C, “The impairments in personality functioning and the individual’s personality trait expression are relatively inflexible and pervasive across a broad range of personal and social situations,” APA, 2013, p. 761). This criterion, however, has rarely been examined empirically—to demonstrate pervasive effects across social situations, examination of functioning within multiple relationship domains among the same individuals is needed, but most existing studies have focused on functioning within only a

single relationship domain, or functioning across relationship domains but among different individuals.

Perhaps even more striking than differences across personality disorders in the type and magnitude of interpersonal dysfunction exhibited were the differences observed across relationship domains. When considering the average effect sizes for different relationship domains, we found consistent evidence for greater impairment in family and peer relationships relative to parent– child and romantic relationships. Relatively large effects for the family domain are consistent with etiological models of personality pathology that emphasize the causal role of family-of-origin relationships in the development of personality disorders (e.g., Fruzzetti, Shenk, & Hoffman, 2005; Repetti, Taylor, & Seeman, 2002; Zanarini et al., 1997). However, the large effects found for peer relationships represents a novel finding of the present meta-analytic review that warrants future research. Not surprisingly, the quality of functioning in the peer domain has been frequently examined in conduct disorder, among samples of children and adolescents. However, the present results suggest that this domain may also be affected in adulthood. The surprising lack of significant effects for the romantic domain is yet another novel finding. Romantic relationships have featured prominently in many investigations of the role of personality pathology in interpersonal functioning (e.g., Chen et al., 2004; Daley, Burge, & Hammen, 2000; Selby, Braithwaite, Joiner, & Fincham, 2008), but the results of the present meta-analysis indicate at most modest effects for this domain; there was no personality disorder for which effects for functioning in the romantic domain were larger than for any other specific relationship domain. These results speak to the importance of understanding differences in the mechanisms and processes that vary across relationship types and how they may be differentially affected by personality pathology. Thus, it will be important in future work not only to expand research focus to multiple relationship domains, but also to examine the nature of associations between personality pathology and interpersonal functioning to distinguish between processes that are outcomes of personality pathology and/or potential causes of it.

Although these findings suggest a lack of pervasiveness of dysfunction across relationship domains, several caveats merit note. First, there is relatively little research exploring associations between personality disorders and functioning in specific relationship domains (with some exceptions for antisocial and borderline personality disorders), and, consequently, it is possible that the inclusion of additional studies might yield larger, more pervasive effects across relationship domains. For example, we were able to examine functioning in the peer domain only for schizotypal, antisocial, borderline, and avoidant personality disorders—although associations were moderate to large for each of these disorders, and larger in magnitude than for associations with other relationship domains, because we were unable to examine effects for the other personality disorders, it remains unclear whether effects on functioning in the peer domain are specific to these personality disorders, or whether the peer domain is particularly affected across all personality disorders. Moreover, to fully test the pervasiveness of effects across interpersonal situations and relationships, within-individual studies of functioning in various domains are needed—yet, the majority of the studies included in the present meta-analytic review was focused on functioning in a single domain.

Second, effects for functioning in specific relationship domains were necessarily aggregated in the meta-analyses across related, but perhaps distinct, constructs. Although aggregating across the empirical research on different aspects (e.g., satisfaction, attachment) and processes (e.g., communication, conflict resolution) can give an index of global functioning within a relationship domain, such an approach cannot speak to the specific aspects and processes that typify relationships for each personality disorder. Thus, it may be that personality disorders show pervasive impairment across relationship domains, but only in select aspects or processes. Finally, the lack of empirical research for certain domains may itself reflect personality disorder-related dysfunction. The studies included in the present meta-analytic review focused overwhelmingly on functioning within existing relationships. As such, results speak to the difficulties individuals with personality disorders have once relationships have been formed, but are less informative as to difficulties in relationship formation itself. Thus, the large effects found for the family relationship domain may reflect individuals with personality disorders typically having contact with their family of origin, even if they have not established relationships in other domains; the surprising lack of impairment found for the romantic relationship domain may actually reflect difficulty in establishing and maintaining romantic relationships, which would itself speak to romantic dysfunction.

Methodological and sample characteristics moderate associations—The overall meta-analytic results must be interpreted in conjunction with the results of moderator analyses.

Interpersonal style—Moderator analyses indicated that effect sizes differed depending on the method used to assess personality disorders and interpersonal functioning, and as a function of participant sex and the type of sample. Although personality disorders were generally associated with dysfunctional interpersonal styles, there was also evidence that specific associations between personality disorders and more dominant/cold interpersonal traits were stronger when methods other than self-report were used to assess personality disorders and interpersonal style, and among predominantly female and nonclinical samples; by contrast, specific associations with more submissive/warm interpersonal traits were stronger when self-reports were used to assess personality disorders and interpersonal style, and among predominantly male and clinical samples.

Evidence of moderation by assessment method is consistent with a self-perception or reporting bias in that effects for dominant/ cold interpersonal traits were generally stronger when personality disorders and interpersonal style were assessed using methods other than self-report, whereas effects for submissive/ warm interpersonal traits were generally stronger when assessed using self-reports. These results are consistent with a lack of insight—individuals with personality pathology appear to see themselves as too interpersonally passive and attached, whereas others tend to see them as too interpersonally aggressive and detached—and/or a bias toward reporting interpersonal submissiveness and warmth as opposed to dominance and coldness. Results highlight the limitations of relying solely on self-reports in research and clinical settings, and speak to the importance of using additional assessment methods, including structured interviews, informant reports, and observational

methods, to obtain complementary, and perhaps more accurate and objective, indicators of personality pathology and interpersonal functioning (see Tackett, Herzhoff, Reardon, Smack, & Kushner, 2013; Trull et al., 2013). Importantly, given that most studies included in the meta-analytic review used self-reports of personality pathology and interpersonal functioning, these results suggest that our understanding of the association between personality disorders and interpersonal functioning may be skewed by an overreliance on self-report measures in the existing literature—though whether self-reports are biased or more accurate relative to other assessment methods, and/or offer a complementary perspective in a multimethod assessment remains an fruitful area of empirical research.

Although limited by the relatively few existing empirical studies that have been conducted among predominantly male samples and were thus included in the moderator analyses, evidence of moderation by sample sex indicates differential associations between personality pathology and interpersonal functioning among males and females. Effects for more dominant/cold interpersonal traits were generally stronger when assessed among predominantly female samples, whereas effects for more submissive/warm interpersonal traits were generally stronger when assessed among predominantly male samples. These results are particularly interesting when considered in the context of the social role theory framework of sex differences (e.g., Diekman & Goodfriend, 2006; Eagly & Karau, 2002), which posits common descriptive (what men and women are typically like) and prescriptive (what men and women are ideally or should be like) gender role expectations. That the present meta-analysis found that dysfunction associated with personality pathology is particularly marked in domains that run counter to traditional gender norms among both males and females is consistent with evidence that agency and communion are differently valued among men and women, and that gender incongruent behavior is harshly penalized (e.g., Rudman & Fairchild, 2004). These results warrant further exploration in future research, and, given that most of the studies included in the meta-analysis focused on predominantly female samples, further highlights the importance of increasing the inclusion of males in research on personality disorders and interpersonal functioning.

Although personality disorders were generally associated with dysfunctional interpersonal styles, whether assessed in clinical or nonclinical samples, there was also some evidence of moderation by type of sample—effects for more dominant/cold interpersonal traits were stronger when assessed in nonclinical samples, whereas effects for more submissive/warm interpersonal traits were stronger when assessed in clinical samples. This is an interesting finding in that clinical samples were typically drawn from inpatient and outpatient psychiatric clinics, juvenile detention centers, and domestic violence treatment centers, and as such were likely to show more severe personality pathology than nonclinical samples, which typically comprised university students and individuals from the general population. Results suggest that, among less severe samples, personality pathology is associated with more agentic and less communal interpersonal behaviors, but among more severe samples, with less agentic and more communal interpersonal behaviors. More research is needed to shed light on the mechanisms underlying these differences, particularly given that most of the studies included in the present meta-analysis focused on nonclinical samples. For example, it may be that individuals in clinical settings with more severe personality pathology take on a passive “patient” role, and/or that greater interpersonal dominance and

coldness is adaptive among the individuals with less severe personality pathology found in nonclinical settings.

Specific relationship domains—Although there was evidence of heterogeneity in effect sizes, there were too few studies of associations between personality disorders and functioning in specific relationship domains to conduct comprehensive moderator analyses. We were able to conduct moderator analyses between antisocial and borderline personality disorders and functioning in the romantic, parent– child, family, and peer domains, but, for the other personality disorders, were only able to conduct analyses for the romantic domain. Results of the moderators examined provided some evidence that associations between personality disorders and functioning in specific relationship domains differed depending on the method used to assess personality disorders and interpersonal functioning, and as a function of participant sex and age, and the type of sample. Effects for impairment in the romantic domain were generally stronger, across all personality disorders, when assessed using self-reports of interpersonal functioning, among predominantly female samples, and among nonclinical samples. Evidence of stronger associations with impairment in the romantic domain when assessed using self-reports is particularly interesting when taken into consideration with results for interpersonal style, which suggest a lack of insight and/or a positive reporting bias—it is possible that individuals with personality disorders have a skewed perception of their interpersonal behaviors, but that they are more sensitive to dysfunction as it is experienced in the romantic relationship, and/or it may be that these individuals find their romantic relationships dissatisfying, even when they may not be considered dysfunctional using other perspectives. For antisocial personality disorder, effects for impairment in the peer domain were stronger when assessed using other reports of interpersonal functioning and among child/adolescent samples. It may be that the lack of empathy that characterizes antisocial personality disorder interferes with accurate perceptions of functioning with peers. These results may also reflect environmental selection, with individuals with antisocial personality disorder seeking out like-minded peer groups and/or becoming increasingly isolated from peers as they age (e.g., Monahan, Steinberg, & Cauffman, 2009). Notably, because peer relationships are the primary extrafamilial relationship domain for children and adolescents, and because, relative to adults, youth have limited freedom to choose their larger social environments (e.g., their classmates), research on peer relationships among younger samples with personality pathology will prove particularly informative as to interpersonal functioning in nonself-selected relationship domains.

The results of the present meta-analysis highlight lacuna in the existing empirical research on personality disorders and functioning in specific relationship domains that limit firm conclusions. Although additional research is needed for all personality disorders and all relationship domains, results speak to the particular importance for future research of considering personality disorders other than antisocial and borderline personality disorders, and relationship domains other than the romantic domain (i.e., the parent– child, family, and peer domains).

Implications for Personality Disorder Conceptualization and the *DSM*

The present meta-analytic review provides evidence supporting the proposed *DSM–5* Section III conceptualization of disturbances in self and interpersonal functioning as constituting the core of personality pathology—that is, impairments in self-concept, agency, and the ability "to get ahead," as well as interpersonal relatedness, communion, and the ability "to get along" (see Hopwood, Wright, et al., 2013). Moreover, there is remarkable convergence between the predominant interpersonal style shown by each personality disorder in the present meta-analytic review and its *DSM–5* Section III diagnostic criteria. For example, antisocial personality disorder showed strong associations with dominance and coldness (moderate-to-large effects for domineeringness, vindictiveness, coldness, intrusiveness) and a marked lack of associations with nondominant warmth and submissiveness (trivial and negative effects for social avoidance, nonassertiveness, exploitability, overnurturance) in the present meta-analytic review, which are clearly evident in its Section III criterion of characteristic difficulties in identity (egocentrism and self-esteem derived from personal gain, power, pleasure), self-direction (goal setting driven by personal gratification and an absence of prosocial internal standards), empathy (lack of concern for others' feelings, needs, or suffering, and a lack of remorse after hurting or mistreating others), and intimacy (incapacity for mutually intimate relationships, exploitation of others, dominance or intimidation of others).

In demonstrating associations with interpersonal dysfunction, the results of the present meta-analytic review speak to the construct validity of each of the personality disorder constructs currently included in *DSM–5* Section II (and in *DSM–IV*), including those not retained as specific personality disorders in Section III (i.e., paranoid, schizoid, histrionic, dependent personality disorders). However, it is important that these results not be considered as reifying the current personality disorder diagnostic criteria sets. There is ample evidence that the personality disorders as currently conceptualized and defined in the diagnostic nomenclature are imperfect and should continue to be subject to careful and critical empirical research (e.g., Clark, 2007; Kotov et al., 2011; Krueger & Eaton, 2010; Krueger & Markon, 2006; Krueger et al., 2007; Trull & Durrett, 2005; Spitzer & Wakefield, 1999; Widiger, 2001; Widiger & Samuel, 2005; Widiger & Trull, 2007; Widiger et al., 2005). However, there is also ample evidence, from the present meta-analytic review, as well as other empirical research, that the current personality disorders show concurrent and predictive validity (e.g., Cohen et al., 2005; Fergusson et al., 2005; Gunderson et al., 2011; Skodol et al., 2002; Zanarini et al., 2010). Rather than arguing for the retention of the 10 personality disorders exactly as conceptualized in *DSM–IV* and *DSM–5* Section II, the results speak to the need for empirical research that refines the diagnoses and/or their conceptualization. The proposed *DSM–5* Section III criteria are an important step in that direction in that they highlight disturbances in self and interpersonal functioning for each personality disorder that are remarkably well aligned with the interpersonal circumplex model.

Notably, results of the present meta-analytic review are necessarily limited to the existing empirical literature included in the review—our inclusion of the available published and unpublished empirical research conducted over the past 20 years using the current

psychiatric diagnostic system (*DSM–IV*, reprinted in *DSM–5* Section II) is a considerable strength, but great knowledge remains to be gained from empirical research on associations between the proposed *DSM–5* Section III conceptualization of personality pathology and interpersonal functioning, which is as yet in its infancy. It may be that the magnitude of such associations are stronger than those found in the present meta-analytic review for *DSM–IV* and *DSM–5* Section II conceptualizations of personality disorders and/or it may be that using the broad personality trait domains and specific facets yield greater discriminant validity for different personality disorder constructs. The emerging research on *DSM–5* Section III pathological personality traits does provide some evidence of their construct and discriminant validity, as indexed by the expected pattern of associations with interpersonal traits, differentiation in peak interpersonal traits, and different predominant interpersonal themes (e.g., Williams & Simms, 2016; Williams, Thomas, Donnellan, & Hopwood, 2014; Wright et al., 2012). Taken together, results of the present meta-analytic review provide evidence of the construct and discriminant validity for the personality disorders as they are currently conceptualized, but also suggest that the field stands to gain considerably from future empirical research on the proposed model of personality pathology, which emphasizes core disturbances in self and interpersonal functioning.

One personality disorder construct that warrants further discussion is obsessive– compulsive personality disorder, which showed little evidence of impairment in the interpersonal domains examined in the meta-analytic review—although it was associated with cold interpersonal traits, these associations were only modest and considerably smaller in magnitude relative to those for other personality disorders. Moreover, obsessive– compulsive personality disorder also did not show impaired functioning in any of the specific relationship domains assessed. These findings are consistent with evidence that obsessive–compulsive personality disorder may not be as severe as other personality disorders in terms of interpersonal, occupational, recreational, and general functioning (e.g., Skodol et al., 2002, 2005), though individuals with obsessive– compulsive personality disorder have been found to seek out treatment at greater rates than those with other personality disorders (Bender et al., 2001) and to incur greater medical costs (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008). That obsessive-personality disorder was generally not associated with interpersonal impairment in the present meta-analysis calls into question its retention in *DSM–5* Section II/III and/or prompts revision of *DSM–5* Section III in its description of the typical feature of obsessive– compulsive personality disorder as difficulty in establishing and sustaining close relationships, in addition to rigid perfectionism, inflexibility, and restricted emotional expression. Notably, obsessive– compulsive personality disorder has been found to be associated with lost productivity (absence from work, reduced efficiency at work; Soeteman et al., 2008), though it has also been found to be associated with increased social status and wealth (Ullrich, Farrington, & Coid, 2007). Thus, further work is needed to clarify the construct of and functioning for obsessive– compulsive personality disorder—it may be that the domains primarily affected are noninterpersonal and/or that effects on interpersonal functioning are a consequence of impairment in these other domains, rather than arising from the disorder itself.

Borderline personality disorder also warrants further discussion. In part due to its large costs at both the societal and individual level (Frankenburg & Zanarini, 2004; van Asselt, Dirksen,

Arntz, & Severens, 2007), considerable empirical research and theory has focused on borderline personality disorder. Nonetheless, important aspects of this personality disorder remain poorly understood, reflecting heterogeneity in symptom profiles and characteristic instability and inconsistencies in affect, behavior, and reporting (e.g., Hopwood & Morey, 2007; Wright et al., 2013). Notably, previous attempts to locate borderline personality disorder in the interpersonal circumplex space have yielded quite inconsistent results, with some locating it in the dominant-warm quadrant, others in the submissive-cold quadrant, others in the submissive-warm quadrant, and yet others failing to locate it in the circumplex space at all (see Hopwood & Morey, 2007). The results of the structural summary method used in the present meta-analytic review, which used aggregated effect sizes across multiple studies, located borderline personality disorder in the dominant-cold quadrant, which is consistent with results of another recent study using the structural summary method (Zimmermann & Wright, 2017). However, although borderline personality disorder showed reasonably good fit to the predicted sinusoidal pattern, it showed only modest amplitude, or peak differentiation, consistent with its relatively high associations with most interpersonal traits. These results are consistent with evidence of instability over time in the specific interpersonal problems manifested by individuals with borderline personality disorder (Wright et al., 2013) and suggest that borderline personality disorder is associated with general interpersonal dysfunction, a supposition borne out by its associations in the present meta-analytic review with impaired functioning in the parent– child, family, peer, and romantic domains.

One particularly noteworthy aspect of *DSM–5* Section III is that, unlike in previous editions of the *DSM* or *DSM–5* Section II, in which the severity of interpersonal impairment is conflated with the particular pattern of interpersonal dysfunction, it allows for independent ratings of personality functioning (i.e., the individual's current overall level of impairment) and personality traits (i.e., the individual's tendency to feel, perceive, behave, and think in relatively consistent ways across time and situations). The Personality Inventory for *DSM–5* (PID-5; APA, 2016; Krueger, Derringer, Markon, Watson, & Skodol, 2012) was designed to measure the broad trait domains and specific facets delineated in *DSM–5* Section III. Given the major role of interpersonal functioning for personality disorders evidenced in the present meta-analytic review, assessment of interpersonal functioning— using a circumplex measure of interpersonal functioning, such as the IIP-C—in addition to personality disorder symptoms and personality traits, will prove informative as an indicator of level of general personality pathology and the nature of this pathology.

It is important to emphasize that the studies included in the present meta-analytic review, and, hence, the results reported here, are cross-sectional. Although there are important exceptions—the Longitudinal Study of Personality Disorders (Lenzenweger, 1999; Lenzenweger, Loranger, Korfine, & Neff, 1997), the McLean Study of Adult Development (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2005), the Collaborative Longitudinal Personality Disorders Study (Gunderson et al., 2000; Skodol et al., 2005), and the Children in the Community study (Cohen et al., 2005)—most of the existing literature on personality disorders is cross-sectional. Thus, the present results cannot speak to the causal relationships between personality disorders and interpersonal functioning. It may be that the characteristic pathology that underlies each of the personality disorders leads to disturbed affect and

behavior in interpersonal interactions, as well as dysfunctional attitudes toward, behaviors in, cognitions about, and goals for relationships; it may be that interpersonal dysfunction, defined by problematic experiences of oneself and others, leads to the characteristic symptomatology seen in the personality disorders; and/or it may be that a third process (or multiple processes) underlies both personality pathology and interpersonal dysfunction, such as deviations in the neural systems underlying emotional and reward processing, and executive functioning and inhibitory control. Associations between personality pathology and interpersonal functioning are likely dynamic, with bidirectional, reciprocal associations developing over time. Importantly, reliance of the empirical research on cross-sectional study designs perpetuates a tautological understanding of the association between personality disorders and interpersonal functioning— given that personality disorders are defined by impaired interpersonal functioning, it is not surprising that they manifest dysfunction in interpersonal domains. Thus, future research that uses other, causally informative study designs, including prospective, longitudinal studies of personality disorders and interpersonal functioning over time, is critical for furthering understanding of the nature of their associations, and the extent to which interpersonal dysfunction is related to the etiology and course of personality pathology.

Finally, although the present findings demonstrate meaningful associations between personality disorders and interpersonal dysfunction, they cannot speak directly to the mechanisms underlying these associations. One intriguing possibility is that the impairment seen for personality disorders is largely attributable to the effects of other comorbid psychiatric disorders (e.g., depressive, anxiety, substance use disorders; Lenzenweger et al., 2007)—that is, personality disorders contribute to the development, course, and severity of comorbid psychopathology symptoms, which themselves lead to interpersonal dysfunction. We could not meaningfully examine potential mechanisms for associations between personality disorders and interpersonal functioning in the present meta-analytic review. For example, comprehensive information regarding comorbidity with other psychiatric disorders was rarely assessed or provided in the included studies. This will continue to be an important area of empirical research, especially as the body of literature on concurrent and prospective associations between the proposed personality disorders and other forms of psychopathology and psychosocial functioning develops, in offering potential insights into the mechanisms underlying these associations, and the etiology and course of personality pathology.

Implications for Personality Science and Clinical Settings

Personality science has long recognized that individual differences in personality functioning include variations that are both adaptive and maladaptive; these individual differences speak to how and why personality may be linked to functioning in a range of important domains, as well as to so many different life outcomes (see Ozer & Benet-Martínez, 2006). Moving beyond a more narrow focus on extreme personality traits, as defined in the current psychiatric diagnostic system, to a broader focus on the full spectrum of personality traits, as well as maladaptive personality configurations and syndromes of problematic behaviors in interpersonal and other domains, will help to identify individuals and groups characterized not just by personality extremity, but also unique schemas, narratives, and ways of understanding themselves and the world.

Not surprisingly, the characteristic interpersonal dysfunction evidenced by individuals with personality pathology is manifested in clinical settings. Maladaptive interpersonal behaviors and a dysfunctional interpersonal style strain the therapeutic relationship, which can, in turn, negatively affect the effective delivery of appropriate psychiatric treatments (see Hopwood, Wright, et al., 2013). Results of the present meta-analytic review have important clinical implications. A greater understanding of the interpersonal dysfunction that characterizes a particular personality disorder can help in differential diagnosis, as well as in formulating conceptual models for understanding patients' predominant interpersonal styles—in particular, in which situations and in what ways they will exhibit interpersonal dysfunction. In addition, the overlap evidenced in personality pathology and interpersonal style, as conceptualized in the circumplex model of interpersonal behavior, underscores the importance of using measures of the interpersonal circumplex as part of a comprehensive clinical assessment. For example, administering an interpersonal circumplex measure to patients (and informants, when possible) will aid in differential diagnosis among personality disorders, help inform clinicians of the severity (as evidenced by extreme scores) and quality (as evidenced by the pattern of scores) of the interpersonal dysfunction, guide case conceptualization, and facilitate clinical decision making (e.g., the required intensity and the nature of the treatment). Finally, conceptualizing personality pathology as fundamentally reflecting disturbances in how individuals view themselves in relation to others, and the quality of their interpersonal interactions, provides a theoretically and clinically meaningful way to differentiate personality pathology from other forms of psychopathology.

Guidelines for Future Research

Results of the present meta-analysis highlight a number of important directions for future research. Guidelines are outlined briefly below.

1. Assess personality disorders and interpersonal functioning using prospective, longitudinal study designs. Given that existing research is predominantly cross-sectional, prospective, longitudinal study designs that include the assessment of personality pathology and interpersonal functioning on multiple occasions are needed. Such an approach will help to elucidate the temporal associations between personality disorders and interpersonal functioning, including whether one precedes the other and/or whether they wax and wane in tandem, thereby informing research on the etiology and course of personality pathology symptoms over time, as well as helping to identify mechanisms underlying associations between personality pathology and interpersonal dysfunction.

2. Develop *DSM–5* Section III criteria for paranoid, schizoid, histrionic, and dependent personality disorders. Although paranoid, schizoid, histrionic, and dependent personality disorders were not retained as personality disorder diagnoses in *DSM–5* Section III (though they can be derived using the personality trait system), the present results provide clear evidence of their validity. Thus, diagnostic criteria defined by disturbances in self and interpersonal functioning and characteristic pathological personality traits should be developed for these four personality disorders. In addition, the inclusion of obsessive– compulsive personality disorder in *DSM–5* Sections II and III should

be reassessed. Results of the present meta-analytic review will prove useful in this regard in that we have identified key domains of interpersonal dysfunction for each personality disorder. Including diagnostic criteria for paranoid, schizoid, histrionic, and dependent personality disorders will facilitate empirical research on *DSM–5* Section III and future conceptualizations of personality pathology that encompass the comprehensive disturbances manifested in self and interpersonal functioning.

3. Assess and report results for personality disorders conceptualized using *DSM–IV*/*DSM–5* Section II and *DSM–5* Section III (and future editions of the *DSM*). Most existing research on interpersonal functioning has focused on antisocial and borderline personality disorders, but, to gain a comprehensive understanding of interpersonal functioning across all forms of personality pathology, it is important to assess and report results for all personality disorders (both current and proposed conceptualizations). Furthermore, to further evaluate the validity of the current and proposed personality disorders (and especially their discriminant validity), researchers examining personality disorders and interpersonal functioning should assess and conduct analyses for all personality disorders, defined using both current and proposed diagnoses, whenever possible. Results for all personality disorders should be reported, whether significant or not (perhaps in a brief supplement, if not the primary focus of the research). Such an approach will prove invaluable in evaluating and refining current and proposed personality disorder criteria.

4. Assess interpersonal functioning in multiple specific relationship domains and at the level of the interaction and relationship, in addition to the level of the individual. The paucity of research on personality disorders and functioning in specific relationship domains other than the romantic domain limits the conclusions that can be drawn. Researchers should assess and report results for multiple specific relationship domains whenever possible, including the family, parent– child, and peer domains, when applicable. The peer domain has been largely understudied, but may offer important insights. Another potentially important domain is interpersonal functioning in work settings (i.e., with coworkers, employers, and employees); it may be that greater interpersonal dysfunction for obsessive– compulsive personality disorder is evident in this domain. Future research should also consider functioning even among individuals who have failed to form relationships when possible (e.g., assessing peer relationships using classmate reports, rather than asking participants to identify a close friend to provide a report). By considering functioning in multiple specific relationship domains, research will help to clarify whether the pervasiveness of dysfunction is a key characteristic of the personality disorders, as conceptualized by both current and proposed diagnostic classification systems.

5. Assess personality disorders and interpersonal functioning using multiple methods and reporters. Researchers should assess personality disorders and interpersonal functioning using multiple methods (e.g., structured interviews, questionnaires, observations) and reporters (e.g., self, romantic partner, parents,

children, teachers, peers) whenever possible. Moreover, it is also critical that researchers recognize that interpersonal interactions and relationships are not unidirectional and that focusing on a single individual within an interpersonal dyad or larger system is necessarily limited. Novel and innovative assessment methods should be considered, in addition to traditional interview and questionnaire measures (e.g., daily diaries, Bhatia, Davila, Eubanks-Carter, & Burckell, 2013; Wright & Simms, 2016). Such a multimethod, multireporter approach will help to overcome potential reporting bias; provide unique, but informative, perspectives on personality pathology and interpersonal functioning; help reduce shared-method variance arising from using the same method or reporter to assess multiple constructs; and play an important role in the modeling of latent personality disorder and interpersonal functioning constructs.

6. Assess personality disorders and interpersonal functioning among male samples. Given that most studies on personality disorders and interpersonal functioning have been conducted among female samples, researchers should make efforts to increase the number of males in their samples. One notable exception is that studies of antisocial personality disorder are largely conducted among male samples; researchers should make greater efforts to increase the number of females in this research.

7. Assess interpersonal style among child and adolescent samples. Given that personality disorders are defined in the current diagnostic system as adult disorders, it is not surprising that most studies on personality disorders and interpersonal functioning have been conducted among adult samples. However, growing evidence that personality pathology is evident and assessable in adolescence or even earlier, and has implications for later functioning in adulthood, underscores the need for extensions to child and adolescent samples. Such research will be particularly informative when conducted as part of a prospective, longitudinal study design (see above), as it will help to track the emergence and development of personality pathology and its associated interpersonal dysfunction, thereby speaking to the etiology and prognosis of personality pathology.

8. Assess interpersonal functioning among individuals undergoing personality disorder treatment. Empirical research that assesses interpersonal functioning among individuals prior to, during, and after treatment for personality disorders will prove informative. Evidence that interpersonal functioning improves with successful treatment would suggest that personality pathology is causally linked with interpersonal impairment; alternatively, evidence that improved interpersonal functioning precedes improvement in personality disorder symptoms, and/or that decreases in other psychopathology symptoms account for interpersonal improvement, would suggest alternative etiological pathways and mechanisms underlying associations between personality disorders and interpersonal functioning.

Conclusions

The last several decades of research and commentary have called into question the validity and reliability of personality disorders, as they are conceptualized in recent editions of the *DSM* (*DSM–IV*, reprinted in *DSM–5* Section II). The results of the present meta-analytic review lend support for the construct validity of current conceptualizations of personality disorders, as indexed by meaningful associations with interpersonal dysfunction and relationship impairment. Moreover, despite ample evidence of overlap among personality disorders, the results also lend support for their discriminant validity, indexed by unique patterns of interpersonal dysfunction that differentiate each personality disorder. At the same time, however, the results also suggest that proposed conceptualizations of personality pathology (*DSM–5* Section III) hold promise in defining personality disorders in terms of disturbances in self and interpersonal functioning. Moreover, a lack of evidence of pervasive impairment across specific relationship domains is inconsistent for both current and proposed *DSM* conceptualizations. The gaps in the empirical literature that have been identified here underscore the value of prospective, longitudinal research on personality disorders (both current and proposed conceptualizations) and interpersonal functioning. Such investigations should include assessments of both current and proposed personality disorder constructs from childhood into adulthood and among males and females, using multiple methods and reporters. In addition, a comprehensive assessment of each of the personality disorders included in the current diagnostic classification system (as well as the development of diagnostic criteria for paranoid, schizoid, histrionic, and dependent personality disorders in the proposed classification system) should be used, and functioning should be assessed in multiple interpersonal domains. Careful attention to the nuanced differences in the personality disorders, as evidenced by different interpersonal patterns and functioning within specific relationship domains, will help to further refine the current personality disorder diagnostic criteria sets. In doing so, future editions of the *DSM* have the potential to redefine our understanding of personality pathology and its etiology, diagnosis, prognosis, and treatment.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

References marked with an asterisk indicate studies included in the meta-analysis.

*. Abela JRZ, Skitch SA, Auerbach RP, Adams P. The impact of parental borderline personality disorder on vulnerability to depression in children of affectively ill parents. Journal of Personality Disorders. 2005; 19:68–83. http://dx.doi.org/10.1521/pedi.19.1.68.62177. [PubMed: 15899721]

Acton GS, Revelle W. Interpersonal personality measures show circumplex structure based on new psychometric criteria. Journal of Personality Assessment. 2002; 79:446–471. http://dx.doi.org/10.1207/S15327752JPA7903_04. [PubMed: 12511015]

*. Aguirre F, Sergi MJ, Levy CA. Emotional intelligence and social functioning in persons with schizotypy. Schizophrenia Research. 2008; 104:255–264. http://dx.doi.org/10.1016/j.schres.2008.05.007. [PubMed: 18555665]

Alden LE, Wiggins JS, Pincus AL. Construction of circumplex scales for the Inventory of Interpersonal Problems. Journal of Personality Assessment. 1990; 55:521–536. http://dx.doi.org/10.1080/00223891.1990.9674088. [PubMed: 2280321]

American Psychiatric Association (APA). Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 1994.

American Psychiatric Association (APA). Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 2000. text rev.

American Psychiatric Association (APA). Diagnostic and statistical manual of mental disorders. 5. Washington, DC: Author; 2013.

American Psychiatric Association (APA). Online assessment measures: The Personality Inventory for DSM–5 (PID-5)-Adults. 2016. Retrieved from https://www.psychiatry.org/psychiatrists/practice/dsm/dsm-5/online-assessment-measures

*. Ansell EB, Sanislow CA, McGlashan TH, Grilo CM. Psychosocial impairment and treatment utilization by patients with borderline personality disorder, other personality disorders, mood and anxiety disorders, and a healthy comparison group. Comprehensive Psychiatry. 2007; 48:329–336. http://dx.doi.org/10.1016/j.comppsych.2007.02.001. [PubMed: 17560953]

*. Barnow S, Lucht M, Freyberger H-J. Correlates of aggressive and delinquent conduct problems in adolescence. Aggressive Behavior. 2005; 31:24–39. http://dx.doi.org/10.1002/ab.20033.

*. Barnow S, Spitzer C, Grabe HJ, Kessler C, Freyberger HJ. Individual characteristics, familial experience, and psychopathology in children of mothers with borderline personality disorder. Journal of the American Academy of Child & Adolescent Psychiatry. 2006; 45:965–972. http://dx.doi.org/10.1097/01.chi.0000222790.41853.b9. [PubMed: 16865039]

*. Barnow S, Stopsack M, Grabe HJ, Meinke C, Spitzer C, Kronmüller K, Sieswerda S. Interpersonal evaluation bias in borderline personality disorder. Behaviour Research and Therapy. 2009; 47:359–365. http://dx.doi.org/10.1016/j.brat.2009.02.003. [PubMed: 19278670]

*. Barrett MS, Barber JP. Interpersonal profiles in major depressive disorder. Journal of Clinical Psychology. 2007; 63:247–266. http://dx.doi.org/10.1002/jclp.20346. [PubMed: 17211875]

*. Belford B, Kaehler LA, Birrell P. Relational health as a mediator between betrayal trauma and borderline personality disorder. Journal of Trauma & Dissociation. 2012; 13:244–257. http://dx.doi.org/10.1080/15299732.2012.642750. [PubMed: 22375810]

Bender DS, Dolan RT, Skodol AE, Sanislow CA, Dyck IR, McGlashan TH, Gunderson JG. Treatment utilization by patients with personality disorders. The American Journal of Psychiatry. 2001; 158:295–302. http://dx.doi.org/10.1176/appi.ajp.158.2.295. [PubMed: 11156814]

Benjamin L. Every psychopathology is a gift of love. Psychotherapy Research. 1993; 3:1–24. http://dx.doi.org/10.1080/10503309312331333629.

*. Bhatia V, Davila J, Eubanks-Carter C, Burckell LA. Appraisals of daily romantic relationship experiences in individuals with borderline personality disorder features. Journal of Family Psychology. 2013; 27:518–524. http://dx.doi.org/10.1037/a0032870. [PubMed: 23750533]

Birtchnell J, Evans C. The Person's Relating to Others Questionnaire (PROQ2). Personality and Individual Differences. 2004; 36:125–140.

Birtchnell J, Falkowski J, Steffert B. The negative relating of depressed patients: A new approach. Journal of Affective Disorders. 1992; 24:165–176. http://dx.doi.org/10.1016/0165-0327(92)90064-D. [PubMed: 1573125]

*. Birtchnell J, Shine J. Personality disorders and the interpersonal octagon. British Journal of Medical Psychology. 2000; 73:433–448. http://dx.doi.org/10.1348/000711200160606. [PubMed: 11140786]

Blackburn R, Renwick SJ. Rating scales for measuring the interpersonal circle in forensic psychiatric patients. Psychological Assessment. 1996; 8:76–84. http://dx.doi.org/10.1037/1040-3590.8.1.76.

*. Blanchard JJ, Collins LM, Aghevli M, Leung WW, Cohen AS. Social anhedonia and schizotypy in a community sample: The Maryland longitudinal study of schizotypy. Schizophrenia Bulletin. 2011; 37:587–602. http://dx.doi.org/10.1093/schbul/sbp107. [PubMed: 19850669]

*. Boggs, CD. Clinical overlap between posttraumatic stress disorder and borderline personality disorder in male veterans. Texas A&M University; College Station, TX: 2005. (Unpublished doctoral dissertation)

*. Bouchard S, Sabourin S, Lussier Y, Villeneuve E. Relationship quality and stability in couples when one partner suffers from borderline personality disorder. Journal of Marital and Family Therapy. 2009; 35:446–455. http://dx.doi.org/10.1111/j.1752-0606.2009.00151.x. [PubMed: 19785701]

*. Brüne M, Ghiassi V, Ribbert H. Does borderline personality disorder reflect the pathological extreme of an adaptive reproductive strategy? Insights and hypotheses from evolutionary life-history theory. Clinical Neuropsychiatry: Journal of Treatment Evaluation. 2010; 7:3–9.

Campbell DT, Fiske DW. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychological Bulletin. 1959; 56:81–105. http://dx.doi.org/10.1037/h0046016. [PubMed: 13634291]

*. Campbell WK, Foster CA, Finkel EJ. Does self-love lead to love for others? A story of narcissistic game playing. Journal of Personality and Social Psychology. 2002; 83:340–354. http://dx.doi.org/10.1037/0022-3514.83.2.340. [PubMed: 12150232]

Carson, RC. Interaction concepts of personality. Chicago, IL: Aldine; 1969.

*. Chanen AM, Jovev M, Jackson HJ. Adaptive functioning and psychiatric symptoms in adolescents with borderline personality disorder. The Journal of Clinical Psychiatry. 2007; 68:297–306. http://dx.doi.org/10.4088/JCP.v68n0217. [PubMed: 17335330]

*. Chédebois L, Régner I, van Leeuwen N, Chauchard E, Séjourné N, Rodgers R, Chabrol H. Relative contributions of acculturation and psychopathological factors to cannabis use among adolescents from migrant parents. Addictive Behaviors. 2009; 34:1023–1028. http://dx.doi.org/10.1016/j.addbeh.2009.06.011. [PubMed: 19616896]

Chen H, Cohen P, Johnson JG, Kasen S, Sneed JR, Crawford TN. Adolescent personality disorders and conflict with romantic partners during the transition to adulthood. Journal of Personality Disorders. 2004; 18:507–525. http://dx.doi.org/10.1521/pedi.18.6.507.54794. [PubMed: 15615664]

Clark LA. Assessment and diagnosis of personality disorder: Perennial issues and an emerging reconceptualization. Annual Review of Psychology. 2007; 58:227–257. http://dx.doi.org/10.1146/annurev.psych.57.102904.190200.

Clark, LA., Harrison, JA. Assessment instruments. In: Livesley, WJ., editor. Handbook of personality disorders: Theory, research, and treatment. New York, NY: Guilford Press; 2001. p. 277-306.

Clark LA, Ro E. Three-pronged assessment and diagnosis of personality disorder and its consequences: Personality functioning, pathological traits, and psychosocial disability. Personality Disorders: Theory, Research, and Treatment. 2014; 5:55–69. http://dx.doi.org/10.1037/per0000063.

Cleckley, HM. The mask of sanity. 5. St. Louis, MO: Mosby; 1976.

*. Cline, JI. Autonomic nervous system functioning and callousunemotional traits in childhood-onset conduct disorder. Temple University; Philadelphia, PA: 2013. (Unpublished doctoral dissertation)

*. Cohen AS, Hong SL. Understanding constricted affect in schizotypy through computerized prosodic analysis. Journal of Personality Disorders. 2011; 25:478–491. http://dx.doi.org/10.1521/pedi.2011.25.4.478. [PubMed: 21838563]

Cohen, J. Statistical power analysis for the behavioral sciences. Hillsdale, NJ: Erlbaum; 1988.

Cohen P, Crawford TN, Johnson JG, Kasen S. The children in the community study of developmental course of personality disorder. Journal of Personality Disorders. 2005; 19:466–486. http://dx.doi.org/10.1521/pedi.2005.19.5.466. [PubMed: 16274277]

*. Conroy S, Marks MN, Schacht R, Davies HA, Moran P. The impact of maternal depression and personality disorder on early infant care. Social Psychiatry and Psychiatric Epidemiology. 2010; 45:285–292. http://dx.doi.org/10.1007/s00127-009-0070-0. [PubMed: 19466372]

Corbitt EM, Widiger TA. Sex differences among the personality disorders: An exploration of the data. Clinical Psychology: Science and Practice. 1995; 2:225–238. http://dx.doi.org/10.1111/j.1468-2850.1995.tb00041.x.

Daley SE, Burge D, Hammen C. Borderline personality disorder symptoms as predictors of 4-year romantic relationship dysfunction in young women: Addressing issues of specificity. Journal of Abnormal Psychology. 2000; 109:451–460. http://dx.doi.org/10.1037/0021-843X.109.3.451. [PubMed: 11016115]

*. DeFife JA, Malone JC, DiLallo J, Westen D. Assessing adolescent personality disorders with the Shedler–Westen Assessment Procedure for Adolescents. Clinical Psychology: Science and Practice. 2013; 20:393–407. http://dx.doi.org/10.1111/cpsp.12049.

Diekman AB, Goodfriend W. Rolling with the changes: A role congruity perspective on gender norms. Psychology of Women Quarterly. 2006; 30:369–383. http://dx.doi.org/10.1111/j.1471-6402.2006.00312.x.

*. Drabick DA, Baugh D. A community-based approach to preventing youth violence: What can we learn from the playground? Progress in Community Health Partnerships: Research, Education, and Action. 2010; 4:189–196. http://dx.doi.org/10.1353/cpr.2010.0002.

*. Drabick DA, Gadow KD, Sprafkin J. Co-occurrence of conduct disorder and depression in a clinic-based sample of boys with ADHD. Journal of Child Psychology and Psychiatry. 2006; 47:766–774. http://dx.doi.org/10.1111/j.1469-7610.2006.01625.x. [PubMed: 16898990]

Durrett C, Westen D. The structure of axis II disorders in adolescents: A cluster- and factor-analytic investigation of *DSM–IV* categories and criteria. Journal of Personality Disorders. 2005; 19:440–461. http://dx.doi.org/10.1521/pedi.2005.19.4.440. [PubMed: 16178684]

*. Dyce, JA. Structure and correlates of personality disorders. University of Alberta; Edmonton, AB, Canada: 1997. (Unpublished doctoral dissertation)

Eagly AH, Karau SJ. Role congruity theory of prejudice toward female leaders. Psychological Review. 2002; 109:573–598. http://dx.doi.org/10.1037/0033-295X.109.3.573. [PubMed: 12088246]

*. Eikenaes I, Hummelen B, Abrahamsen G, Andrea H, Wilberg T. Personality functioning in patients with avoidant personality disorder and social phobia. Journal of Personality Disorders. 2013; 27:746–763. http://dx.doi.org/10.1521/pedi_2013_27_109. [PubMed: 23786266]

*. Elgar FJ, Mills RS, McGrath PJ, Waschbusch DA, Brownridge DA. Maternal and paternal depressive symptoms and child maladjustment: The mediating role of parental behavior. Journal of Abnormal Child Psychology. 2007; 35:943–955. http://dx.doi.org/10.1007/s10802-007-9145-0. [PubMed: 17577659]

*. Ellis B, Nigg J. Parenting practices and attention-deficit/hyperactivity disorder: New findings suggest partial specificity of effects. Journal of the American Academy of Child & Adolescent Psychiatry. 2009; 48:146–154. http://dx.doi.org/10.1097/CHI.0b013e31819176d0. [PubMed: 19065110]

*. Falk AE, Lee SS. Parenting behavior and conduct problems in children with and without attention-deficit/hyperactivity disorder (ADHD): Moderation by callous-unemotional traits. Journal of Psychopathology and Behavioral Assessment. 2012; 34:172–181. http://dx.doi.org/10.1007/s10862-011-9268-z.

*. Farr, CN. Female to male dating violence: Borderline personality characteristics, attachment style, psychopathology, and motivation. West Virginia University; Morgantown, WV: 2000. (Unpublished doctoral dissertation)

Fergusson DM, Horwood LJ, Ridder EM. Show me the child at seven: The consequences of conduct problems in childhood for psychosocial functioning in adulthood. Journal of Child Psychology and Psychiatry. 2005; 46:837–849. http://dx.doi.org/10.1111/j.1469-7610.2004.00387.x. [PubMed: 16033632]

Field AP. Meta-analysis of correlation coefficients: A Monte Carlo comparison of fixed- and random-effects methods. Psychological Methods. 2001; 6:161–180. http://dx.doi.org/10.1037/1082-989X.6.2.161. [PubMed: 11411440]

Field AP. Is the meta-analysis of correlation coefficients accurate when population correlations vary? Psychological Methods. 2005; 10:444–467. http://dx.doi.org/10.1037/1082-989X.10.4.444. [PubMed: 16392999]

First, MB., Bell, CB., Cuthbert, B., Krystal, JH., Malison, R., Offord, DR. Personality disorders and relational disorders: A research agenda for addressing crucial gaps in DSM. In: Kupfer, DJ.First, MB., Regier, DA., editors. A research agenda for DSM-V. Washington, DC: American Psychiatric Association; 2002. p. 123-199.

Fleiss, JL. Statistical methods for rates and proportions. 2. New York, NY: Wiley; 1981.

*. Fombonne E, Wostear G, Cooper V, Harrington R, Rutter M. The Maudsley long-term follow-up of child and adolescent depression. 1. Psychiatric outcomes in adulthood. The British Journal of Psychiatry. 2001; 179:210–217. http://dx.doi.org/10.1192/bjp.179.3.210. [PubMed: 11532797]

*. Fontaine D, Nolin P. Personality disorders in a sample of parents accused of physical abuse or neglect. Journal of Family Violence. 2012; 27:23–31. http://dx.doi.org/10.1007/s10896-011-9403-3.

*. Fortunata B, Kohn CS. Demographic, psychosocial, and personality characteristics of lesbian batterers. Violence and Victims. 2003; 18:557–568. http://dx.doi.org/10.1891/vivi.2003.18.5.557. [PubMed: 14695021]

Frankenburg, FR., Zanarini, MC. The association between borderline personality disorder and chronic medical illnesses, poor health-related lifestyle choices, and costly forms of health care utilization. 2004. http://dx.doi.org/10.4088/JCP.v65n1211

Fruzzetti AE, Shenk C, Hoffman PD. Family interaction and the development of borderline personality disorder: A transactional model. Development and Psychopathology. 2005; 17:1007, 1030. [PubMed: 16613428]

*. Fung AL, Raine A. Peer victimization as a risk factor for schizotypal personality in childhood and adolescence. Journal of Personality Disorders. 2012; 26:428–434. http://dx.doi.org/10.1521/pedi.2012.26.3.428. [PubMed: 22686230]

Garb HN. Race bias, social class bias, and gender bias in clinical judgment. Clinical Psychology: Science and Practice. 1997; 4:99–120. http://dx.doi.org/10.1111/j.1468-2850.1997.tb00104.x.

*. Goldenson J, Geffner R, Foster SL, Clipson CR. Female domestic violence offenders: Their attachment security, trauma symptoms, and personality organization. Violence and Victims. 2007; 22:532–545. http://dx.doi.org/10.1891/088667007782312186. [PubMed: 18064968]

*. Goldstein LH, Harvey EA, Friedman-Weieneth JL, Pierce C, Tellert A, Sippel JC. Examining subtypes of behavior problems among 3-year-old children, Part II: Investigating differences in parent psychopathology, couple conflict, and other family stressors. Journal of Abnormal Child Psychology. 2007; 35:111–123. http://dx.doi.org/10.1007/s10802-006-9088-x. [PubMed: 17226095]

*. Gondolf EW. MCMI-III results for batterer program participants in four cities: Less “pathological” than expected. Journal of Family Violence. 1999; 14:1–17. http://dx.doi.org/10.1023/A:1022843324943.

Gunderson JG, Shea MT, Skodol AE, McGlashan TH, Morey LC, Stout RL, Keller MB. The Collaborative Longitudinal Personality Disorders Study: Development, aims, design, and sample characteristics. Journal of Personality Disorders. 2000; 14:300–315. http://dx.doi.org/10.1521/pedi.2000.14.4.300. [PubMed: 11213788]

Gunderson JG, Stout RL, McGlashan TH, Shea T, Morey LC, Grilo CM, Skodol AE. Ten-year course of borderline personality disorder: Psychopathology and function from the Collaborative Longitudinal Personality Disorders study. Archives of General Psychiatry. 2011; 68:827–837. [PubMed: 21464343]

Gurtman MB. Construct validity of interpersonal personality measures: The interpersonal circumplex as a nomological net. Journal of Personality and Social Psychology. 1992; 63:105–118. http://dx.doi.org/10.1037/0022-3514.63.1.105.

Gurtman MB. Exploring personality with the interpersonal circumplex. Social and Personality Psychology Compass. 2009; 3:601–619. http://dx.doi.org/10.1111/j.1751-9004.2009.00172.x.

Gurtman MB, Balakrishnan JD. Circular measurement redux: The analysis and interpretation of interpersonal circle profiles. Clinical Psychology: Science and Practice. 1998; 5:344–360. http://dx.doi.org/10.1111/j.1468-2850.1998.tb00154.x.

Gurtman, MB., Pincus, AL. The circumplex model: Methods and research applications. In: Schinka, J., Velicer, W., editors. Handbook of psychology: Vol. 2. Research methods in psychology. Hoboken, NJ: Wiley; 2003. p. 407-428.http://dx.doi.org/10.1002/0471264385.wei0216

*. Harvey E, Stoessel B, Herbert S. Psychopathology and parenting practices of parents of preschool children with behavior problems. Parenting: Science and Practice. 2011; 11:239–263. http://dx.doi.org/10.1080/15295192.2011.613722.

*. Haslam N, Reichert T, Fiske AP. Aberrant social relations in the personality disorders. Psychology and Psychotherapy. 2002; 75:19–31. http://dx.doi.org/10.1348/147608302169526. [PubMed: 12006197]

Hedges, LV., Olkin, I. Statistical methods for meta-analysis. London, UK: Academic Press; 1985.

*. Hill J, Pilkonis P, Morse J, Feske U, Reynolds S, Hope H, Broyden N. Social domain dysfunction and disorganization in borderline personality disorder. Psychological Medicine. 2008; 38:135–146. http://dx.doi.org/10.1017/S0033291707001626. [PubMed: 17892627]

*. Hill J, Stepp SD, Wan MW, Hope H, Morse JQ, Steele M, Pilkonis PA. Attachment, borderline personality, and romantic relationship dysfunction. Journal of Personality Disorders. 2011; 25:789–805. http://dx.doi.org/10.1521/pedi.2011.25.6.789. [PubMed: 22217225]

*. Hilsenroth MJ, Defife JA, Blake MM, Cromer TD. The effects of borderline pathology on short-term psychodynamic psychotherapy for depression. Psychotherapy Research. 2007; 17:172–184. http://dx.doi.org/10.1080/10503300600786748.

*. Hines DA. Borderline personality traits and intimate partner aggression: An international multisite, cross-gender analysis. Psychology of Women Quarterly. 2008; 32:290–302. http://dx.doi.org/10.1111/j.1471-6402.2008.00437.x.

*. Hipwell A, Keenan K, Kasza K, Loeber R, Stouthamer-Loeber M, Bean T. Reciprocal influences between girls' conduct problems and depression, and parental punishment and warmth: A six year prospective analysis. Journal of Abnormal Child Psychology. 2008; 36:663–677. http://dx.doi.org/10.1007/s10802-007-9206-4. [PubMed: 18172753]

*. Hopwood CJ, Donnellan MB, Ackerman RA, Thomas KM, Morey LC, Skodol AE. The validity of the Personality Diagnostic Questionnaire-4 Narcissistic Personality Disorder Scale for assessing pathological grandiosity. Journal of Personality Assessment. 2013; 95:274–283. http://dx.doi.org/10.1080/00223891.2012.732637. [PubMed: 23101760]

Hopwood CJ, Morey LC. Psychological conflict in borderline personality as represented by inconsistent self-report item responding. Journal of Social and Clinical Psychology. 2007; 26:1065–1075. http://dx.doi.org/10.1521/jscp.2007.26.9.1065.

Hopwood CJ, Wright AGC, Ansell EB, Pincus AL. The interpersonal core of personality pathology. Journal of Personality Disorders. 2013; 27:270–295. http://dx.doi.org/10.1521/pedi.2013.27.3.270. [PubMed: 23735037]

Horowitz, LM., Alden, LE., Wiggins, JS., Pincus, AL. Inventory of Interpersonal Problems Manual. Odessa, FL: Psychological Corporation; 2000.

Horowitz, LM., Dryer, DC., Krasnoperova, EN. The circumplex structure of interpersonal problems. In: Plutchik, R., Conte, HR., editors. Circumplex models of personality and emotions. Washington, DC: American Psychological Association; 1997. p. 347-384.http://dx.doi.org/10.1037/10261-015

Horowitz LM, Rosenberg SE, Baer BA, Ureño G, Villaseñor VS. Inventory of interpersonal problems: Psychometric properties and clinical applications. Journal of Consulting and Clinical Psychology. 1988; 56:885–892. http://dx.doi.org/10.1037/0022-006X.56.6.885. [PubMed: 3204198]

*. Hosack, LL. The relationship between borderline personality disorder and academic and interpersonal functioning among college students: Does religiosity moderate the effect?. Michigan State University; East Lansing, MI: 2012. (Unpublished doctoral dissertation)

*. Hughes FM, Stuart GL, Gordon KC, Moore TM. Predicting the use of aggressive conflict tactics in a sample of women arrested for domestic violence. Journal of Social and Personal Relationships. 2007; 24:155–176. http://dx.doi.org/10.1177/0265407507075406.

*. Hummelen B, Wilberg T, Pedersen G, Karterud S. The relationship between avoidant personality disorder and social phobia. Comprehensive Psychiatry. 2007; 48:348–356. http://dx.doi.org/10.1016/j.comppsych.2007.03.004. [PubMed: 17560956]

Hunter, JE., Schmidt, FL. Methods of meta-analysis: Correcting error and bias in research findings. 2. Thousand Oaks, CA: Sage; 2004. http://dx.doi.org/10.4135/9781412985031

Jane JS, Oltmanns TF, South SC, Turkheimer E. Gender bias in diagnostic criteria for personality disorders: An item response theory analysis. Journal of Abnormal Psychology. 2007; 116:166–175. http://dx.doi.org/10.1037/0021-843X.116.1.166. [PubMed: 17324027]

*. Johnson JG, Cohen P, Kasen S, Brook JS. Paternal psychiatric symptoms and maladaptive paternal behavior in the home during the child rearing years. Journal of Child and Family Studies. 2004; 13:421–437. http://dx.doi.org/10.1023/B:JCFS.0000044725.76533.66.

*. Jones K, Daley D, Hutchings J, Bywater T, Eames C. Efficacy of the Incredible Years Basic parent training programme as an early intervention for children with conduct problems and ADHD. Child: Care, Health and Development. 2007; 33:749–756. http://dx.doi.org/10.1111/j.1365-2214.2007.00747.x.

*. Jose, A. Risk factors for physical aggression in couples. Stony Brook University; Stony Brook, NY: 2010. (Unpublished doctoral dissertation)

*. Jovev M, Jackson HJ. The relationship of borderline personality disorder, life events and functioning in an Australian psychiatric sample. Journal of Personality Disorders. 2006; 20:205–217. http://dx.doi.org/10.1521/pedi.2006.20.3.205. [PubMed: 16776551]

Kaye, AL., Shea, MT. Personality disorders, personality traits, and defense mechanisms measures. In: Task Force for the Handbook of Psychiatric Measures. , editor. Handbook of psychiatric measures. Washington, DC: American Psychiatric Association; 2000. p. 713-749.

*. Keenan K, Coyne C, Lahey BB. Should relational aggression be included in DSM-V? Journal of the American Academy of Child & Adolescent Psychiatry. 2008; 47:86–93. http://dx.doi.org/10.1097/chi.0b013e31815a56b8. [PubMed: 18174829]

*. Keenan K, Wakschlag LS. More than the terrible twos: The nature and severity of behavior problems in clinic-referred preschool children. Journal of Abnormal Child Psychology. 2000; 28:33–46. http://dx.doi.org/10.1023/A:1005118000977. [PubMed: 10772348]

Kepes S, Banks GC, McDaniel M, Whetzel DL. Publication bias in the organizational sciences. Organizational Research Methods. 2012; 15:624–662. http://dx.doi.org/10.1177/1094428112452760.

Kepes S, Banks GC, Oh I-S. Avoiding bias in publication bias research: The value of “null” findings. Journal of Business and Psychology. 2014; 29:183–203. http://dx.doi.org/10.1007/s10869-012-9279-0.

Kernberg O. Borderline personality organization. Journal of the American Psychoanalytic Association. 1967; 15:641–685. http://dx.doi.org/10.1177/000306516701500309. [PubMed: 4861171]

*. Kiel EJ, Gratz KL, Moore SA, Latzman RD, Tull MT. The impact of borderline personality pathology on mothers’ responses to infant distress. Journal of Family Psychology. 2011; 25:907–918. http://dx.doi.org/10.1037/a0025474. [PubMed: 21928886]

Kiesler DJ. The 1982 Interpersonal Circle: A taxonomy for complementarity in human transactions. Psychological Review. 1983; 90:185–214. http://dx.doi.org/10.1037/0033-295X.90.3.185.

*. Kivisto AJ, Kivisto KL, Moore TM, Rhatigan DL. Antisociality and intimate partner violence: The facilitating role of shame. Violence and Victims. 2011; 26:758–773. http://dx.doi.org/10.1891/0886-6708.26.6.758. [PubMed: 22288094]

*. Klevens J, Bayón MC, Sierra M. Risk factors and context of men who physically abuse in Bogotá, Colombia. Child Abuse & Neglect. 2000; 24:323–332. http://dx.doi.org/10.1016/S0145-2134(99)00148-9. [PubMed: 10739076]

*. Kosson DS, Blackburn R, Byrnes KA, Park S, Logan C, Donnelly JP. Assessing interpersonal aspects of schizoid personality disorder: Preliminary validation studies. Journal of Personality

Assessment. 2008; 90:185–196. http://dx.doi.org/10.1080/00223890701845427. [PubMed: 18444113]

Kotov R, Ruggero CJ, Krueger RF, Watson D, Yuan Q, Zimmerman M. New dimensions in the quantitative classification of mental illness. Archives of General Psychiatry. 2011; 68:1003–1011. http://dx.doi.org/10.1001/archgenpsychiatry.2011.107. [PubMed: 21969458]

Krueger RF, Derringer J, Markon KE, Watson D, Skodol AE. Initial construction of a maladaptive personality trait model and inventory for DSM-5. Psychological Medicine. 2012; 42:1879–1890. http://dx.doi.org/10.1017/S0033291711002674. [PubMed: 22153017]

Krueger RF, Eaton NR. Personality traits and the classification of mental disorders: Toward a more complete integration in *DSM–5* and an empirical model of psychopathology. Personality Disorders: Theory, Research, and Treatment. 2010; 1:97–118. http://dx.doi.org/10.1037/a0018990.

Krueger RF, Markon KE. Reinterpreting comorbidity: A model-based approach to understanding and classifying psychopathology. Annual Review of Clinical Psychology. 2006; 2:111–133. http://dx.doi.org/10.1146/annurev.clinpsy.2.022305.095213.

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. Annual Review of Clinical Psychology. 2014; 10:477–501. http://dx.doi.org/10.1146/annurev-clinpsy-032813-153732.

Krueger RF, Skodol AE, Livesley WJ, Shrout PE, Huang Y. Synthesizing dimensional and categorical approaches to personality disorders: Refining the research agenda for DSM-V Axis II. International Journal of Methods in Psychiatric Research. 2007; 16:S65–S73. http://dx.doi.org/10.1002/mpr.212. [PubMed: 17623397]

*. Kuhlken, K. The interaction of borderline personality disorder symptoms and relationship satisfaction in predicting positive and negative affect. University of North Carolina; Greensboro, Greensboro, NC: 2011. (Unpublished doctoral dissertation)

Kupfer, DJ.First, MB., Regier, DA., editors. A research agenda for DSM-V. Washington, DC: American Psychiatric Association; 2008.

Laforge R, Suczek RF. The interpersonal dimension of personality. III. An interpersonal check list. Journal of Personality. 1955; 24:94–112. http://dx.doi.org/10.1111/j.1467-6494.1955.tb01177.x. [PubMed: 13296018]

Lawson DM. Attachment, interpersonal problems, and family of origin functioning: Differences between partner violent and nonpartner violent men. Psychology of Men & Masculinity. 2008; 9:90–105. http://dx.doi.org/10.1037/1524-9220.9.2.90.

*. Lawson DM, Brossart DF. Interpersonal problems and personality features as mediators between attachment and intimate partner violence. Violence and Victims. 2013; 28:414–428. http://dx.doi.org/10.1891/0886-6708.VV-D-12-00031. [PubMed: 23862307]

Lazarus SA, Cheavens JS, Festa F, Zachary Rosenthal M. Interpersonal functioning in borderline personality disorder: A systematic review of behavioral and laboratory-based assessments. Clinical Psychology Review. 2014; 34:193–205. http://dx.doi.org/10.1016/j.cpr.2014.01.007. [PubMed: 24534643]

Leary, T. Interpersonal diagnosis of personality. New York, NY: Ronald; 1957.

*. Leising D, Krause S, Köhler D, Hinsen K, Clifton A. Assessing interpersonal functioning: Views from within and without. Journal of Research in Personality. 2011; 45:631–641. http://dx.doi.org/10.1016/j.jrp.2011.08.011.

*. Leising D, Rehbein D, Eckardt J. The Inventory of Interpersonal Problems (IIP-64) as a screening measure for avoidant personality disorder. European Journal of Psychological Assessment. 2009; 25:16–22. http://dx.doi.org/10.1027/1015-5759.25.1.16.

*. Leising D, Sporberg D, Rehbein D. Characteristic interpersonal behavior in dependent and avoidant personality disorder can be observed within very short interaction sequences. Journal of Personality Disorders. 2006; 20:319–330. http://dx.doi.org/10.1521/pedi.2006.20.4.319. [PubMed: 16901257]

Lenzenweger MF. Stability and change in personality disorder features: The Longitudinal Study of Personality Disorders. Archives of General Psychiatry. 1999; 56:1009–1015. http://dx.doi.org/10.1001/archpsyc.56.11.1009. [PubMed: 10565501]

Lenzenweger MF, Lane MC, Loranger AW, Kessler RC. *DSM–IV* personality disorders in the National Comorbidity Survey Replication. Biological Psychiatry. 2007; 62:553–564. http://dx.doi.org/10.1016/j.biopsych.2006.09.019. [PubMed: 17217923]

Lenzenweger MF, Loranger AW, Korfine L, Neff C. Detecting personality disorders in a nonclinical population. Application of a 2-stage procedure for case identification. Archives of General Psychiatry. 1997; 54:345–351. http://dx.doi.org/10.1001/archpsyc.1997.01830160073010. [PubMed: 9107151]

Levy KN, Becker DF, Grilo CM, Mattanah JJ, Garnet KE, Quinlan DM, McGlashan TH. Concurrent and predictive validity of the personality disorder diagnosis in adolescent inpatients. The American Journal of Psychiatry. 1999; 156:1522–1528. http://dx.doi.org/10.1176/ajp.156.10.1522. [PubMed: 10518161]

Lindsay KA, Widiger TA. Sex and gender bias in Self- Report Personality Disorder Inventories: Item analysis of the MCMI-II, MMPI, and PDQ-R. Journal of Personality Assessment. 1995; 65:1–20. http://dx.doi.org/10.1207/s15327752jpa6501_1. [PubMed: 16367643]

*. Lindsay WR, Taylor JL, Hogue TE, Mooney P, Steptoe L, Morrissey C. Relationship between assessed emotion, personality, personality disorder and risk in offenders with intellectual disability. Psychiatry, Psychology and Law. 2010; 17:385–397. http://dx.doi.org/10.1080/13218710903443344.

Lipsey, MW., Wilson, DB. Practical meta-analysis. Thousand Oaks, CA: Sage; 2001.

*. Locke KD. Circumplex scales of interpersonal values: Reliability, validity, and applicability to interpersonal problems and personality disorders. Journal of Personality Assessment. 2000; 75:249–267. http://dx.doi.org/10.1207/S15327752JPA7502_6. [PubMed: 11020143]

*. Macfie J, Swan SA. Representations of the caregiver-child relationship and of the self, and emotion regulation in the narratives of young children whose mothers have borderline personality disorder. Development and Psychopathology. 2009; 21:993–1011. http://dx.doi.org/10.1017/S0954579409000534. [PubMed: 19583894]

Markey PM, Funder DC, Ozer DJ. Complementarity of interpersonal behaviors in dyadic interactions. Personality and Social Psychology Bulletin. 2003; 29:1082–1090. http://dx.doi.org/10.1177/0146167203253474. [PubMed: 15189605]

*. Maurizi LK, Gershoff ET, Aber JL. Item-level discordance in parent and adolescent reports of parenting behavior and its implications for adolescents' mental health and relationships with their parents. Journal of Youth and Adolescence. 2012; 41:1035–1052. http://dx.doi.org/10.1007/s10964-011-9741-8. [PubMed: 22258760]

*. McCleery A, Divilbiss M, St-Hilaire A, Aakre JM, Seghers JP, Bell EK, Docherty NM. Predicting social functioning in schizotypy: An investigation of the relative contributions of theory of mind and mood. Journal of Nervous and Mental Disease. 2012; 200:147–152. [PubMed: 22297312]

*. Melley, AH. Social functioning: An examination of construct validity utilizing factor analysis and measures of personality, personality disorder, and mood. University of Virginia; Charlottesville, VA: 2003. (Unpublished doctoral dissertation)

*. Miller JD, Campbell WK, Pilkonis PA. Narcissistic personality disorder: Relations with distress and functional impairment. Comprehensive Psychiatry. 2007; 48:170–177. http://dx.doi.org/10.1016/j.comppsych.2006.10.003. [PubMed: 17292708]

*. Miller JD, Price J, Gentile B, Lynam DR, Campbell WK. Grandiose and vulnerable narcissism from the perspective of the interpersonal circumplex. Personality and Individual Differences. 2012; 53:507–512. http://dx.doi.org/10.1016/j.paid.2012.04.026.

Mitchell SK. Interobserver agreement, reliability, and generalizability of data collected in observational studies. Psychological Bulletin. 1979; 86:376–390. http://dx.doi.org/10.1037/0033-2909.86.2.376.

Monahan KC, Steinberg L, Cauffman E. Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood. Developmental Psychology. 2009; 45:1520–1530. http://dx.doi.org/10.1037/a0017417. [PubMed: 19899911]

*. Monsen JT, Hagtvet KA, Havik OE, Eilertsen DE. Circumplex structure and personality disorder correlates of the Interpersonal Problems model (IIP-C): Construct validity and clinical implications. Psychological Assessment. 2006; 18:165–173. http://dx.doi.org/10.1037/1040-3590.18.2.165. [PubMed: 16768592]

*. Moore DR, Florsheim P, Butner J. Interpersonal behavior, psychopathology, and relationship outcomes among adolescent mothers and their partners. Journal of Clinical Child and Adolescent Psychology. 2007; 36:541–556. http://dx.doi.org/10.1080/15374410701662709. [PubMed: 18088213]

*. Mullins-Sweatt SN, Widiger TA. Personality-related problems in living: An empirical approach. Personality Disorders: Theory, Research, and Treatment. 2010; 1:230–238. http://dx.doi.org/10.1037/a0018228.

*. Nathan R, Rollinson L, Harvey K, Hill J. The Liverpool Violence Assessment: An investigator-based measure of serious violence. Criminal Behaviour and Mental Health. 2003; 13:106–120. http://dx.doi.org/10.1002/cbm.534. [PubMed: 14624264]

*. Newman LK, Stevenson CS, Bergman LR, Boyce P. Borderline personality disorder, mother-infant interaction and parenting perceptions: Preliminary findings. Australian and New Zealand Journal of Psychiatry. 2007; 41:598–605. http://dx.doi.org/10.1080/00048670701392833. [PubMed: 17558622]

*. Olssøn I, Dahl AA. Avoidant personality problems—Their association with somatic and mental health, lifestyle, and social network. A community-based study. Comprehensive Psychiatry. 2012; 53:813–821. http://dx.doi.org/10.1016/j.comppsych.2011.10.007. [PubMed: 22146705]

*. Oltmanns TF, Melley AH, Turkheimer E. Impaired social functioning and symptoms of personality disorders assessed by peer and self-report in a nonclinical population. Journal of Personality Disorders. 2002; 16:437–452. http://dx.doi.org/10.1521/pedi.16.5.437.22123. [PubMed: 12489310]

*. Ostrov JM, Hart EJ, Kamper KE, Godleski SA. Relational aggression in women during emerging adulthood: A social process model. Behavioral Sciences & the Law. 2011; 29:695–710. http://dx.doi.org/10.1002/bsl.1002. [PubMed: 21815200]

*. Ostrov JM, Houston RJ. The utility of forms and functions of aggression in emerging adulthood: Association with personality disorder symptomatology. Journal of Youth and Adolescence. 2008; 37:1147–1158. http://dx.doi.org/10.1007/s10964-008-9289-4.

Ozer DJ, Benet-Martínez V. Personality and the prediction of consequential outcomes. Annual Review of Psychology. 2006; 57:401–421. http://dx.doi.org/10.1146/annurev.psych.57.102904.190127.

*. Pagan, JL. Self and informant reported personality disorder traits in treatment-seeking military veterans. Washington University; St. Louis, MO: 2008. (Unpublished doctoral dissertation)

*. Pagan JL, Eaton NR, Turkheimer E, Oltmanns TF. Peer-reported personality problems of research nonparticipants: Are our samples biased? Personality and Individual Differences. 2006; 41:1131–1142. http://dx.doi.org/10.1016/j.paid.2006.04.017.

*. Pagano ME, Skodol AE, Stout RL, Shea MT, Yen S, Grilo CM, Gunderson JG. Stressful life events as predictors of functioning: Findings from the collaborative longitudinal personality disorders study. Acta Psychiatrica Scandinavica. 2004; 110:421–429. http://dx.doi.org/10.1111/j.1600-0447.2004.00398.x. [PubMed: 15521826]

*. Pajer K, Stein S, Tritt K, Chang C-N, Wang W, Gardner W. Conduct disorder in girls: Neighborhoods, family characteristics, and parenting behaviors. Child and Adolescent Psychiatry and Mental Health. 2008; 2:28. http://dx.doi.org/10.1186/1753-2000-2-28. [PubMed: 18837974]

*. Pardini D, Stepp S, Hipwell A, Stouthamer-Loeber M, Loeber R. The clinical utility of the proposed *DSM–5* callous-unemotional subtype of conduct disorder in young girls. Journal of the American Academy of Child & Adolescent Psychiatry. 2012; 51:62–73.e4. http://dx.doi.org/10.1016/j.jaac.2011.10.005. [PubMed: 22176940]

*. Pfiffner LJ, McBurnett K, Rathouz PJ, Judice S. Family correlates of oppositional and conduct disorders in children with attention deficit/hyperactivity disorder. Journal of Abnormal Child Psychology. 2005; 33:551–563. http://dx.doi.org/10.1007/s10802-005-6737-4. [PubMed: 16195950]

Pincus, AL., Gurtman, MB. Interpersonal Theory and the Interpersonal Circumplex: Evolving Perspectives on Normal and Abnormal Personality. In: Strack, S., editor. Differentiating normal and abnormal personality. 2. New York, NY: Springer; 2006. p. 83-111.

*. Porcerelli JH, Cogan R, Hibbard S. Personality characteristics of partner violent men: A Q-sort approach. Journal of Personality Disorders. 2004; 18:151–162. http://dx.doi.org/10.1521/pedi.18.2.151.32776. [PubMed: 15176754]

*. Raine A, Fung AL, Lam BYH. Peer victimization partially mediates the schizotypy-aggression relationship in children and adolescents. Schizophrenia Bulletin. 2011; 37:937–945. http://dx.doi.org/10.1093/schbul/sbr082. [PubMed: 21795613]

Raskin RN, Hall CS. A Narcissistic Personality Inventory. Psychological Reports. 1979; 45:590–590. http://dx.doi.org/10.2466/pr0.1979.45.2.590. [PubMed: 538183]

Repetti RL, Taylor SE, Seeman TE. Risky families: Family social environments and the mental and physical health of offspring. Psychological Bulletin. 2002; 128:330–366. http://dx.doi.org/10.1037/0033-2909.128.2.330. [PubMed: 11931522]

Ro E, Clark LA. Psychosocial functioning in the context of diagnosis: Assessment and theoretical issues. Psychological Assessment. 2009; 21:313–324. http://dx.doi.org/10.1037/a0016611. [PubMed: 19719344]

Ro E, Clark LA. Interrelations between psychosocial functioning and adaptive- and maladaptive-range personality traits. Journal of Abnormal Psychology. 2013; 122:822–835. http://dx.doi.org/10.1037/a0033620. [PubMed: 24016019]

*. Rodebaugh TL, Gianoli MO, Turkheimer E, Oltmanns TF. The interpersonal problems of the socially avoidant: Self and peer shared variance. Journal of Abnormal Psychology. 2010; 119:331–340. http://dx.doi.org/10.1037/a0019031. [PubMed: 20455606]

*. Rodman, SA. Mechanisms underlying difficulties in intimate relationships in borderline personality disorder: The roles of fear of positive evaluation and fear of abandonment. University of Maryland; College Park, MD: 2008. (Unpublished doctoral dissertation)

Rosenthal, R. Meta-analytic procedures for social research. Rev.. Newbury Park, CA: Sage; 1991. http://dx.doi.org/10.4135/9781412984997

*. Ross JM, Babcock JC. Proactive and reactive violence among intimate partner violent men diagnosed with antisocial and borderline personality disorder. Journal of Family Violence. 2009; 24:607–617. http://dx.doi.org/10.1007/s10896-009-9259-y.

*. Rothweiler, JC. An evaluation of the internal and external validity of the Intrex and Interpersonal Adjective Scales. University of Utah; Salt Lake City, UT: 2004. (Unpublished doctoral dissertation)

*. Rowe R, Maughan B, Pickles A, Costello EJ, Angold A. The relationship between *DSM–IV* oppositional defiant disorder and conduct disorder: Findings from the Great Smoky Mountains Study. Journal of Child Psychology and Psychiatry. 2002; 43:365–373. http://dx.doi.org/10.1111/1469-7610.00027. [PubMed: 11944878]

Rudman LA, Fairchild K. Reactions to counterstereotypic behavior: The role of backlash in cultural stereotype maintenance. Journal of Personality and Social Psychology. 2004; 87:157–176. http://dx.doi.org/10.1037/0022-3514.87.2.157. [PubMed: 15301625]

Saffrey C, Bartholomew K, Scharfe E, Henderson AJ, Koopman R. Self-and partner-perceptions of interpersonal problems and relationship functioning. Journal of Social and Personal Relationships. 2003; 20:117–139.

*. Sansone RA, Barnes J, Muennich E, Wiederman MW. Borderline personality symptomatology and sexual impulsivity. International Journal of Psychiatry in Medicine. 2008; 38:53–60. http://dx.doi.org/10.2190/PM.38.1.e. [PubMed: 18624017]

*. Sansone RA, Chu J, Wiederman MW. Domestic violence and borderline personality symptomatology among women in an inpatient psychiatric setting. Traumatology. 2006; 12:314–319. http://dx.doi.org/10.1177/1534765606297822.

*. Sansone RA, Reddington A, Sky K, Wiederman MW. Borderline personality symptomatology and history of domestic violence among women in an internal medicine setting. Violence and Victims. 2007; 22:120–126. http://dx.doi.org/10.1891/vv-v22i1a008. [PubMed: 17390567]

Schmidt, FL., Hunter, JE. Methods of meta-analysis: Correcting error and bias in research findings. 3. Thousand Oaks, CA: Sage; 2014.

Schmidt, FL., Le, H. Software for the Hunter-Schmidt meta-analysis methods (version 1.2) [Computer software]. Iowa City, IA: University of Iowa Department of Management & Organizations; 2014.

Schmidt JA, Wagner CC, Kiesler DJ. Psychometric and circumplex properties of the octant scale Impact Message Inventory (IMI-C): A structural evaluation. Journal of Counseling Psychology. 1999; 46:325–334. http://dx.doi.org/10.1037/0022-0167.46.3.325.

Schulze, R. Meta-analysis: A comparison of approaches. Cambridge, MA: Hogrefe and Huber; 2004.

*. Seah SL, Ang RP. Differential correlates of reactive and proactive aggression in Asian adolescents: Relations to narcissism, anxiety, schizotypal traits, and peer relations. Aggressive Behavior. 2008; 34:553–562. http://dx.doi.org/10.1002/ab.20269. [PubMed: 18506675]

*. Selby EA, Braithwaite SR, Joiner TE, Fincham FD. Features of borderline personality disorder, perceived childhood emotional invalidation, and dysfunction within current romantic relationships. Journal of Family Psychology. 2008; 22:885–893. http://dx.doi.org/10.1037/a0013673. [PubMed: 19102609]

*. Skodol AE, Gunderson JG, McGlashan TH, Dyck IR, Stout RL, Bender DS, Oldham JM. Functional impairment in patients with schizotypal, borderline, avoidant, or obsessive-compulsive personality disorder. The American Journal of Psychiatry. 2002; 159:276–283. http://dx.doi.org/10.1176/appi.ajp.159.2.276. [PubMed: 11823271]

Skodol AWE, Johnson JG, Cohen P, Sneed JR, Crawford TN. Personality disorder and impaired functioning from adolescence to adulthood. The British Journal of Psychiatry. 2007; 190:415–420. http://dx.doi.org/10.1192/bjp.bp.105.019364. [PubMed: 17470956]

Skodol AE, Pagano ME, Bender DS, Shea MT, Gunderson JG, Yen S, McGlashan TH. Stability of functional impairment in patients with schizotypal, borderline, avoidant, or obsessive-compulsive personality disorder over two years. Psychological Medicine. 2005; 35:443–451. http://dx.doi.org/10.1017/S003329170400354X. [PubMed: 15841879]

*. Smith SW, Hilsenroth MJ, Bornstein RF. Convergent validity of the SWAP-200 dependency scales. Journal of Nervous and Mental Disease. 2009; 197:613–618. http://dx.doi.org/10.1097/NMD.0b013e3181b08d89. [PubMed: 19684499]

Soeteman DI, Hakkaart-van Roijen L, Verheul R, Busschbach JJV. The economic burden of personality disorders in mental health care. The Journal of Clinical Psychiatry. 2008; 69:259–265. http://dx.doi.org/10.4088/JCP.v69n0212. [PubMed: 18363454]

Soldz S, Budman S, Demby A, Merry J. Representation of personality disorders in circumplex and five-factor space: Explorations with a clinical sample. Psychological Assessment. 1993; 5:41–52. http://dx.doi.org/10.1037/1040-3590.5.1.41.

Spitzer RL, Wakefield JC. *DSM–IV* diagnostic criterion for clinical significance: Does it help solve the false positives problem? The American Journal of Psychiatry. 1999; 156:1856–1864. [PubMed: 10588397]

*. Stepp SD, Pilkonis PA, Yaggi KE, Morse JQ, Feske U. Interpersonal and emotional experiences of social interactions in borderline personality disorder. Journal of Nervous and Mental Disease. 2009; 197:484–491. http://dx.doi.org/10.1097/NMD.0b013e3181aad2e7. [PubMed: 19597355]

*. Stewart C, Mezzich AC, Day B-S. Parental psychopathology and paternal child neglect in late childhood. Journal of Child and Family Studies. 2006; 15:542–553. http://dx.doi.org/10.1007/s10826-006-9026-0.

*. Stroud CB, Durbin CE, Saigal SD, Knobloch-Fedders LM. Normal and abnormal personality traits are associated with marital satisfaction for both men and women: An actor–partner interdependence model analysis. Journal of Research in Personality. 2010; 44:466–477. http://dx.doi.org/10.1016/j.jrp.2010.05.011.

Sullivan, HS. The interpersonal theory of psychiatry. Perry, HS., Gawel, ML., editors. New York, NY: Norton; 1953.

Tackett JL, Herzhoff K, Reardon KW, Smack AJ, Kushner SC. The relevance of informant discrepancies for the assessment of adolescent personality pathology. Clinical Psychology: Science and Practice. 2013; 20:378–392. http://dx.doi.org/10.1111/cpsp.12048.

*. Taft CT, O'Farrell TJ, Doron-LaMarca S, Panuzio J, Suvak MK, Gagnon DR, Murphy CM. Longitudinal risk factors for intimate partner violence among men in treatment for alcohol use disorders. Journal of Consulting and Clinical Psychology. 2010; 78:924–935. http://dx.doi.org/10.1037/a0021093. [PubMed: 20954758]

*. Taylor J, James LM, Reeves MD, Kistner JA. Borderline personality traits are associated with poor clinical and psychosocial functioning in delinquent boys. Journal of Psychopathology and Behavioral Assessment. 2009; 31:94–103. http://dx.doi.org/10.1007/s10862-008-9097-x.

Tracey TJG, Rounds J, Gurtman M. Examination of the general factor with the interpersonal circumplex structure: Application to the Inventory of Interpersonal Problems. Multivariate Behavioral Research. 1996; 31:441–466. http://dx.doi.org/10.1207/s15327906mbr3104_3. [PubMed: 26788593]

Trobst KK. An interpersonal conceptualization and quantification of social support transactions. Personality and Social Psychology Bulletin. 2000; 26:971–986. http://dx.doi.org/10.1177/01461672002610007.

Trull, TJ., Carpenter, RW., Widiger, TA. Personality disorders. In: Weiner, IB.Stricker, G., Widiger, TA., editors. Handbook of psychology: Vol. 8. Clinical psychology. 2. Hoboken, NJ: Wiley; 2013. p. 94-120.

Trull TJ, Durrett CA. Categorical and dimensional models of personality disorder. Annual Review of Clinical Psychology. 2005; 1:355–380. http://dx.doi.org/10.1146/annurev.clinpsy.1.102803.144009.

Trull TJ, Jahng S, Tomko RL, Wood PK, Sher KJ. Revised NESARC personality disorder diagnoses: Gender, prevalence, and comorbidity with substance dependence disorders. Journal of Personality Disorders. 2010; 24:412–426. http://dx.doi.org/10.1521/pedi.2010.24.4.412. [PubMed: 20695803]

Ullrich S, Farrington DP, Coid JW. Dimensions of *DSM-IV* personality disorders and life-success. Journal of Personality Disorders. 2007; 21:657–663. http://dx.doi.org/10.1521/pedi.2007.21.6.657. [PubMed: 18072866]

van Asselt ADI, Dirksen CD, Arntz A, Severens JL. The cost of borderline personality disorder: Societal cost of illness in BPD-patients. European Psychiatry. 2007; 22:354–361. http://dx.doi.org/10.1016/j.eurpsy.2007.04.001. [PubMed: 17544636]

*. Varley Thornton AJ, Graham-Kevan N, Archer J. Adaptive and maladaptive personality traits as predictors of violent and nonviolent offending behavior in men and women. Aggressive Behavior. 2010; 36:177–186. [PubMed: 20213653]

Vittengl JR, Clark LA, Jarrett RB. Interpersonal problems, personality pathology, and social adjustment after cognitive therapy for depression. Psychological Assessment. 2003; 15:29–40. http://dx.doi.org/10.1037/1040-3590.15.1.29. [PubMed: 12674722]

*. Wang Y, Yeh YH, Tsang SM, Liu WH, Shi HS, Li Z, Chan RCK. Social functioning in Chinese college students with and without schizotypal personality traits: An exploratory study of the Chinese version of the First Episode Social Functioning Scale. PLoS ONE. 2013; 8:e61115. http://dx.doi.org/10.1371/journal.pone.0061115. [PubMed: 23690922]

*. Weinstein Y, Gleason ME, Oltmanns TF. Borderline but not antisocial personality disorder symptoms are related to self-reported partner aggression in late middle-age. Journal of Abnormal Psychology. 2012; 121:692–698. http://dx.doi.org/10.1037/a0028994. [PubMed: 22732005]

Westen D. Divergences between clinical and research methods for assessing personality disorders: Implications for research and the evolution of axis II. The American Journal of Psychiatry. 1997; 154:895–903. http://dx.doi.org/10.1176/ajp.154.7.895. [PubMed: 9210738]

*. Westphal M, Olfson M, Bravova M, Gameroff MJ, Gross R, Wickramaratne P, Neria Y. Borderline personality disorder, exposure to interpersonal trauma, and psychiatric comorbidity in urban primary care patients. Psychiatry: Interpersonal and Biological Processes. 2013; 76:365–380. http://dx.doi.org/10.1521/psyc.2013.76.4.365.

Widiger, TA. Official classification systems. In: Livesley, WJ., editor. Handbook of personality disorders. New York, NY: Guilford Press; 2001. p. 60-83.

Widiger, TA. Historical developments and current issues. In: Widiger, TA., editor. The Oxford handbook of personality disorders. New York, NY: Oxford University Press; 2012. p. 13-34.http://dx.doi.org/10.1093/oxfordhb/9780199735013.001.0001

Widiger TA. A postmortem and future look at the personality disorders in. *DSM-5*. Personality Disorders: Theory, Research, and Treatment. 2013; 4:382–387. http://dx.doi.org/10.1037/per0000030.

Widiger, TA., Coker, LA. Assessing personality disorders. In: Butcher, JN., editor. Clinical personality assessment: Practical approaches. 2. Vol. 2. New York, NY: Oxford University Press; 2002. p. 407-434.

Widiger, TA., Hagemoser, S. Personality disorders and the interpersonal circumplex. In: Plutchik, R., Conte, HR., editors. Circumplex models of personality and emotions. Washington, DC: American Psychological Association; 1997. p. 299-325.http://dx.doi.org/10.1037/10261-013

Widiger TA, Samuel DB. Diagnostic categories or dimensions? A question for the *Diagnostic And Statistical Manual Of Mental Disorders*, fifth ed. Journal of Abnormal Psychology. 2005; 114:494–504. http://dx.doi.org/10.1037/0021-843X.114.4.494. [PubMed: 16351373]

Widiger TA, Simonsen E, Krueger R, Livesley WJ, Verheul R. Personality disorder research agenda for the DSM-V. Journal of Personality Disorders. 2005; 19:315–338. http://dx.doi.org/10.1521/pedi.2005.19.3.315. [PubMed: 16175740]

Widiger TA, Trull TJ. Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. American Psychologist. 2007; 62:71–83. http://dx.doi.org/10.1037/0003-066X.62.2.71. [PubMed: 17324033]

Wiggins JS. A psychological taxonomy of trait-descriptive terms: The interpersonal domain. Journal of Personality and Social Psychology. 1979; 37:395–412. http://dx.doi.org/10.1037/0022-3514.37.3.395.

Wiggins JS, Trapnell P, Phillips N. Psychometric and Geometric Characteristics of the Revised Interpersonal Adjective Scales (IAS-R). Multivariate Behavioral Research. 1988; 23:517–530. http://dx.doi.org/10.1207/s15327906mbr2304_8. [PubMed: 26761163]

Wiggins, JS., Trobst, KK. When is a circumplex an “interpersonal circumplex”? The case of supportive actions. In: Plutchik, R., Conte, HR., editors. Circumplex models of personality and emotions. Washington, DC: American Psychological Association; 1997. p. 57-80.http://dx.doi.org/10.1037/10261-003

*. Wilkinson-Ryan T, Westen D. Identity disturbance in borderline personality disorder: An empirical investigation. The American Journal of Psychiatry. 2000; 157:528–541. http://dx.doi.org/10.1176/appi.ajp.157.4.528. [PubMed: 10739411]

Williams TF, Simms LJ. Personality disorder models and their coverage of interpersonal problems. Personality Disorders: Theory, Research, and Treatment. 2016; 7:15–27. http://dx.doi.org/10.1037/per0000140.

Williams TF, Thomas KM, Donnellan MB, Hopwood CJ. The aversive interpersonal behaviors associated with pathological personality traits. Journal of Personality Disorders. 2014; 28:824–840. http://dx.doi.org/10.1521/pedi_2014_28_139. [PubMed: 24845225]

*. Wilson S, Durbin CE. Parental personality disorder symptoms are associated with dysfunctional parent-child interactions during early childhood: A multilevel modeling analysis. Personality Disorders: Theory, Research, and Treatment. 2012; 3:55–65. http://dx.doi.org/10.1037/a0024245.

Wilson S, Revelle W, Stroud CB, Durbin CE. A confirmatory bifactor analysis of the Inventory of Interpersonal Problems—Circumplex and associations of interpersonal traits across multiple relationship contexts and measures. Psychological Assessment. 2013; 25:353–365. http://dx.doi.org/10.1037/a0030989. [PubMed: 23244638]

Wright AGC, Hallquist MN, Morse JQ, Scott LN, Stepp SD, Nolf KA, Pilkonis PA. Clarifying interpersonal heterogeneity in borderline personality disorder using latent mixture modeling. Journal of Personality Disorders. 2013; 27:125–143. http://dx.doi.org/10.1521/pedi.2013.27.2.125. [PubMed: 23514179]

Wright AGC, Pincus AL, Conroy DE, Hilsenroth MJ. Integrating methods to optimize circumplex description and comparison of groups. Journal of Personality Assessment. 2009; 91:311–322. http://dx.doi.org/10.1080/00223890902935696. [PubMed: 20017060]

Wright AGC, Pincus AL, Hopwood CJ, Thomas KM, Markon KE, Krueger RF. An interpersonal analysis of pathological personality traits in *DSM-5*. Assessment. 2012; 19:263–275. http://dx.doi.org/10.1177/1073191112446657. [PubMed: 22589411]

Wright AGC, Simms LJ. Stability and fluctuation of personality disorder features in daily life. Journal of Abnormal Psychology. 2016; 125:641–656. http://dx.doi.org/10.1037/abn0000169. [PubMed: 27196437]

*. Wymbs B, Molina B, Pelham W, Cheong J, Gnagy E, Belendiuk K, Waschbusch D. Risk of intimate partner violence among young adult males with childhood ADHD. Journal of Attention Disorders. 2012; 16:373–383. http://dx.doi.org/10.1177/1087054710389987. [PubMed: 22044962]

Zanarini MC, Frankenburg FR, Hennen J, Reich DB, Silk KR. The McLean Study of Adult Development (MSAD): Overview and implications of the first six years of prospective follow-up. Journal of Personality Disorders. 2005; 19:505–523. http://dx.doi.org/10.1521/pedi.2005.19.5.505. [PubMed: 16274279]

Zanarini MC, Frankenburg FR, Reich DB, Fitzmaurice G. The 10-year course of psychosocial functioning among patients with borderline personality disorder and axis II comparison subjects. Acta Psychiatrica Scandinavica. 2010; 122:103–109. http://dx.doi.org/10.1111/j.1600-0447.2010.01543.x. [PubMed: 20199493]

Zanarini MC, Williams AA, Lewis RE, Reich RB, Vera SC, Marino MF, Frankenburg FR. Reported pathological childhood experiences associated with the development of borderline personality disorder. The American Journal of Psychiatry. 1997; 154:1101–1106. http://dx.doi.org/10.1176/ajp.154.8.1101. [PubMed: 9247396]

Zimmerman M. Diagnosing personality disorders. A review of issues and research methods. Archives of General Psychiatry. 1994; 51:225–245. http://dx.doi.org/10.1001/archpsyc.1994.03950030061006. [PubMed: 8122959]

Zimmerman M. Is there adequate empirical justification for radically revising the personality disorders section for *DSM-5*? Personality Disorders: Theory, Research, and Treatment. 2012; 3:444–457. http://dx.doi.org/10.1037/a0022108.

Zimmermann J, Wright AGC. Beyond description in interpersonal construct validation: Methodological advances in the circumplex structural summary approach. Assessment. 2017; 24:3–23. http://dx.doi.org/10.1177/1073191115621795. [PubMed: 26685192]

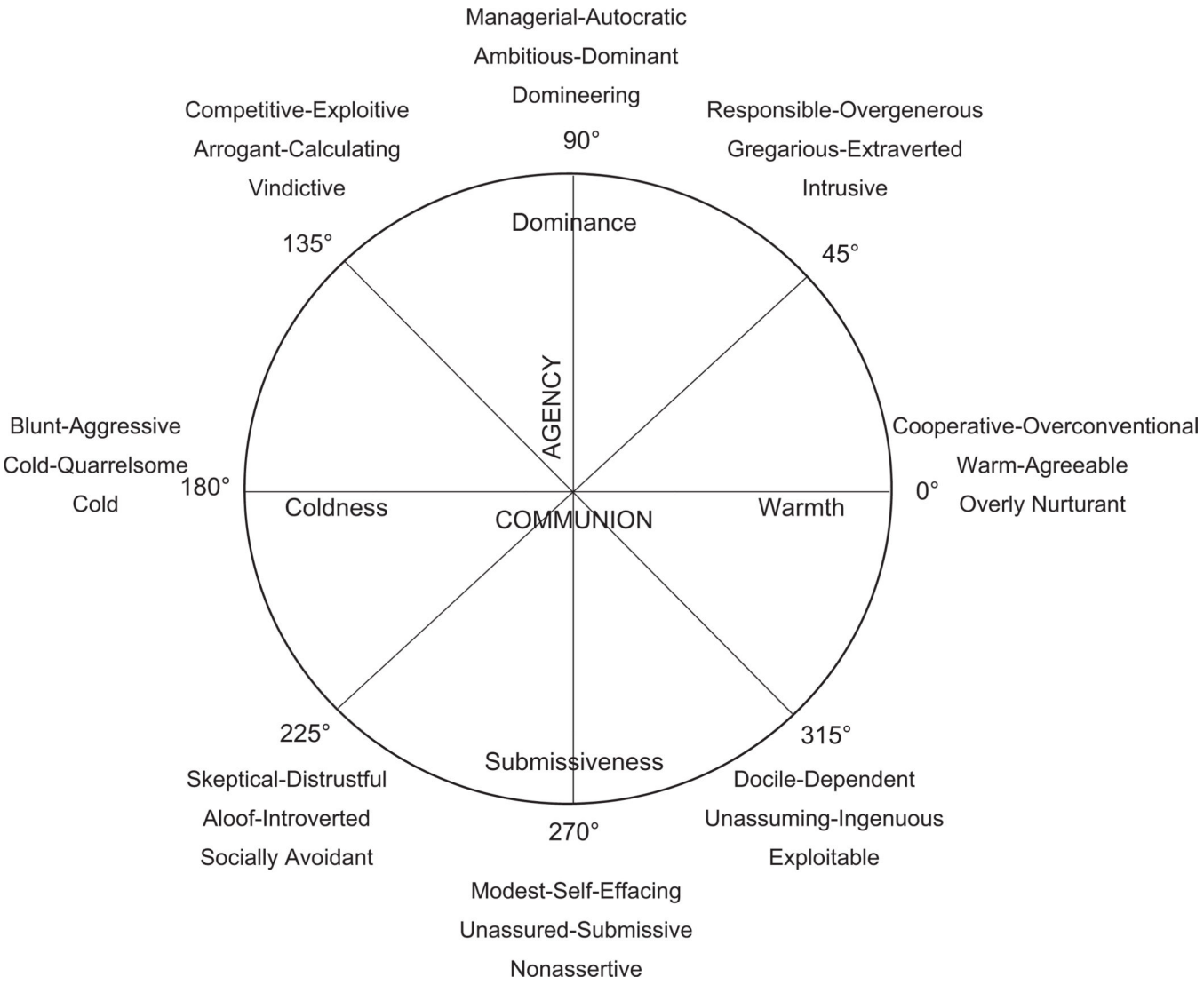

Figure 1.

Theoretical circumplex structure of interpersonal behavior, with octants reflecting eight interpersonal traits with subscale names for common interpersonal circumplex measures.

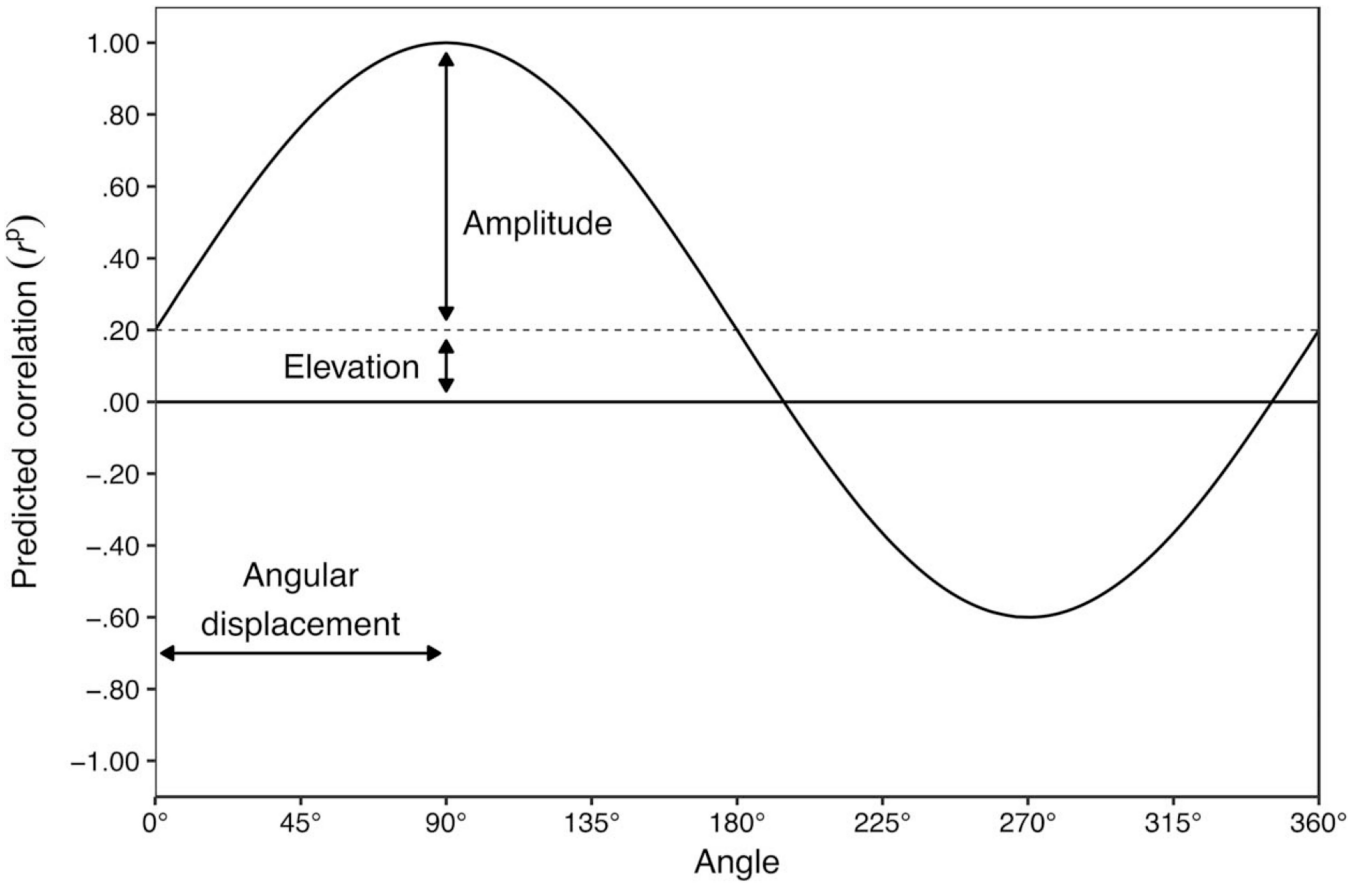

Figure 2.

Theoretical interpersonal circumplex profile. Structural summary parameters for the predicted correlations between interpersonal traits and an external construct include elevation (the average correlation with interpersonal style), amplitude (difference between the average correlation and the peak correlation of the profile), and angular displacement (the angular distance from 0° to the peak correlation of the profile).

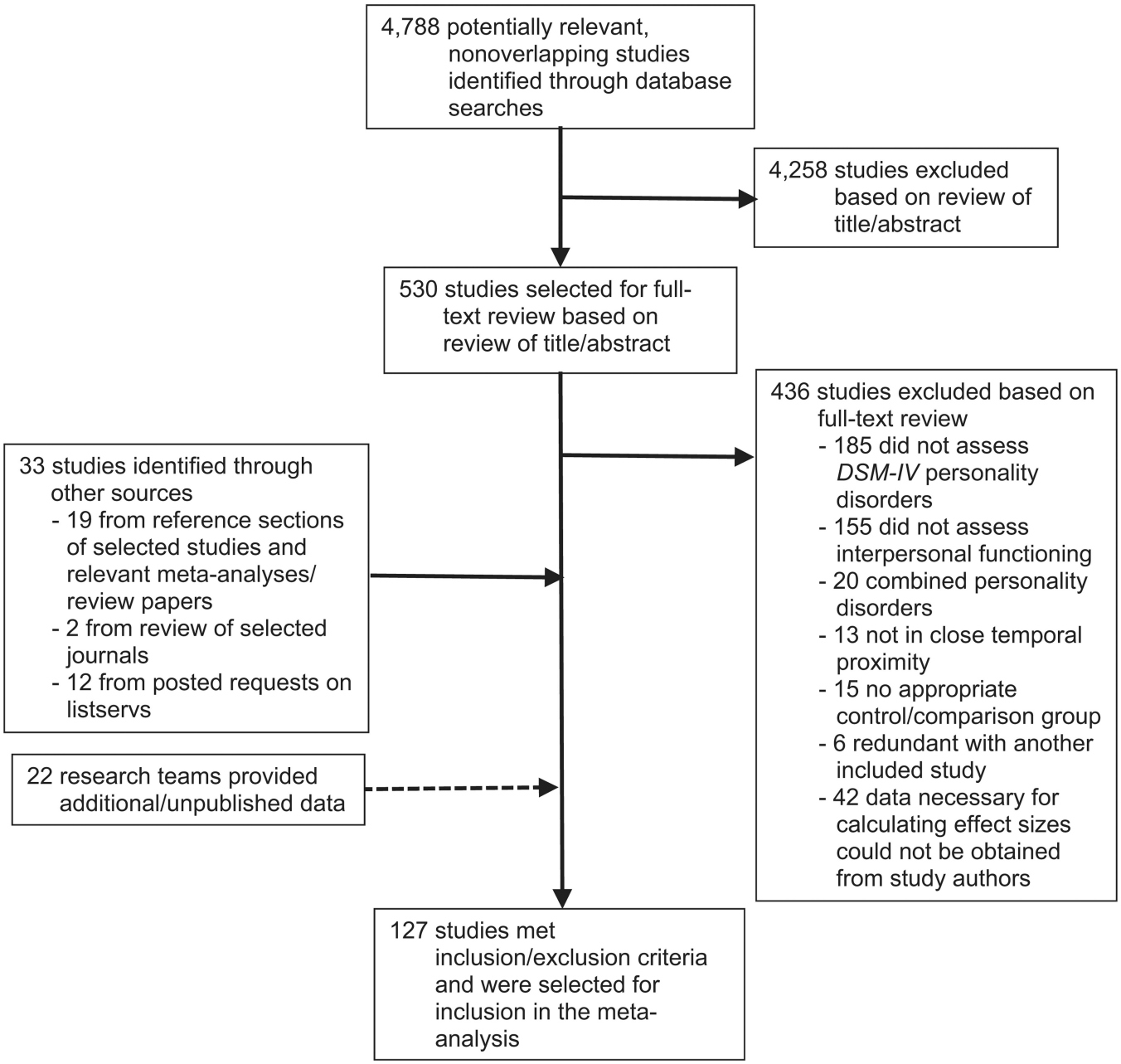

Figure 3.
Flow diagram for the literature search.

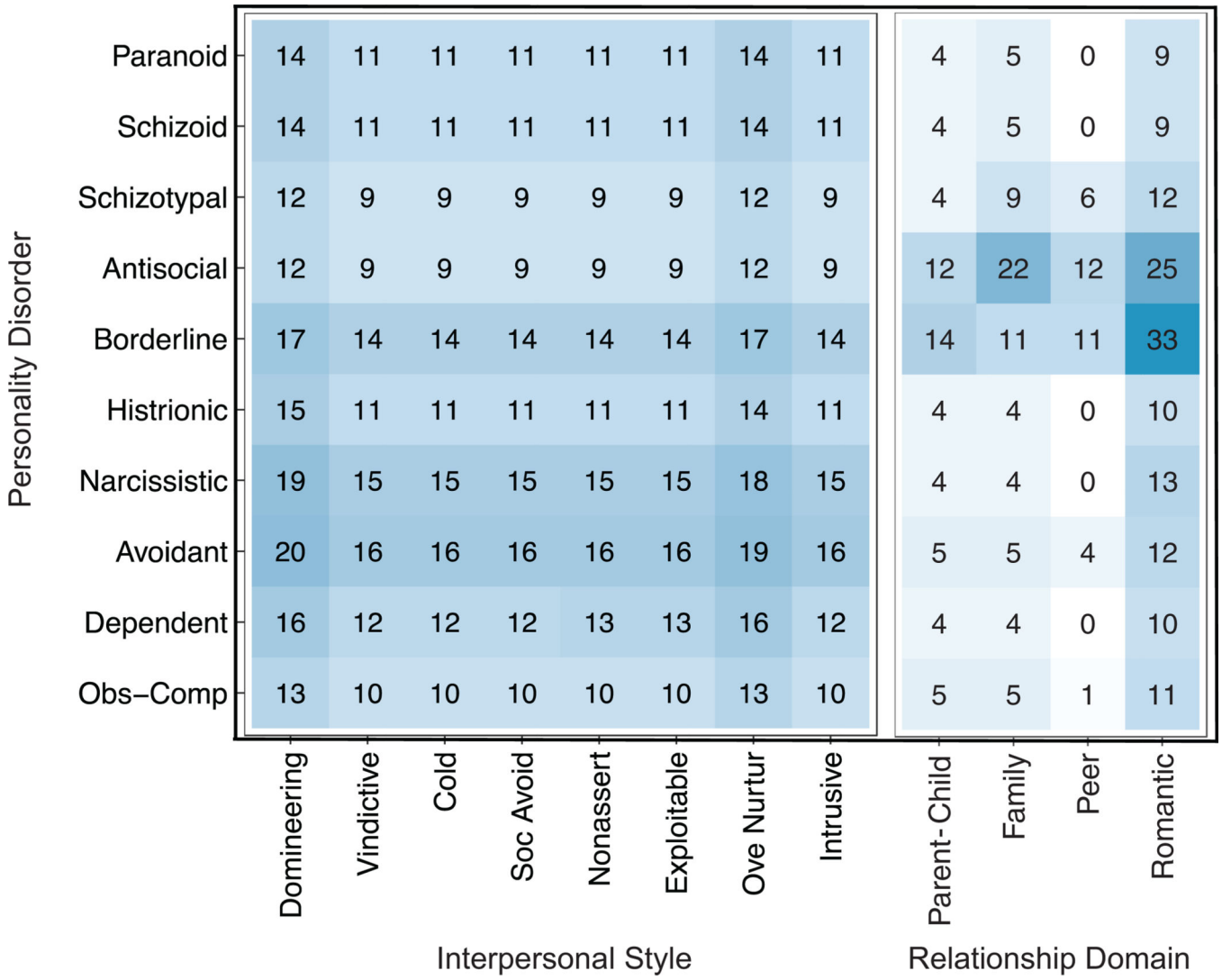

Figure 4.

Heatmap of number of studies (*k*) in each meta-analysis of associations between personality disorders and interpersonal functioning. Obs-Comp = obsessive-compulsive. Soc Avoid = Socially Avoidant. Nonassert = Nonassertive. Ove Nurtur = Overly Nurturant. The *k* for each meta-analysis is given in each cell of the heatmap, with darker shading indicating a larger number of studies. See the online article for the color version of this figure.

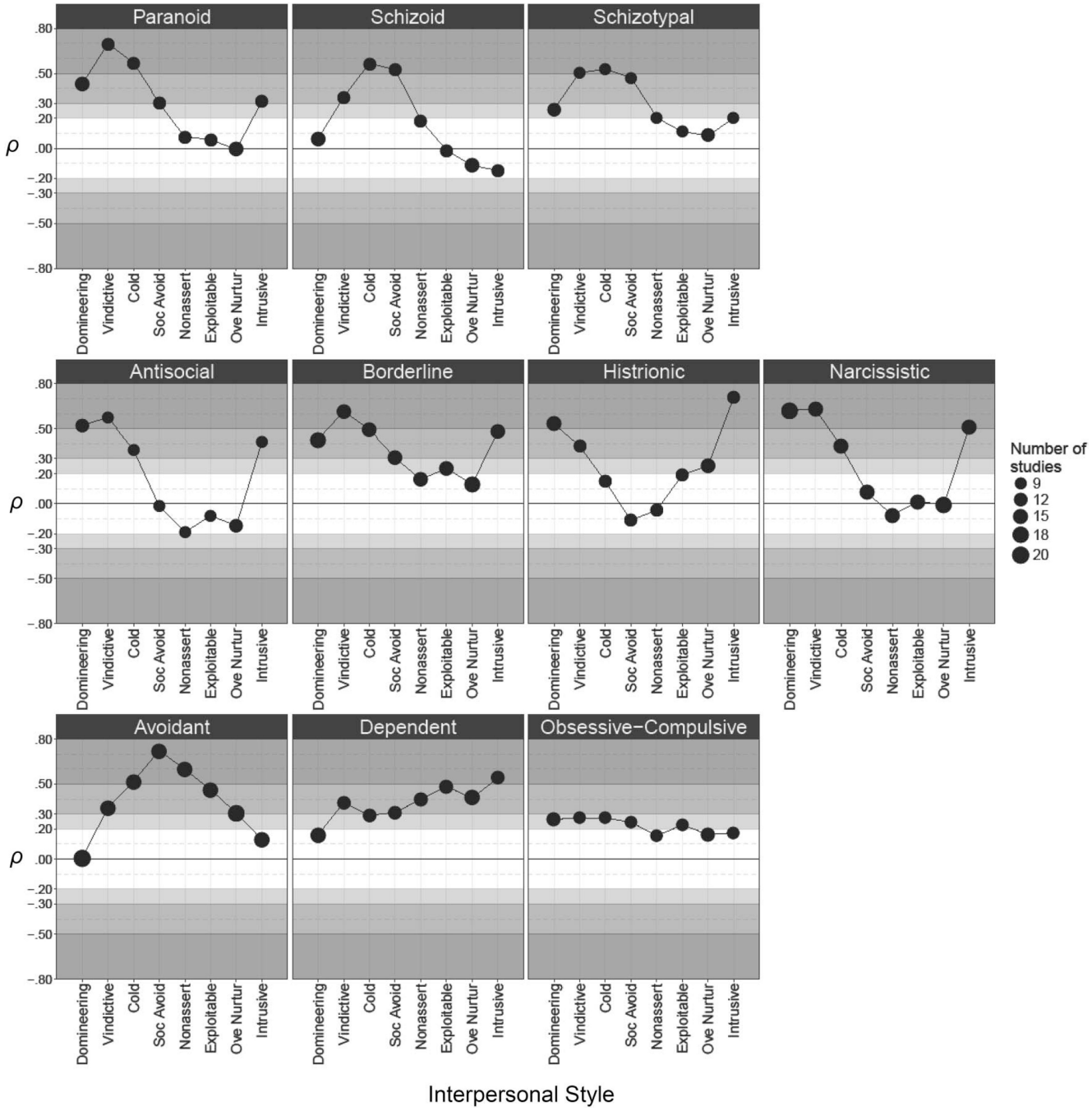

Figure 5.

Results of meta-analyses (ρ = mean population effect sizes corrected for sampling error and measurement unreliability) examining associations between each personality disorder and interpersonal style. Soc Avoid = Socially Avoidant. Nonassert = Nonassertive. Ove Nurtur = Overly Nurturant. Shaded horizontal areas represent no effect (ρ = .00), or modest (ρ = |.20|), moderate (ρ = |.30|), and large (ρ = |.50|) effect sizes. The number of studies (*k*) for

each meta-analysis is proportional to the area of its marker, with larger markers indicating a larger number of studies.

Table 1

Description of DSM Personality Disorders

Personality disorder	Description
Paranoid	Pervasive pattern of distrust and suspiciousness of others
Schizoid	Pervasive pattern of detachment from social relationships; restricted range of emotional expression in interpersonal interactions
Schizotypal	Pervasive pattern of odd, eccentric behavior or thinking; perceptual distortions; discomfort in interpersonal interactions
Antisocial	Pervasive pattern of disregard for and violation of the rights of others
Borderline	Pervasive pattern of instability in interpersonal interactions, sense of self, and affect; marked impulsivity
Histrionic	Pervasive pattern of excessive yet shallow emotionality and attention-seeking
Narcissistic	Pervasive pattern of grandiosity, need for admiration, and lack of empathy
Avoidant	Pervasive pattern of inhibition and feelings of inadequacy in interpersonal interactions; hypersensitivity to negative evaluation
Dependent	Pervasive and excessive need to be taken care of; dependence on and submission to others
Obsessive-Compulsive	Pervasive pattern of preoccupation with orderliness, perfection, morality, and control

Table 2

Descriptions of Maladaptive Interpersonal Traits in the Interpersonal Circumplex

Interpersonal style	Description
Domineering	Tendency to control, manipulate, be aggressive toward, or try to change others
Vindictive	Tendency toward distrust and suspicion of others; an inability to care about the needs and happiness of others
Cold	Tendency to have difficulty expressing affection toward or feeling love for others; an inability to be generous to, get along with, or forgive others
Socially Avoidant	Tendency to feel anxious and embarrassed with others; difficulty expressing feelings and socializing with others
Nonassertive	Tendency to have difficulty expressing needs, acting authoritatively, or being firm and assertive with others
Exploitable	Tendency to have difficulty feeling and expressing anger to others; gullible and easily taken advantage of by others
Overly Nurturant	Tendency to try to please others; overly generous to, trusting of, caring toward, and permissive of others
Intrusive	Tendency toward inappropriate self-disclosure and attention-seeking; difficulty being alone

Table 3

Summary of Meta-Analytic Results for Associations Between Personality Disorders and Interpersonal Style

Personality disorder-interpersonal style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Paranoid						
Domineering	14	3,996	.31	**.44**	.03, .86	.27, .62
Vindictive	11	3,093	.51	**.72**	.50, .94	.60, .84
Cold	11	3,093	.42	**.59**	.48, .70	.51, .66
Socially Avoidant	11	3,093	.22	**.31**	.18, .45	.23, .39
Nonassertive	11	3,094	.06	.08	−.00, .16	.02, .14
Exploitable	11	3,092	.04	.06	−.12, .24	−.04, .16
Overly Nurturant	14	3,998	.00	−.01	−.26, .25	−.12, .11
Intrusive	11	3,094	.23	**.33**	.04, .62	.19, .47
Schizoid						
Domineering	14	3,776	.05	.06	−.34, .46	−.11, .23
Vindictive	11	2,873	.25	**.34**	.03, .64	.19, .48
Cold	11	2,873	.42	**.56**	.22, .89	.39, .72
Socially Avoidant	11	2,873	.39	**.52**	.21, .83	.36, .67
Nonassertive	11	2,874	.14	.18	−.02, .35	.09, .27
Exploitable	11	2,872	−.01	−.01	−.17, .15	−.10, .07
Overly Nurturant	14	3,777	−.08	−.11	−.35, .12	−.22, −.01
Intrusive	11	2,874	−.11	−.14	−.29, .00	−.23, −.06
Schizotypal						
Domineering	12	3,523	.20	**.27**	.11, .65	.09, .44
Vindictive	9	2,620	.39	**.52**	.23, .82	.36, .68
Cold	9	2,620	.42	**.55**	.20, .90	.36, .74
Socially Avoidant	9	2,620	.38	**.49**	.23, .75	.35, .63
Nonassertive	9	2,622	.17	**.21**	.11, .32	.14, .29
Exploitable	9	2,619	.09	.12	−.02, .26	.03, .20
Overly Nurturant	12	3,525	.07	.09	−.07, .25	.01, .17
Intrusive	9	2,621	.16	**.21**	.09, .33	.13, .29
Antisocial						

Personality disorder-interpersonal style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Domineering	12	3,521	.41	**.55**	.25, .85	.41, .69
Vindictive	9	2,618	.45	**.61**	.38, .84	.48, .74
Cold	9	2,618	.29	**.38**	.25, .51	.30, .46
Socially Avoidant	9	2,618	−.01	−.01	−.18, .15	−.11, .08
Nonassertive	9	2,619	−.15	−.20	−.44, .04	−.33, −.07
Exploitable	9	2,617	−.06	−.08	−.28, .11	−.20, .03
Overly Nurturant	12	3,522	−.11	−.15	−.38, .08	−.26, −.04
Intrusive	9	2,619	.32	**.44**	.03, .85	.23, .66
Borderline						
Domineering	17	4,486	.33	**.45**	.04, .85	.29, .60
Vindictive	14	3,582	.48	**.64**	.42, .87	.54, .75
Cold	14	3,582	.39	**.52**	.34, .70	.43, .60
Socially Avoidant	14	3,582	.25	**.32**	.10, .54	.22, .42
Nonassertive	14	3,583	.13	.17	−.05, .39	.07, .27
Exploitable	14	3,581	.19	**.25**	.01, .49	.14, .36
Overly Nurturant	17	4,487	.10	.14	−.17, .45	.02, .26
Intrusive	14	3,583	.37	**.50**	.22, .78	.38, .63
Histrionic						
Domineering	15	4,092	.37	**.54**	.24, .85	.41, .67
Vindictive	11	3,093	.27	**.39**	.02, .76	.21, .57
Cold	11	3,093	.11	.15	−.17, .48	.00, .31
Socially Avoidant	11	3,093	−.08	−.11	−.33, .11	−.23, .00
Nonassertive	11	3,094	−.03	−.04	−.25, .17	−.15, .07
Exploitable	11	3,092	.14	**.20**	.04, .35	.11, .29
Overly Nurturant	14	3,998	.18	**.26**	.04, .47	.16, .35
Intrusive	11	3,094	.49	**.72**	.38, .99	.55, .88
Narcissistic						
Domineering	19	7,057	.45	**.62**	.33, .90	.51, .73
Vindictive	15	6,058	.46	**.63**	.35, .91	.51, .75
Cold	15	6,058	.28	**.38**	.18, .59	.30, .47
Socially Avoidant	15	6,058	.06	.08	−.10, .25	.00, .16

Personality disorder-interpersonal style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Nonassertive	15	6,059	−.05	−.07	−.30, .15	−.17, .02
Exploitable	15	6,057	.01	.02	−.12, .16	−.05, .08
Overly Nurturant	18	6,963	.00	−.01	−.21, .20	−.09, .07
Intrusive	15	6,059	.37	**.51**	.26, .77	.40, .62
Avoidant						
Domineering	20	5,455	.01	.01	−.38, .39	−.13, .14
Vindictive	16	4,456	.26	**.34**	.15, .54	.26, .43
Cold	16	4,456	.40	**.52**	.39, .65	.46, .59
Socially Avoidant	16	4,456	.57	**.73**	.56, .89	.65, .81
Nonassertive	16	4,457	.47	**.60**	.45, .75	.53, .67
Exploitable	16	4,455	.36	**.46**	.32, .61	.40, .53
Overly Nurturant	19	5,361	.24	**.31**	.02, .64	.19, .43
Intrusive	16	4,456	.10	.13	−.03, .29	.05, .20
Dependent						
Domineering	16	5,063	.12	.16	−.24, .57	.00, .32
Vindictive	12	4,064	.28	**.38**	.22, .54	.29, .46
Cold	12	4,064	.22	**.29**	.24, .35	.24, .34
Socially Avoidant	12	4,064	.23	**.31**	.15, .48	.23, .40
Nonassertive	13	4,151	.30	**.40**	.29, .52	.34, .47
Exploitable	13	4,148	.36	**.49**	.49, .49	.45, .53
Overly Nurturant	16	5,054	.30	**.41**	.26, .57	.34, .49
Intrusive	12	4,065	.39	**.55**	.33, .77	.44, .66
Obsessive-Compulsive						
Domineering	13	3,623	.19	**.28**	.11, .67	.11, .45
Vindictive	10	2,720	.19	**.29**	.07, .64	.11, .47
Cold	10	2,720	.20	**.29**	.00, .57	.14, .44
Socially Avoidant	10	2,720	.18	**.26**	.14, .38	.18, .34
Nonassertive	10	2,721	.11	.16	−.09, .24	.10, .23
Exploitable	10	2,719	.16	.24	−.04, .44	.13, .35
Overly Nurturant	13	3,625	.12	.17	−.02, .36	.08, .27
Intrusive	10	2,721	.12	.18	−.01, .37	.07, .29

Note. k = number of studies; N = total sample size; r = mean observed correlation; ρ = mean population effect size corrected for sampling error and measurement unreliability. ρs noted in bold indicate that the credibility and confidence intervals do not include zero.

Table 4

Structural Summary Statistics for Personality Disorders and Interpersonal Style

Personality disorder	*e*	*a*	δ	R^2
Paranoid	.32	.34	141.27°	.94
Schizoid	.17	.36	193.75°	.97
Schizotypal	.31	.24	171.31°	.94
Antisocial	.19	.43	114.22°	.93
Borderline	.37	.22	127.86°	.81
Histrionic	.26	.35	67.18°	.91
Narcissistic	.27	.38	109.86°	.94
Avoidant	.39	.31	243.43°	.94
Dependent	.38	.10	337.19°	.39
Obsessive-Compulsive	.23	.06	154.46°	.65

Note. *e* = elevation (the average correlation with interpersonal style). *a* = amplitude (difference between the average correlation and the peak correlation of the profile). δ = angular displacement (the angular distance from 0° to the peak correlation of the profile). R^2 = goodness-of-fit (how well the profile fits the predicted sinusoidal pattern).

Table 5

Summary of Meta-Analytic Results for Associations Between Personality Disorders and Interpersonal Functioning in Specific Relationship Domains

Personality disorder-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Paranoid						
Parent–child relationship	4	468	.16	**.23**	.07, .40	.05, .41
Family relationship	5	1,204	.21	**.31**	.31, .31	.24, .38
Peer relationship	0	—	—	—	—	—
Romantic relationship	9	2,959	.07	.09	−.14, .32	−.04, .22
Schizoid						
Parent–child relationship	4	469	.06	.09	.09, .09	−.03, .21
Family relationship	5	1,204	.12	**.18**	.18, .18	.13, .22
Peer relationship	0	—	—	—	—	—
Romantic relationship	9	2,959	.03	.04	−.09, .17	−.04, .12
Schizotypal						
Parent–child relationship	4	462	.23	**.31**	.18, .44	.15, .47
Family relationship	9	1,650	.26	**.35**	.21, .49	.25, .45
Peer relationship	6	8,339	.39	**.51**	.51, .51	.48, .54
Romantic relationship	12	4,893	.02	.03	−.21, .27	−.08, .14
Antisocial						
Parent–child relationship	12	2,622	.09	.12	.12, .12	−.07, .17
Family relationship	22	9,593	.17	**.23**	.06, .41	.17, .30
Peer relationship	12	7,556	.33	**.43**	.15, .99	.17, .69
Romantic relationship	25	7,379	.09	.12	−.02, .26	.07, .17
Borderline						
Parent–child relationship	14	1,646	.17	**.22**	.15, .29	.15, .29
Family relationship	11	3,432	.25	**.34**	.25, .42	.27, .40
Peer relationship	11	3,289	.26	**.34**	.24, .43	.27, .40
Romantic relationship	33	13,290	.16	**.21**	.06, .48	.14, .29
Histrionic						
Parent–child relationship	4	469	−.05	−.07	−.31, .17	−.30, .16
Family relationship	4	1,119	.12	**.19**	.01, .37	.02, .35

Personality disorder-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Peer relationship	0	—	—	—	—	—
Romantic relationship	10	3,024	−.07	−.10	−.43, .23	−.27, .07
Narcissistic						
Parent–child relationship	4	469	.01	.02	.02, .02	−.08, .11
Family relationship	4	1,119	.09	.13	.13, .13	−.04, .21
Peer relationship	0	—	—	—	—	—
Romantic relationship	13	3,413	.09	.13	−.05, .30	.04, .22
Avoidant						
Parent-child relationship	5	723	.14	**.19**	.13, .24	.08, .29
Family relationship	5	1,374	.14	**.20**	.20, .20	.15, .24
Peer relationship	4	2,158	.41	**.53**	.37, .70	.39, .68
Romantic relationship	12	3,570	−.01	−.01	−.17, .15	−.09, .07
Dependent						
Parent–child relationship	4	469	.07	.10	.10, .10	−.02, .21
Family relationship	4	1,120	.17	**.24**	.15, .32	.13, .34
Peer relationship	0	—	—	—	—	—
Romantic relationship	10	3,024	−.10	−.14	−.51, .24	−.32, .05
Obsessive-Compulsive						
Parent–child relationship	5	719	−.07	−.10	−.22, .03	−.23, .04
Family relationship	5	1,370	.04	.06	.06, .06	−.04, .08
Peer relationship	1	250	.04	.06	—	—
Romantic relationship	11	3,448	−.07	−.10	−.29, .10	−.20, .01

Note. *k* = number of studies; *N* = total sample size; *r* = mean observed correlation; ρ = mean population effect size corrected for sampling error and measurement unreliability. ρs noted in bold indicate that the credibility and confidence intervals do not include zero. — indicates an insufficient number of studies to conduct meta-analysis.

Table 6

Associations Among Moderator Variables

Variable	PD method	Interp method	Age	Sex	Sample
PD method	—				
Interp method	**.14**	—			
Age	**.23**	**.14**	—		
Sex	.03	.06	**.11**	—	
Sample	.06	.05	.05	.08	—

Note. Uncertainty coefficients indicating the proportion of variance in each moderator variable that is accounted for by the other moderator variables. PD = personality disorder; Interp = interpersonal. Coefficients greater than .10, indicating more than 10% overlapping variance among moderator variables, are noted in bold.

Table 7

Summary of Meta-Analytic Results for Associations Between Personality Disorders and Interpersonal Style Broken Out by Moderator Variables

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Paranoid-Domineering						
PD method						
Self-report	8	1,428	.11	.16$_a$	.04, .28	−.02, .34
Other	7	2,669	.41	**.59**$_a$	.40, .77	.39, .79
Interpersonal method						
Self-report	11	2,661	.20	**.29**	.00, .57	.13, .44
Other	4	1,995	.35	**.50**	.00, .99	.10, .90
Sample sex						
Male	3	334	.23	**.33**	.06, .60	.03, .62
Female	11	3,740	.32	**.46**	.06, .87	.27, .66
Type of sample						
Non-clinical	6	2,314	.34	**.49**	.02, .97	.19, .80
Clinical	5	1,062	.32	**.46**	.23, .69	.28, .64
Paranoid-Vindictive						
PD method						
Self-report	6	642	.43	**.61**	.61, .61	.51, .72
Other	6	2,551	.52	**.74**	.49, .99	.56, .92
Interpersonal method						
Self-report	9	1,875	.42	**.60**$_a$	.60, .60	.50, .70
Other	2	1,218	.64	**.91**$_a$	.91, .91	.77, .99
Sample sex						
Male	2	216	.39	**.55**$_a$	.55, .55	.44, .66
Female	9	2,954	.52	**.74**$_a$	.56, .92	.61, .86
Type of sample						
Non-clinical	5	1,655	.57	**.82**	.65, .98	.66, .97
Clinical	4	944	.47	**.67**	.67, .67	.55, .79
Paranoid-Cold						
PD method						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	6	642	.40	**.57**	.57, .57	.47, .67
Other	6	2,551	.41	**.59**	.44, .73	.47, .70
Interpersonal method						
Self-report	9	1,875	.37	**.52**	.52, .52	.44, .69
Other	2	1,218	.48	**.68**	.68, .68	.64, .73
Sample sex						
Male	2	216	.32	**.46**	.46, .46	.31, .61
Female	9	2,954	.42	**.59**	.51, .67	.51, .67
Type of sample						
Non-clinical	5	1,655	.44	**.62**	.57, .68	.54, .71
Clinical	4	944	.42	**.60**	.60, .60	.50, .70
Paranoid-Socially Avoidant						
PD method						
Self-report	6	642	.25	**.35**	.23, .46	.22, .47
Other	6	2,551	.22	**.31**	.18, .44	.21, .41
Interpersonal method						
Self-report	9	1,875	.24	**.34**	.17, .51	.23, .45
Other	2	1,218	.20	**.28**	.28, .28	.26, .29
Sample sex						
Male	2	216	.14	**.20**	.20, .20	.02, .37
Female	9	2,954	.23	**.33**	.22, .43	.24, .41
Type of sample						
Non-clinical	5	1,655	.21	**.30**	.30, .30	.26, .34
Clinical	4	944	.28	**.39**	.21, .58	.22, .57
Paranoid-Nonassertive						
PD method						
Self-report	6	643	.09	.13	.05, .21	−.01, .25
Other	6	2,551	.05	.07	.01, .14	−.00, .14
Interpersonal method						
Self-report	9	1,876	.09	.13	.13, .13	−.06, .20
Other	2	1,218	.00	.00	.00, .00	−.00, .00

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Sample sex						
Male	2	216	.05	.07	.07, .07	−.03, .11
Female	9	2,955	.06	.08	−.01, .18	.01, .15
Type of sample						
Non-clinical	5	1,655	.02	.03	.03, .03	−.04, .09
Clinical	4	944	.13	.18	.18, .18	−.12, .24
Paranoid-Exploitable						
PD method						
Self-report	6	641	.11	.16	−.15, .47	−.07, .39
Other	6	2,551	.03	.04	−.01, .09	−.04, .12
Interpersonal method						
Self-report	9	1,874	.08	.11	−.07, .29	−.01, .23
Other	2	1,218	−.01	−.01	−.01, −.01	−.13, .10
Sample sex						
Male	2	216	.24	.35	−.02, .71	−.14, .83
Female	9	2,953	.03	.05	.05, .05	−.02, .11
Type of sample						
Non-clinical	5	1,655	.00	.00	.00, .00	−.06, .06
Clinical	4	944	.13	.18	−.06, .43	−.04, .41
Paranoid-Overly Nurturant						
PD method						
Self-report	8	1,430	−.06	−.09	−.44, .26	−.30, .12
Other	7	2,669	.04	.05	−.07, .17	−.05, .16
Interpersonal method						
Self-report	11	2,663	−.02	−.03	−.37, .32	−.20, .15
Other	4	1,995	−.04	−.06	−.15, .04	−.16, .04
Sample sex						
Male	3	334	.11	.16	.03, .29	−.05, .37
Female	11	3,742	.00	.00	−.22, .21	−.13, .12
Type of sample						
Non-clinical	6	2,314	−.04	−.05	−.20, .10	−.19, .09

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Clinical	5	1,062	.11	.16	−.01, .33	−.06, .33
Paranoid-Intrusive						
PD method						
Self-report	6	643	.09	.13$_a$	.10, .15	−.03, .28
Other	6	2,551	.26	**.38**$_a$	.15, .60	.19, .56
Interpersonal method						
Self-report	9	1,876	.12	.18$_a$	.18, .18	−.09, .26
Other	2	1,218	.39	**.57**$_a$	.57, .57	.34, .80
Sample sex						
Male	2	216	−.03	−.05$_a$	−.05, −.05	−.28, .18
Female	9	2,955	.25	**.36**$_a$	.36, .36	.23, .50
Type of sample						
Non-clinical	5	1,655	.32	**.47**$_a$	.29, .64	.28, .65
Clinical	4	944	.14	.20$_a$	.07, .33	−.00, .39
Schizoid-Domineering						
PD method						
Self-report	8	1,429	−.10	−.13	−.45, .19	−.35, .09
Other	7	2,448	.13	.18	−.09, .44	−.02, .38
Interpersonal method						
Self-report	10	2,288	−.07	−.09	−.48, .29	−.30, .11
Other	5	2,148	.08	.10	−.29, .50	−.19, .39
Sample sex						
Male	4	487	−.04	−.06	−.40, .29	−.36, .24
Female	10	3,367	.07	.09	−.28, .47	−.10, .29
Type of sample						
Non-clinical	6	2,314	.09	.12	−.27, .52	−.13, .38
Clinical	5	841	.02	.02	−.34, .39	−.25, .29
Schizoid-Vindictive						
PD method						
Self-report	6	643	.25	**.33**	.17, .50	.19, .48
Other	6	2,330	.25	**.33**	.00, .66	.12, .54

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Interpersonal method						
Self-report	8	1,502	.21	**.28**	.07, .49	.14, .42
Other	3	1,371	.30	**.40**	.05, .74	.07, .72
Sample sex						
Male	3	369	.01	$.02_a$	−.11, .14	−.26, .29
Female	8	2,581	.29	$\mathbf{.39}_a$	.39, .39	.26, .52
Type of sample						
Non-clinical	5	1,655	.33	**.44**	.44, .44	.35, .54
Clinical	4	723	.16	.22	−.16, .59	−.11, .54
Schizoid-Cold						
PD method						
Self-report	6	643	.42	**.56**	.51, .61	.45, .66
Other	6	2,330	.42	**.56**	.18, .93	.31, .80
Interpersonal method						
Self-report	8	1,502	.33	**.44**	.24, .63	.28, .59
Other	3	1,371	.52	**.69**	.40, .98	.38, .99
Sample sex						
Male	3	369	.18	$.24_a$	.04, .45	−.06, .55
Female	8	2,581	.45	$\mathbf{.60}_a$	.39, .80	.42, .77
Type of sample						
Non-clinical	5	1,655	.54	$\mathbf{.71}_a$	.71, .71	.59, .84
Clinical	4	723	.34	$\mathbf{.45}_a$	.19, .70	.19, .70
Schizoid-Socially Avoidant						
PD method						
Self-report	6	643	.29	**.38**	.38, .38	.28, .48
Other	6	2,330	.42	**.55**	.23, .87	.33, .77
Interpersonal method						
Self-report	8	1,502	.24	$\mathbf{.32}_a$	.32, .32	.20, .43
Other	3	1,371	.56	$\mathbf{.73}_a$	.73, .73	.58, .88
Sample sex						
Male	3	369	.22	**.29**	.29, .29	.20, .38

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Female	8	2,581	.41	**.54**	.27, .81	.36, .72
Type of sample						
Non-clinical	5	1,655	.51	**.66**$_a$	.50, .82	.50, .83
Clinical	4	723	.32	**.42**$_a$	.42, .42	.31, .54
Schizoid-Nonassertive						
PD method						
Self-report	6	644	.08	.10	.04, .16	−.01, .22
Other	6	2,330	.15	.20	.05, .35	−.08, .32
Interpersonal method						
Self-report	8	1,503	.06	.07$_a$	.07, .07	−.00, .15
Other	3	1,371	.23	**.30**$_a$	.30, .30	.19, .41
Sample sex						
Male	3	369	.21	**.27**	.04, .51	.02, .53
Female	8	2,582	.12	.16	−.06, .26	.08, .25
Type of sample						
Non-clinical	5	1,655	.16	.21	.10, .32	−.11, .31
Clinical	4	723	.16	.22	−.00, .43	.02, .41
Schizoid-Exploitable						
PD method						
Self-report	6	642	.03	.04	−.19, .28	−.14, .23
Other	6	2,330	−.02	−.03	−.13, .07	−.12, .06
Interpersonal method						
Self-report	8	1,501	.01	.02	−.15, .18	−.10, .13
Other	3	1,371	−.04	−.05	−.17, .08	−.18, .09
Sample sex						
Male	3	369	.15	**.19**$_a$	.19, .19	.00, .39
Female	8	2,580	−.03	−.04$_a$	−.04, −.04	−.13, .04
Type of sample						
Non-clinical	5	1,655	−.07	−.09$_a$	−.09, −.09	−.16, −.02
Clinical	4	723	.13	**.18**$_a$	.18, .18	.06, .30
Schizoid-Overly Nurturant						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
PD method						
Self-report	8	1,430	−.20	**−.27**$_a$	−.46, −.08	−.42, −.12
Other	7	2,448	−.01	−.02$_a$	−.02, −.02	−.10, .07
Interpersonal method						
Self-report	10	2,289	−.16	−.22	−.48, .04	−.37, −.07
Other	5	2,148	−.06	−.08	−.25, .09	−.22, .07
Sample sex						
Male	4	487	−.11	−.14	−.14, −.14	−.26, .03
Female	10	3,368	−.07	−.10	−.35, .15	−.23, .03
Type of sample						
Non-clinical	6	2,314	−.07	−.09	−.33, .15	−.25, .07
Clinical	5	841	−.07	−.10	−.21, .01	−.22, .02
Schizoid-Intrusive						
PD method						
Self-report	6	644	−.08	−.11	−.11, −.11	−.21, .01
Other	6	2,330	−.11	−.16	−.32, .00	−.27, −.04
Interpersonal method						
Self-report	8	1,503	−.06	−.08	−.08, −.08	−.16, .00
Other	3	1,371	−.16	−.22	−.34, −.09	−.37, .07
Sample sex						
Male	3	369	−.21	**−.29**	−.49, −.08	−.53, −.04
Female	8	2,582	−.08	−.11	−.11, −.11	−.18, .04
Type of sample						
Non-clinical	5	1,655	−.11	−.15	−.15, −.15	−.19, .10
Clinical	4	723	−.11	−.14	−.45, .16	−.40, .11
Schizotypal-Domineering						
PD method						
Self-report	7	1,329	.00	.00$_a$	.00, .00	−.17, .17
Other	5	2,195	.32	**.43**$_a$	.38, .48	.23, .63
Interpersonal method						
Self-report	9	2,188	.08	.11	−.18, .39	−.06, .28

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Other	4	1,995	.24	.32	−.08, .72	−.01, .64
Sample sex						
Male	3	334	.11	.15	.03, .26	−.05, .34
Female	9	3,267	.22	.29	−.08, .66	.09, .49
Type of sample						
Non-clinical	5	2,214	.24	.32	−.08, .71	.04, .59
Clinical	4	688	.20	.27	−.03, .57	.02, .52
Schizotypal-Vindictive						
PD method						
Self-report	5	543	.27	**.35**	.13, .58	.14, .57
Other	4	2,077	.43	**.57**	.33, .81	.34, .79
Interpersonal method						
Self-report	7	1,402	.28	**.37**$_a$	.37, .37	.24, .50
Other	2	1,218	.53	**.70**$_a$	.64, .76	.44, .96
Sample sex						
Male	2	216	.18	.24$_a$	.24, .24	−.04, .52
Female	7	2,481	.42	**.56**$_a$	.43, .69	.41, .71
Type of sample						
Non-clinical	4	1,555	.48	**.64**	.56, .72	.48, .81
Clinical	3	570	.28	**.37**	.11, .62	.07, .66
Schizotypal-Cold						
PD method						
Self-report	5	543	.30	**.40**	.21, .58	.21, .59
Other	4	2,077	.45	**.59**	.25, .93	.30, .88
Interpersonal method						
Self-report	7	1,402	.25	**.34**$_a$	.34, .34	.18, .49
Other	2	1,218	.60	**.80**$_a$	.80, .80	.61, .98
Sample sex						
Male	2	216	.33	**.44**	.44, .44	.38, .51
Female	7	2,481	.43	**.56**	.22, .91	.35, .78
Type of sample						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Non-clinical	4	1,555	.53	**.70**$_a$	.47, .94	.47, .93
Clinical	3	570	.35	**.46**$_a$	.46, .46	.33, .59
Schizotypal–Socially Avoidant						
PD method						
Self-report	5	543	.32	**.41**	.24, .58	.25, .57
Other	4	2,077	.39	**.51**	.25, .77	.29, .72
Interpersonal method						
Self-report	7	1,402	.25	**.33**$_a$	.33, .33	.20, .47
Other	2	1,218	.52	**.67**$_a$	.67, .67	.62, .72
Sample sex						
Male	2	216	.42	**.54**	.54, .54	.46, .62
Female	7	2,481	.38	**.49**	.22, .75	.32, .65
Type of sample						
Non-clinical	4	1,555	.46	**.60**	.43, .76	.43, .76
Clinical	3	570	.35	**.45**	.45, .45	.43, .47
Schizotypal-Nonassertive						
PD method						
Self-report	5	545	.17	.22	−.01, .43	.04, .40
Other	4	2,077	.16	.21	.17, .26	−.15, .28
Interpersonal method						
Self-report	7	1,404	.13	.17	−.05, .29	.07, .28
Other	2	1,218	.20	**.26**	.26, .26	.23, .30
Sample sex						
Male	2	216	.27	**.35**$_a$	.35, .35	.32, .37
Female	7	2,483	.16	**.21**$_a$	.15, .26	.12, .29
Type of sample						
Non-clinical	4	1,555	.18	**.23**	.12, .35	.12, .34
Clinical	3	570	.18	**.23**	.23, .23	.16, .31
Schizotypal-Exploitable						
PD method						
Self-report	5	542	.15	.20	−.05, .44	−.01, .40

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Other	4	2,077	.07	.10	.07, .13	−.02, .18
Interpersonal method						
Self-report	7	1,401	.13	.17	−.01, .33	.05, .29
Other	2	1,218	.04	.06	.06, .06	−.03, .09
Sample sex						
Male	2	216	.28	**.38**$_a$	.30, .45	.11, .64
Female	7	2,480	.07	.10$_a$	.10, .10	−.02, .17
Type of sample						
Non-clinical	4	1,555	.04	.06$_a$	.06, .06	−.02, .13
Clinical	3	570	.23	**.31**$_a$	.31, .31	.16, .45
Schizotypal-Overly Nurturant						
PD method						
Self-report	7	1,331	.01	.02	−.17, .20	−.12, .15
Other	5	2,195	.10	.13	.09, .18	−.05, .22
Interpersonal method						
Self-report	9	2,190	.00	.00	−.22, .22	−.14, .14
Other	4	1,995	.12	.17	.17, .17	−.09, .24
Sample sex						
Male	3	334	.10	.14	.06, .22	−.02, .30
Female	9	3,269	.07	.10	−.07, .26	.00, .20
Type of sample						
Non-clinical	5	2,214	.09	.11	.05, .18	−.04, .19
Clinical	4	688	.12	.17	.06, .27	−.04, .30
Schizotypal-Intrusive						
PD method						
Self-report	5	544	.11	.15	.15, .15	−.08, .22
Other	4	2,077	.17	**.23**	.09, .36	.10, .35
Interpersonal method						
Self-report	7	1,403	.11	.15	.15, .15	−.07, .23
Other	2	1,218	.21	**.28**	.21, .35	.14, .42
Sample sex						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Male	2	216	.07	.10$_a$	.10, .10	−.06, .13
Female	7	2,482	.17	**.23**$_a$	.17, .29	.15, .31
Type of sample						
Non-clinical	4	1,555	.20	**.27**	.27, .27	.20, .33
Clinical	3	570	.15	.20	.06, .34	−.03, .37
Antisocial-Domineering						
PD method						
Self-report	7	1,327	.25	**.35**$_a$	.35, .35	.25, .44
Other	5	2,195	.50	**.68**$_a$	.51, .85	.48, .87
Interpersonal method						
Self-report	9	2,186	.32	**.43**	.43, .43	.35, .51
Other	4	1,995	.46	**.62**	.26, .98	.32, .92
Sample sex						
Male	3	334	.24	**.33**	.33, .33	.20, .47
Female	9	3,265	.43	**.58**	.32, .83	.42, .74
Type of sample						
Non-clinical	5	2,214	.46	**.62**	.31, .93	.38, .86
Clinical	4	688	.28	**.38**	.38, .38	.28, .49
Antisocial-Vindictive						
PD method						
Self-report	5	541	.37	**.49**	.37, .61	.34, .64
Other	4	2,077	.48	**.64**	.43, .85	.45, .83
Interpersonal method						
Self-report	7	1,400	.33	**.44**$_a$	.44, .44	.36, .53
Other	2	1,218	.60	**.80**$_a$	.80, .80	.75, .85
Sample sex						
Male	2	216	.37	**.50**	.50, .50	.36, .64
Female	7	2,479	.46	**.61**	.38, .84	.46, .76
Type of sample						
Non-clinical	4	1,555	.53	**.71**$_a$	.57, .85	.53, .88
Clinical	3	570	.35	**.47**$_a$	.47, .47	.39, .56

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Antisocial-Cold						
PD method						
Self-report	5	541	.23	**.31**	.15, .46	.15, .46
Other	4	2,077	.30	**.40**	.31, .49	.30, .50
Interpersonal method						
Self-report	7	1,400	.22	**.29**$_a$	.29, .29	.21, .37
Other	2	1,218	.36	**.48**$_a$	.48, .48	.45, .52
Sample sex						
Male	2	216	.22	**.30**	.30, .30	.14, .46
Female	7	2,479	.29	**.38**	.25, .51	.29, .48
Type of sample						
Non-clinical	4	1,555	.31	**.42**	.29, .54	.29, .54
Clinical	3	570	.25	**.33**	.33, .33	.24, .43
Antisocial-Socially Avoidant						
PD method						
Self-report	5	541	.05	.06	−.08, .20	−.09, .21
Other	4	2,077	−.03	−.03	−.18, .11	−.17, .10
Interpersonal method						
Self-report	7	1,400	.08	.10	.10, .10	−.02, .18
Other	2	1,218	−.11	−.15	−.15, −.15	−.16, .13
Sample sex						
Male	2	216	.01	.01	.01, .01	−.02, .05
Female	7	2,479	−.01	−.01	−.19, .17	−.12, .10
Type of sample						
Non-clinical	4	1,555	−.09	−.11$_a$	−.11, −.11	−.18, .10
Clinical	3	570	.07	.10$_a$	.10, .10	−.00, .19
Antisocial-Nonassertive						
PD method						
Self-report	5	542	−.05	−.06	−.31, .19	−.28, .15
Other	4	2,077	−.18	**−.23**	−.41, −.05	−.40, −.06
Interpersonal method						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	7	1,401	−.03	−.04$_a$	−.04, −.04	−.16, .07
Other	2	1,218	−.29	**−.38**$_a$	−.38, −.38	−.40, −.36
Sample sex						
Male	2	216	−.01	−.01	−.01, −.01	−.23, .20
Female	7	2,480	−.16	−.21	−.41, .00	−.36, −.06
Type of sample						
Non-clinical	4	1,555	−.26	**−.34**$_a$	−.34, −.34	−.42, −.26
Clinical	3	570	−.01	−.02$_a$	−.02, −.02	−.13, .09
Antisocial-Exploitable						
PD method						
Self-report	5	540	.01	.01	−.33, .36	−.26, .29
Other	4	2,077	−.08	−.11	−.17, −.05	−.20, .01
Interpersonal method						
Self-report	7	1,399	.00	.00	−.18, .19	−.14, .15
Other	2	1,218	−.14	−.18	−.18, −.18	−.24, .12
Sample sex						
Male	2	216	.10	.14	−.22, .49	−.32, .59
Female	7	2,478	−.07	−.10	−.10, −.10	−.19, .00
Type of sample						
Non-clinical	4	1,555	−.13	−.18	−.18, −.18	−.23, .13
Clinical	3	570	.02	.02	−.21, .26	−.24, .29
Antisocial-Overly Nurturant						
PD method						
Self-report	7	1,328	−.11	−.15	−.36, .07	−.29, .00
Other	5	2,195	−.12	−.16	−.39, .08	−.33, .01
Interpersonal method						
Self-report	9	2,187	−.06	−.08	−.28, .12	−.21, .06
Other	4	1,995	−.20	**−.27**	−.27, −.27	−.35, −.20
Sample sex						
Male	3	334	−.02	−.03	−.31, .26	−.33, .27
Female	9	3,266	−.11	−.15	−.34, .04	−.27, −.04

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Type of sample						
Non-clinical	5	2,214	−.17	**−.23**	−.23, −.23	−.32, −.15
Clinical	4	688	−.05	−.06	−.32, .19	−.30, .17
Antisocial-Intrusive						
PD method						
Self-report	5	542	.10	.14$_a$	.14, .14	−.05, .34
Other	4	2,077	.38	**.52**$_a$	.21, .82	.22, .82
Interpersonal method						
Self-report	7	1,401	.13	.17$_a$	.17, .17	−.03, .31
Other	2	1,218	.55	**.75**$_a$	.75, .75	.58, .91
Sample sex						
Male	2	216	.03	.04$_a$	.04, .04	−.20, .29
Female	7	2,480	.35	**.48**$_a$	.21, .75	.25, .71
Type of sample						
Non-clinical	4	1,555	.45	**.62**$_a$	.62, .62	.36, .89
Clinical	3	570	.00	.00$_a$	.00, .00	−.08, .07
Borderline-Domineering						
PD method						
Self-report	10	2,121	.17	.23$_a$	−.09, .56	.02, .44
Other	8	2,465	.47	**.63**$_a$	.63, .63	.52, .74
Interpersonal method						
Self-report	14	3,150	.23	**.31**	.14, .76	.11, .51
Other	4	1,995	.36	**.48**	.09, .88	.17, .80
Sample sex						
Male	3	334	.27	**.36**	.15, .57	.12, .60
Female	14	4,229	.34	**.46**	.05, .87	.28, .63
Type of sample						
Non-clinical	8	3,006	.34	**.45**	.02, .88	.21, .69
Clinical	6	858	.36	**.48**	.27, .70	.32, .64
Borderline-Vindictive						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
PD method						
Self-report	8	1,335	.40	**.53**	.41, .64	.41, .64
Other	7	2,347	.53	**.70**	.51, .89	.56, .84
Interpersonal method						
Self-report	12	2,364	.42	**.55**$_a$	.45, .66	.45, .66
Other	2	1,218	.61	**.81**$_a$	.81, .81	.73, .89
Sample sex						
Male	2	216	.38	**.51**	.33, .68	.23, .78
Female	12	3,443	.49	**.65**	.46, .85	.55, .76
Type of sample						
Non-clinical	7	2,347	.51	**.67**	.48, .87	.54, .81
Clinical	5	740	.42	**.56**	.27, .85	.33, .79
Borderline-Cold						
PD method						
Self-report	8	1,335	.36	**.47**	.29, .65	.35, .59
Other	7	2,347	.40	**.53**	.36, .71	.41, .65
Interpersonal method						
Self-report	12	2,364	.36	**.48**	.28, .68	.37, .59
Other	2	1,218	.45	**.59**	.59, .59	.53, .64
Sample sex						
Male	2	216	.38	**.50**	.50, .50	.45, .56
Female	12	3,443	.39	**.52**	.33, .70	.42, .61
Type of sample						
Non-clinical	7	2,347	.40	**.52**	.36, .68	.41, .63
Clinical	5	740	.38	**.49**	.22, .76	.29, .70
Borderline-Socially Avoidant						
PD method						
Self-report	8	1,335	.30	**.38**	.29, .48	.29, .48
Other	7	2,347	.21	**.28**	.03, .52	.12, .44
Interpersonal method						
Self-report	12	2,364	.32	**.42**$_a$	.42, .42	.33, .51

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Other	2	1,218	.11	.14[a]	.14, .14	−.01, .27
Sample sex						
Male	2	216	.29	**.38**	.25, .50	.16, .59
Female	12	3,443	.25	**.33**	.12, .53	.23, .43
Type of sample						
Non-clinical	7	2,347	.20	**.26**	.16, .36	.16, .36
Clinical	5	740	.33	**.42**	.12, .72	.19, .66
Borderline-Nonassertive						
PD method						
Self-report	8	1,336	.20	**.26**	.16, .36	.16, .36
Other	7	2,347	.09	.11	−.10, .33	−.03, .26
Interpersonal method						
Self-report	12	2,365	.22	**.28**[a]	.28, .28	.21, .35
Other	2	1,218	−.03	−.04[a]	−.04, −.04	−.14, .07
Sample sex						
Male	2	216	.23	**.30**	.30, .30	.28, .32
Female	12	3,444	.13	.17	−.03, .36	.06, .27
Type of sample						
Non-clinical	7	2,347	.08	.10[a]	−.05, .25	−.02, .22
Clinical	5	740	.20	**.27**[a]	.12, .41	.11, .42
Borderline-Exploitable						
PD method						
Self-report	8	1,334	.24	**.31**	.05, .58	.15, .48
Other	7	2,347	.15	.20	−.00, .40	.06, .34
Interpersonal method						
Self-report	12	2,363	.25	**.34**[a]	.20, .48	.23, .45
Other	2	1,218	.06	.08[a]	.08, .08	−.06, .21
Sample sex						
Male	2	216	.39	**.51**	.27, .76	.15, .88
Female	12	3,442	.18	**.24**	.15, .33	.14, .34
Type of sample						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Non-clinical	7	2,347	.13	$.17_a$	.04, .30	−.04, .30
Clinical	5	740	.30	$\mathbf{.40}_a$	.18, .64	.19, .61
Borderline-Overly Nurturant						
PD method						
Self-report	10	2,122	.06	.08	−.28, .44	−.11, .27
Other	8	2,465	.15	.20	−.03, .42	.06, .33
Interpersonal method						
Self-report	14	3,151	.16	$.21_a$	−.05, .46	.07, .34
Other	4	1,995	−.07	$-.09_a$	−.18, .00	−.26, .08
Sample sex						
Male	3	334	.15	.21	−.07, .48	−.08, .49
Female	14	4,230	.10	.14	−.17, .45	.00, .27
Type of sample						
Non-clinical	8	3,006	.05	$.07_a$	−.14, .27	−.08, .21
Clinical	6	858	.23	$\mathbf{.31}_a$	.19, .42	.16, .45
Borderline-Intrusive						
PD method						
Self-report	8	1,336	.24	$\mathbf{.32}_a$	.10, .54	.15, .49
Other	7	2,347	.45	$\mathbf{.60}_a$	.60, .60	.49, .72
Interpersonal method						
Self-report	12	2,365	.28	$\mathbf{.38}_a$	.36, .41	.27, .50
Other	2	1,218	.54	$\mathbf{.73}_a$	.73, .73	.64, .82
Sample sex						
Male	2	216	.08	$.11_a$	−.10, .32	−.30, .52
Female	12	3,444	.39	$\mathbf{.53}_a$	.53, .53	.41, .65
Type of sample						
Non-clinical	7	2,347	.41	**.55**	.29, .81	.37, .73
Clinical	5	740	.25	**.34**	.14, .55	.15, .54
Histrionic-Domineering						
PD method						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	8	1,428	.39	**.57**	.25, .89	.38, .76
Other	8	2,765	.35	**.51**	.20, .81	.33, .69
Interpersonal method						
Self-report	12	2,757	.34	**.50**	.13, .87	.32, .68
Other	5	2,091	.45	**.65**	.44, .86	.48, .82
Sample sex						
Male	3	334	.20	**.30**	.30, .30	.20, .40
Female	12	3,836	.38	**.56**	.29, .82	.41, .70
Type of sample						
Non-clinical	7	2,410	.43	**.63**	.34, .92	.43, .83
Clinical	5	1,062	.27	**.39**	.39, .39	.30, .48
Histrionic-Vindictive						
PD method						
Self-report	6	642	.06	$.09_a$	−.10, .28	−.13, .31
Other	6	2,551	.31	$\mathbf{.45}_a$	.23, .68	.24, .67
Interpersonal method						
Self-report	9	1,875	.12	$.18_a$	.18, .18	−.06, .29
Other	2	1,218	.50	$\mathbf{.72}_a$	.72, .72	.70, .75
Sample sex						
Male	2	216	.21	**.30**	.30, .30	.22, .38
Female	9	2,954	.27	**.39**	.02, .76	.19, .59
Type of sample						
Non-clinical	5	1,655	.35	**.50**	.07, .93	.18, .82
Clinical	4	944	.19	**.28**	.28, .28	.17, .38
Histrionic-Cold						
PD method						
Self-report	6	642	−.13	$-.19_a$	−.47, .09	−.45, .08
Other	6	2,551	.16	$\mathbf{.23}_a$	.23, .23	.10, .36
Interpersonal method						
Self-report	9	1,875	.00	$.00_a$	−.13, .13	−.15, .16
Other	2	1,218	.27	$\mathbf{.39}_a$	.39, .39	.37, .41

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Sample sex						
Male	2	216	.08	.11	.11, .11	−.06, .17
Female	9	2,954	.11	.15	−.18, .48	−.03, .33
Type of sample						
Non-clinical	5	1,655	.13	.19	−.24, .62	−.12, .49
Clinical	4	944	.07	.09	.09, .09	−.00, .19
Histrionic-Socially Avoidant						
PD method						
Self-report	6	642	−.15	−.21	−.61, .20	−.48, .07
Other	6	2,551	−.07	−.09	−.20, .02	−.19, .01
Interpersonal method						
Self-report	9	1,875	−.06	−.09	−.35, .17	−.24, .06
Other	2	1,218	−.10	−.14	−.26, −.03	−.29, .01
Sample sex						
Male	2	216	.16	**.23**$_a$	.23, .23	.12, .34
Female	9	2,954	−.09	−.12$_a$	−.12, −.12	−.23, −.02
Type of sample						
Non-clinical	5	1,655	−.13	−.19	−.34, −.04	−.32, .05
Clinical	4	944	−.05	−.07	−.32, .17	−.29, .14
Histrionic-Nonassertive						
PD method						
Self-report	6	643	−.01	−.02	−.39, .36	−.27, .24
Other	6	2,551	−.03	−.05	−.18, .09	−.15, .05
Interpersonal method						
Self-report	9	1,876	.02	.02	−.16, .21	−.10, .15
Other	2	1,218	−.10	−.14	−.18, −.11	−.29, .00
Sample sex						
Male	2	216	.24	**.34**$_a$	.34, .34	.18, .49
Female	9	2,955	−.04	−.06$_a$	−.06, −.06	−.15, .04
Type of sample						
Non-clinical	5	1,655	−.10	−.14	−.14, −.14	−.23, .04

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Clinical	4	944	.02	.03	−.20, .26	−.19, .24
Histrionic-Exploitable						
PD method						
Self-report	6	641	.16	**.23**	.04, .41	.07, .38
Other	6	2,551	.13	.19	−.04, .33	.08, .29
Interpersonal method						
Self-report	9	1,874	.13	.18	−.06, .30	.09, .27
Other	2	1,218	.15	.22	.03, .41	−.01, .44
Sample sex						
Male	2	216	.27	**.39**$_a$	.39, .39	.30, .48
Female	9	2,953	.14	.20$_a$	.20, .20	−.13, .26
Type of sample						
Non-clinical	5	1,655	.15	.21	.21, .21	−.16, .27
Clinical	4	944	.08	.12	−.12, .36	−.09, .33
Histrionic-Overly Nurturant						
PD method						
Self-report	8	1,430	.30	**.43**$_a$	.43, .43	.32, .54
Other	7	2,669	.11	.16$_a$	.16, .16	−.07, .25
Interpersonal method						
Self-report	11	2,663	.27	**.39**$_a$	.23, .55	.27, .50
Other	4	1,995	.09	.13$_a$	.13, .13	−.05, .21
Sample sex						
Male	3	334	.24	**.35**	.08, .77	.06, .76
Female	11	3,742	.18	**.26**	.09, .42	.16, .35
Type of sample						
Non-clinical	6	2,314	.16	**.24**	.07, .40	.11, .36
Clinical	5	1,062	.13	.19	−.07, .46	−.01, .40
Histrionic-Intrusive						
PD method						
Self-report	6	643	.34	**.50**	.31, .68	.30, .69
Other	6	2,551	.52	**.76**	.49, .99	.55, .98

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Interpersonal method						
Self-report	9	1,876	.35	**.51**$_a$	.51, .51	.42, .61
Other	2	1,218	.70	**.99**$_a$	.99, .99	.93, .99
Sample sex						
Male	2	216	.21	**.30**$_a$	.30, .30	.09, .52
Female	9	2,955	.51	**.75**$_a$	.59, .90	.57, .92
Type of sample						
Non-clinical	5	1,655	.60	**.88**$_a$	.67, .99	.65, .99
Clinical	4	944	.35	**.52**$_a$	.52, .52	.39, .65
Narcissistic-Domineering						
PD method						
Self-report	13	4,767	.41	**.57**	.53, .60	.49, .64
Other	8	3,361	.55	**.76**	.35, .99	.52, .99
Interpersonal method						
Self-report	16	5,722	.40	**.55**	.45, .65	.46, .63
Other	6	3,061	.57	**.78**	.39, .99	.51, .99
Sample sex						
Male	3	334	.31	**.43**	.43, .43	.31, .55
Female	16	6,801	.45	**.62**	.36, .89	.51, .74
Type of sample						
Non-clinical	12	5,749	.47	**.65**	.37, .93	.52, .78
Clinical	4	688	.43	**.59**	.59, .59	.52, .66
Narcissistic-Vindictive						
PD method						
Self-report	11	3,981	.43	**.58**	.44, .72	.48, .68
Other	6	3,147	.56	**.76**	.40, .99	.52, .99
Interpersonal method						
Self-report	13	4,840	.40	**.54**$_a$	.54, .54	.44, .64
Other	3	2,188	.69	**.95**$_a$	.95, .95	.87, .99
Sample sex						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Male	2	216	.27	**.37**$_a$	.37, .37	.22, .52
Female	13	5,919	.46	**.63**$_a$	.40, .87	.50, .76
Type of sample						
Non-clinical	10	4,994	.49	**.67**	.41, .93	.53, .81
Clinical	3	570	.42	**.57**	.57, .57	.52, .62
Narcissistic-Cold						
PD method						
Self-report	11	3,981	.28	**.38**	.17, .59	.27, .49
Other	6	3,147	.32	**.43**	.24, .62	.30, .56
Interpersonal method						
Self-report	13	4,840	.26	**.35**	.17, .54	.25, .45
Other	3	2,188	.38	**.52**	.52, .52	.50, .54
Sample sex						
Male	2	216	.09	.12$_a$	.12, .12	−.03, .22
Female	13	5,919	.29	**.39**$_a$	.28, .50	.30, .48
Type of sample						
Non-clinical	10	4,994	.30	**.41**	.21, .61	.30, .52
Clinical	3	570	.26	**.35**	.35, .35	.26, .43
Narcissistic–Socially Avoidant						
PD method						
Self-report	11	3,981	.14	.19	.13, .25	−.10, .28
Other	6	3,147	−.05	−.06	−.06, −.06	−.16, .03
Interpersonal method						
Self-report	13	4,840	.13	.17	.17, .17	−.15, .25
Other	3	2,188	−.10	−.14	−.14, −.14	−.17, .10
Sample sex						
Male	2	216	.10	.14	.14, .14	−.09, .19
Female	13	5,919	.06	.08	−.09, .25	.00, .16
Type of sample						
Non-clinical	10	4,994	.05	.07	−.12, .25	−.03, .17
Clinical	3	570	.11	.15	.08, .21	−.01, .28

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Narcissistic-Nonassertive						
PD method						
Self-report	11	3,982	.05	.07$_a$	.07, .07	−.01, .15
Other	6	3,147	−.19	**−.26**$_a$	−.26, −.26	−.38, −.14
Interpersonal method						
Self-report	13	4,841	.04	.06$_a$	.06, .06	−.02, .13
Other	3	2,188	−.27	**−.36**$_a$	−.36, −.36	−.39, −.33
Sample sex						
Male	2	216	.08	.11	.11, .11	−.00, .22
Female	13	5,920	−.06	−.08	−.26, .11	−.18, .02
Type of sample						
Non-clinical	10	4,994	−.07	−.09	−.32, .14	−.21, .03
Clinical	3	570	−.01	−.01	−.15, .12	−.18, .15
Narcissistic-Exploitable						
PD method						
Self-report	11	3,980	.08	.11	.11, .11	−.04, .18
Other	6	3,147	−.09	−.12	−.12, −.12	−.21, .14
Interpersonal method						
Self-report	13	4,839	.07	.10	.10, .10	−.04, .15
Other	3	2,188	−.14	−.18	−.18, −.18	−.26, .11
Sample sex						
Male	2	216	.19	**.26**$_a$	.21, .32	.01, .52
Female	13	5,918	.01	.00$_a$	.01, .01	−.05, .07
Type of sample						
Non-clinical	10	4,994	.00	.01	−.11, .12	−.07, .08
Clinical	3	570	.06	.08	−.17, .34	−.17, .34
Narcissistic-Overly Nurturant						
PD method						
Self-report	13	4,769	.06	.09	−.01, .18	.01, .17
Other	7	3,265	−.09	−.13	−.23, −.03	−.24, .10
Interpersonal method						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	15	5,628	.06	.08	.01, .14	−.00, .15
Other	5	2,965	−.13	−.17	−.17, −.17	−.25, .09
Sample sex						
Male	3	334	.13	.17	−.16, .51	−.17, .52
Female	15	6,707	−.01	−.01	−.16, .14	−.09, .07
Type of sample						
Non-clinical	11	5,653	−.02	−.03	−.21, .15	−.12, .07
Clinical	4	688	.05	.07	−.21, .35	−.17, .32
Narcissistic-Intrusive						
PD method						
Self-report	11	3,982	.31	**.43**	.43, .43	.36, .51
Other	6	3,147	.48	**.67**	.36, .98	.45, .89
Interpersonal method						
Self-report	13	4,841	.29	**.41**$_a$	.41, .41	.34, .48
Other	3	2,188	.60	**.84**$_a$	.84, .84	.72, .96
Sample sex						
Male	2	216	.06	.09$_a$	.09, .09	−.17, .34
Female	13	5,920	.38	**.53**$_a$	.53, .53	.42, .63
Type of sample						
Non-clinical	10	4,994	.40	**.56**$_a$	.42, .70	.44, .68
Clinical	3	570	.20	**.28**$_a$	.19, .38	.07, .50
Avoidant-Domineering						
PD method						
Self-report	9	2,399	−.04	−.05	−.59, .49	−.33, .23
Other	13	4,127	.08	.11	−.05, .26	.02, .19
Interpersonal method						
Self-report	17	4,120	−.03	−.04	−.55, .47	−.23, .16
Other	6	3,061	.00	.00	−.35, .34	−.23, .22
Sample sex						
Male	3	334	.07	.09	−.03, .21	−.09, .28
Female	17	5,199	.01	.01	−.37, .40	−.13, .16

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Type of sample						
Non-clinical	8	3,380	.00	.00	−.43, .43	−.24, .24
Clinical	8	1,295	.07	.09	−.13, .31	−.05, .24
Avoidant-Vindictive						
PD method						
Self-report	7	1,613	.32	**.41**	.23, .60	.28, .54
Other	11	3,913	.26	**.34**	.17, .51	.24, .43
Interpersonal method						
Self-report	14	3,238	.28	**.37**	.19, .55	.28, .45
Other	3	2,188	.27	**.36**	.17, .54	.17, .54
Sample sex						
Male	2	216	.17	.22	−.01, .44	−.10, .53
Female	14	4,317	.28	**.36**	.27, .46	.30, .43
Type of sample						
Non-clinical	6	2,625	.29	**.37**	.31, .44	.30, .45
Clinical	7	1,177	.22	**.28**	.03, .59	.08, .48
Avoidant-Cold						
PD method						
Self-report	7	1,613	.40	**.52**	.45, .59	.44, .60
Other	11	3,913	.42	**.54**	.40, .68	.45, .62
Interpersonal method						
Self-report	14	3,238	.41	**.53**	.44, .62	.47, .59
Other	3	2,188	.42	**.54**	.39, .69	.38, .70
Sample sex						
Male	2	216	.31	**.41**$_a$	.41, .41	.34, .47
Female	14	4,317	.41	**.53**$_a$	.50, .57	.48, .59
Type of sample						
Non-clinical	6	2,625	.40	**.52**	.46, .58	.45, .59
Clinical	7	1,177	.40	**.51**	.28, .75	.36, .67
Avoidant-Socially Avoidant						
PD method						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	7	1,613	.62	**.79**	.69, .89	.69, .89
Other	11	3,913	.57	**.73**	.56, .89	.63, .82
Interpersonal method						
Self-report	14	3,238	.59	**.76**	.54, .97	.65, .86
Other	3	2,188	.58	**.73**	.73, .73	.68, .79
Sample sex						
Male	2	216	.51	**.65**	.65, .65	.54, .75
Female	14	4,317	.58	**.73**	.57, .90	.65, .82
Type of sample						
Non-clinical	6	2,625	.57	**.73**	.73, .73	.66, .80
Clinical	7	1,177	.54	**.68**	.36, .99	.48, .88
Avoidant-Nonassertive						
PD method						
Self-report	7	1,614	.48	**.61**	.49, .73	.51, .71
Other	11	3,913	.49	**.63**	.48, .78	.54, .71
Interpersonal method						
Self-report	14	3,239	.46	**.59**	.43, .75	.50, .68
Other	3	2,188	.53	**.68**	.68, .68	.60, .76
Sample sex						
Male	2	216	.41	**.52**	.52, .52	.50, .54
Female	14	4,318	.47	**.60**	.45, .75	.52, .68
Type of sample						
Non-clinical	6	2,625	.48	**.62**	.53, .71	.53, .71
Clinical	7	1,177	.42	**.54**	.32, .76	.39, .69
Avoidant-Exploitable						
PD method						
Self-report	7	1,612	.39	**.50**	.31, .70	.37, .64
Other	11	3,913	.37	**.48**	.37, .58	.41, .55
Interpersonal method						
Self-report	14	3,237	.36	**.47**	.31, .62	.39, .55
Other	3	2,188	.40	**.52**	.43, .60	.40, .63

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Sample sex						
Male	2	216	.46	**.59**	.29, .89	.22, .97
Female	14	4,316	.35	**.45**	.39, .52	.39, .52
Type of sample						
Non-clinical	6	2,625	.35	**.46**	.33, .59	.36, .56
Clinical	7	1,177	.35	**.45**	.25, .65	.31, .59
Avoidant-Overly Nurturant						
PD method						
Self-report	9	2,401	.15	.19	−.17, .56	−.01, .40
Other	12	4,031	.31	**.41**	.28, .54	.32, .50
Interpersonal method						
Self-report	16	4,026	.17	.22	−.12, .56	.08, .36
Other	5	2,965	.29	**.37**	.09, .66	.16, .58
Sample sex						
Male	3	334	.19	**.25**	.04, .46	.01, .49
Female	16	5,105	.24	**.31**	.02, .65	.18, .45
Type of sample						
Non-clinical	7	3,284	.26	**.34**	.01, .70	.13, .55
Clinical	8	1,295	.22	**.28**	.12, .44	.17, .40
Avoidant-Intrusive						
PD method						
Self-report	7	1,613	.16	.21	−.04, .46	.05, .37
Other	11	3,913	.10	.13	−.04, .22	.07, .20
Interpersonal method						
Self-report	14	3,238	.10	.13	−.06, .32	.04, .22
Other	3	2,188	.15	.20	.10, .30	−.08, .31
Sample sex						
Male	2	216	.04	.06	.06, .06	−.01, .11
Female	14	4,317	.10	.14	−.01, .28	.06, .21
Type of sample						
Non-clinical	6	2,625	.13	.18	−.03, .32	.05, .30

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Clinical	7	1,177	.01	.02	.02, .02	−.06, .10
Dependent-Domineering						
PD method						
Self-report	9	2,399	.03	.05	−.41, .50	−.21, .30
Other	9	3,735	.22	**.31**	.14, .48	.18, .44
Interpersonal method						
Self-report	13	3,728	.06	.08	−.36, .53	−.11, .28
Other	6	3,061	.14	.20	−.26, .65	−.10, .49
Sample sex						
Male	3	334	.08	.10	.10, .10	−.07, .14
Female	13	4,807	.12	.17	−.25, .59	−.01, .35
Type of sample						
Non-clinical	8	3,380	.12	.16	−.28, .61	−.08, .41
Clinical	5	1,062	.15	.21	.08, .34	−.09, .34
Dependent-Vindictive						
PD method						
Self-report	7	1,613	.28	**.39**	.17, .61	.24, .53
Other	7	3,521	.29	**.40**	.27, .54	.31, .50
Interpersonal method						
Self-report	10	2,846	.27	**.36**	.20, .52	.27, .46
Other	3	2,188	.33	**.46**	.39, .53	.35, .57
Sample sex						
Male	2	216	.12	$.17_a$	.17, .17	−.02, .36
Female	10	3,925	.29	$\mathbf{.39}_a$	.39, .39	.31, .47
Type of sample						
Non-clinical	6	2,625	.30	**.41**	.28, .55	.30, .53
Clinical	4	944	.22	**.30**	.15, .45	.14, .46
Dependent-Cold						
PD method						
Self-report	7	1,613	.26	**.35**	.26, .45	.26, .44
Other	7	3,521	.20	**.28**	.28, .28	.23, .33

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Interpersonal method						
Self-report	10	2,846	.25	**.34**$_a$	.29, .38	.27, .40
Other	3	2,188	.19	**.26**$_a$	.26, .26	.19, .33
Sample sex						
Male	2	216	.24	**.33**	.33, .33	.27, .38
Female	10	3,925	.22	**.30**	.29, .31	.25, .34
Type of sample						
Non-clinical	6	2,625	.21	**.29**	.24, .34	.22, .36
Clinical	4	944	.23	**.31**	.22, .40	.20, .42
Dependent-Socially Avoidant						
PD method						
Self-report	7	1,613	.38	**.52**$_a$	.52, .52	.42, .61
Other	7	3,521	.16	**.21**$_a$	.21, .21	.11, .32
Interpersonal method						
Self-report	10	2,846	.35	**.47**$_a$	.47, .47	.39, .54
Other	3	2,188	.08	.11$_a$	.11, .11	−.05, .16
Sample sex						
Male	2	216	.46	**.62**$_a$	.62, .62	.43, .82
Female	10	3,925	.22	**.30**$_a$	.30, .30	.22, .38
Type of sample						
Non-clinical	6	2,625	.18	**.25**$_a$	.18, .31	.15, .35
Clinical	4	944	.32	**.43**$_a$	.43, .43	.31, .55
Dependent-Nonassertive						
PD method						
Self-report	7	1,615	.41	**.55**$_a$	.55, .55	.45, .64
Other	8	3,606	.25	**.34**$_a$	.34, .34	.28, .40
Interpersonal method						
Self-report	11	2,933	.37	**.50**$_a$	.50, .50	.43, .57
Other	3	2,188	.20	**.28**$_a$	.28, .28	.26, .29
Sample sex						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Male	2	216	.50	**.68**$_a$	.68, .68	.46, .89
Female	11	4,012	.29	**.39**$_a$	.39, .39	.33, .45
Type of sample						
Non-clinical	6	2,625	.27	**.36**$_a$	.36, .36	.28, .44
Clinical	5	1,029	.36	**.48**$_a$	.38, .58	.37, .60
Dependent-Exploitable						
PD method						
Self-report	7	1,612	.40	**.54**$_a$	.54, .54	.46, .62
Other	8	3,606	.34	**.46**$_a$	.46, .46	.43, .49
Interpersonal method						
Self-report	11	2,930	.38	**.52**$_a$	.52, .52	.47, .57
Other	3	2,188	.33	**.45**$_a$	.45, .45	.41, .50
Sample sex						
Male	2	216	.49	**.68**$_a$	.68, .68	.49, .87
Female	11	4,009	.35	**.48**$_a$	.48, .48	.46, .51
Type of sample						
Non-clinical	6	2,625	.35	**.47**	.47, .47	.44, .50
Clinical	5	1,029	.38	**.52**	.44, .60	.41, .62
Dependent-Overly Nurturant						
PD method						
Self-report	9	2,401	.29	**.40**	.22, .59	.29, .52
Other	9	3,724	.32	**.44**	.36, .52	.37, .50
Interpersonal method						
Self-report	13	3,719	.30	**.42**	.27, .56	.34, .50
Other	5	2,965	.30	**.41**	.31, .52	.32, .51
Sample sex						
Male	3	334	.28	**.39**	.04, .82	.02, .79
Female	13	4,798	.31	**.42**	.31, .54	.35, .49
Type of sample						
Non-clinical	7	3,284	.31	**.43**	.43, .43	.38, .49

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Clinical	6	1,147	.30	**.41**	.21, .62	.26, .57
Dependent-Intrusive						
PD method						
Self-report	7	1,614	.31	**.44**$_a$	.32, .56	.31, .57
Other	7	3,521	.46	**.64**$_a$	.45, .84	.49, .80
Interpersonal method						
Self-report	10	2,847	.30	**.42**$_a$	.42, .42	.34, .51
Other	3	2,188	.56	**.78**$_a$	.78, .78	.65, .92
Sample sex						
Male	2	216	.15	**.21**$_a$	.21, .21	.13, .29
Female	10	3,926	.41	**.57**$_a$	.57, .57	.45, .68
Type of sample						
Non-clinical	6	2,625	.45	**.63**$_a$	.50, .76	.48, .78
Clinical	4	944	.26	**.37**$_a$	.37, .37	.27, .46
Obsessive–Compulsive–Domineering						
PD method						
Self-report	8	1,429	.07	.10$_a$	−.20, .39	−.10, .31
Other	6	2,295	.27	**.40**$_a$	.12, .68	.18, .62
Interpersonal method						
Self-report	10	2,288	.09	.13	−.17, .42	−.04, .29
Other	4	1,995	.22	**.32**	.10, .75	.02, .67
Sample sex						
Male	3	334	.28	**.42**	.16, .69	.13, .72
Female	10	3,367	.19	**.28**	.10, .66	.08, .47
Type of sample						
Non-clinical	6	2,314	.22	**.32**	.10, .75	.05, .60
Clinical	4	688	.24	**.35**	.12, .58	.14, .56
Obsessive–Compulsive–Vindictive						
PD method						
Self-report	6	643	.11	.17	−.32, .65	−.16, .49

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Other	5	2,177	.22	**.32**	.06, .58	.12, .52
Interpersonal method						
Self-report	8	1,502	.10	.15$_a$	−.13, .42	−.06, .35
Other	2	1,218	.31	**.46**$_a$	.39, .53	.21, .71
Sample sex						
Male	2	216	.36	**.53**$_a$	.53, .53	.37, .68
Female	8	2,581	.19	**.29**$_a$	.01, .58	.09, .48
Type of sample						
Non-clinical	5	1,655	.24	**.35**	.01, .71	.09, .61
Clinical	3	570	.19	**.28**	.03, .52	.03, .53
Obsessive–Compulsive–Cold						
PD method						
Self-report	6	643	.08	.12	−.21, .45	−.13, .37
Other	5	2,177	.23	**.34**	.17, .50	.18, .50
Interpersonal method						
Self-report	8	1,502	.13	.19	−.05, .42	.02, .35
Other	2	1,218	.28	**.41**	.28, .55	.18, .64
Sample sex						
Male	2	216	.28	**.40**	.40, .40	.29, .52
Female	8	2,581	.20	**.29**	.03, .55	.14, .45
Type of sample						
Non-clinical	5	1,655	.22	**.32**	.02, .63	.10, .54
Clinical	3	570	.22	**.33**	.07, .59	.07, .59
Obsessive–Compulsive–Socially Avoidant						
PD method						
Self-report	6	643	.17	**.25**	.03, .46	.07, .42
Other	5	2,177	.18	**.27**	.19, .34	.19, .34
Interpersonal method						
Self-report	8	1,502	.15	**.22**	.07, .37	.10, .33
Other	2	1,218	.21	**.31**	.31, .31	.29, .32
Sample sex						

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Male	2	216	.28	**.41**$_a$	.41, .41	.38, .43
Female	8	2,581	.17	**.25**$_a$	.18, .32	.16, .34
Type of sample						
Non-clinical	5	1,655	.18	**.26**	.16, .36	.15, .37
Clinical	3	570	.24	**.35**	.35, .35	.31, .39
Obsessive–Compulsive–Nonassertive						
PD method						
Self-report	6	644	.14	.21	.05, .37	−.06, .36
Other	5	2,177	.11	.15	.15, .15	−.10, .20
Interpersonal method						
Self-report	8	1,503	.10	.14	.03, .25	−.05, .24
Other	2	1,218	.13	.19	.19, .19	−.18, .20
Sample sex						
Male	2	216	.22	**.32**$_a$	.32, .32	.18, .46
Female	8	2,582	.10	.15$_a$	.15, .15	−.09, .22
Type of sample						
Non-clinical	5	1,655	.12	.17	.11, .24	−.09, .26
Clinical	3	570	.15	.21	.21, .21	−.10, .33
Obsessive–Compulsive–Exploitable						
PD method						
Self-report	6	642	.21	**.32**	.06, .57	.12, .51
Other	5	2,177	.15	.21	.07, .36	−.09, .34
Interpersonal method						
Self-report	8	1,501	.11	.16	−.04, .37	.02, .31
Other	2	1,218	.22	**.33**	.33, .33	.28, .38
Sample sex						
Male	2	216	.32	**.48**	.34, .61	.18, .77
Female	8	2,580	.15	.21	.21, .21	−.11, .32
Type of sample						
Non-clinical	5	1,655	.20	**.29**	.18, .40	.19, .40
Clinical	3	570	.18	**.27**	.02, .52	.02, .52

Personality Disorder-Interpersonal Style	*k*	*N*	*r*	ρ	80% CrI	95% CI
Obsessive–Compulsive–Overly Nurturant						
PD method						
Self-report	8	1,431	.13	.19	−.05, .44	.04, .35
Other	6	2,295	.12	.17	−.02, .33	.06, .29
Interpersonal method						
Self-report	10	2,290	.09	.14	−.07, .35	.02, .26
Other	4	1,995	.11	.17	.03, .31	−.04, .30
Sample sex						
Male	3	334	.21	**.31**	.08, .71	.08, .71
Female	10	3,369	.11	.17	−.04, .30	.08, .26
Type of sample						
Non-clinical	6	2,314	.13	.20	−.04, .35	.08, .31
Clinical	4	688	.12	.18	−.05, .42	−.03, .40
Obsessive–Compulsive–Intrusive						
PD method						
Self-report	6	644	.16	**.24**	.24, .24	.12, .35
Other	5	2,177	.12	.18	−.03, .39	.02, .34
Interpersonal method						
Self-report	8	1,503	.07	$.10_a$	−.04, .24	−.03, .23
Other	2	1,218	.19	$\mathbf{.29}_a$	.29, .29	.16, .41
Sample sex						
Male	2	216	.23	**.35**	.21, .49	.08, .62
Female	8	2,582	.12	.19	−.03, .34	.07, .30
Type of sample						
Non-clinical	5	1,655	.19	$\mathbf{.28}_a$	.28, .28	.21, .36
Clinical	3	570	.08	$.13_a$	.13, .13	−.02, .23

Note. PD = personality disorder. *k* = number of studies. *N* = total sample size. *r* = mean observed correlation. ρ = mean population effect size corrected for sampling error and measurement unreliability. ρs noted in bold indicate that the credibility and confidence intervals do not include zero. Pairs of ρs marked with subscript ($_a$) indicate that ρs for each level of the moderator fall outside of the 80% credibility interval and 95% confidence interval for the other level of the moderator.

Table 8

Summary of Meta-Analytic Results for Associations Between Personality Disorders and Interpersonal Functioning in Specific Relationship Domains Broken Out by Moderator Variables

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Paranoid-Romantic						
PD method						
Self-report	8	2,907	.06	.08	−.15, .31	−.06, .22
Other	3	943	.10	**.15**	.15, .15	.06, .23
Interpersonal method						
Self-report	7	1,479	.17	**.24**$_a$	.21, .27	.12, .36
Other	4	1,613	−.01	−.02$_a$	−.10, .06	−.18, .14
Sample sex						
Male	8	2,818	.05	.08$_a$	.08, .08	−.05, .21
Female	5	637	.30	**.42**$_a$	.42, .42	.30, .53
Type of sample						
Non-clinical	6	1,460	.17	**.24**$_a$	.24, .24	.11, .37
Clinical	3	1,499	−.04	−.05$_a$	−.05, −.05	−.14, .04
Schizoid-Romantic						
PD method						
Self-report	8	2,907	.03	.04	−.08, .16	−.05, .13
Other	3	943	.06	.08	.08, .08	−.01, .16
Interpersonal method						
Self-report	7	1,479	.11	**.15**$_a$	.15, .15	.09, .21
Other	4	1,613	−.04	−.05$_a$	−.05, −.05	−.12, .02
Sample sex						
Male	8	2,818	.03	.04	−.11, .20	−.06, .15
Female	5	637	.12	**.16**	.16, .16	.11, .21
Type of sample						
Non-clinical	6	1,460	.11	**.15**$_a$	.15, .15	.09, .22
Clinical	3	1,499	−.05	−.07$_a$	−.07, −.07	−.10, .04
Schizotypal-Romantic						

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
PD method						
Self-report	9	4,483	.01	.02	−.21, .25	−.11, .15
Other	5	1,301	.10	**.13**	.13, .13	.06, .20
Interpersonal method						
Self-report	10	3,413	.11	**.15**$_a$	.15, .15	.09, .21
Other	5	1,796	−.13	**−.17**$_a$	−.21, −.13	−.32, −.01
Sample sex						
Male	8	2,818	−.02	−.02	−.32, .28	−.20, .16
Female	8	2,571	.10	**.14**	.14, .14	.08, .19
Type of sample						
Non-clinical	7	3,036	.12	**.16**$_a$	.16, .16	.09, .22
Clinical	5	1,857	−.13	**−.17**$_a$	−.17, −.17	−.30, −.04
Antisocial-Romantic						
PD method						
Self-report	11	3,527	.10	.13	−.06, .31	.03, .23
Other	16	4,743	.07	.09	−.01, .18	.04, .14
Interpersonal method						
Self-report	14	3,617	.10	.14	−.01, .28	.06, .21
Other	17	5,421	.07	.10	−.03, .22	.04, .15
Sample age						
Child/adolescent	5	1,419	.07	.10	.10, .10	−.07, .13
Adult	21	6,140	.09	.12	−.04, .28	.06, .19
Sample sex						
Male	20	5,770	.09	.11	−.04, .26	.05, .17
Female	13	3,282	.09	.12	−.03, .27	.04, .20
Type of sample						
Non-clinical	17	5,234	.08	.11	−.01, .22	.05, .16
Clinical	7	2,022	.10	.13	−.05, .31	.01, .25
Antisocial-Parent-Child						
PD method						
Self-report	4	427	.13	**.17**	.17, .17	.05, .28

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Other	8	2,195	.08	**.11**	.11, .11	.06, .16
Interpersonal method						
Self-report	3	1,101	.05	.07	.07, .07	−.01, .15
Other	11	2,023	.08	**.10**	.10, .10	.05, .15
Sample age						
Child/adolescent	1	—	—	—	—	—
Adult	11	—	—	—	—	—
Sample sex						
Male	9	2,179	.08	**.11**	.11, .11	.05, .16
Female	8	1,749	.08	**.10**	.10, .10	.04, .16
Type of sample						
Non-clinical	9	2,356	.08	**.11**	.11, .11	.07, .16
Clinical	2	145	.20	**.27**	.27, .27	.05, .48
Antisocial-Family						
PD method						
Self-report	4	2,889	.29	**.38**$_a$	.38, .38	.28, .49
Other	19	7,042	.12	**.17**$_a$	.17, .17	.11, .22
Interpersonal method						
Self-report	11	4,930	.12	**.16**	.10, .23	.11, .22
Other	18	7,791	.17	**.23**	.03, .42	.15, .30
Sample age						
Child/adolescent	16	7,322	.19	**.25**	.10, .40	.18, .32
Adult	6	2,271	.14	.18	−.03, .40	.03, .33
Sample sex						
Male	13	5,017	.13	**.18**	.07, .29	.11, .24
Female	12	6,180	.20	**.27**	.10, .44	.18, .36
Type of sample						
Non-clinical	14	8,291	.17	**.23**	.06, .39	.15, .30
Clinical	7	1,239	.21	**.29**	.07, .50	.14, .43
Antisocial-Peer						
PD method						

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
PD method						
Self-report	6	566	.18	**.23**	.23, .23	.13, .34
Other	8	1,080	.16	**.21**	.12, .30	.12, .30
Interpersonal method						
Self-report	3	221	.22	**.29**	.18, .39	.09, .49
Other	13	1,607	.17	**.22**	.17, .27	.15, .29
Sample age						
Child/adolescent	0	—	—	—	—	—
Adult	14	—	—	—	—	—
Sample sex						
Male	4	427	.14	**.19**	.19, .19	.14, .24
Female	13	1,577	.17	**.22**	.14, .31	.15, .30
Type of sample						
Non-clinical	8	1,095	.14	**.18**	.18, .18	.11, .25
Clinical	5	491	.21	**.28**	.20, .36	.14, .41
Borderline-Family						
PD method						
Self-report	5	2,838	.26	**.34**	.34, .34	.29, .40
Other	7	932	.19	**.25**	.05, .44	.10, .39
Interpersonal method						
Self-report	8	3,228	.26	**.34**	.27, .41	.27, .41
Other	4	476	.22	**.29**	.25, .32	.16, .42
Sample age						
Child/adolescent	4	1,826	.27	**.36**	.36, .36	.31, .41
Adult	7	1,606	.23	**.31**	.18, .45	.21, .42
Sample sex						
Male	2	1,728	.26	**.35**	.35, .35	.32, .38
Female	9	1,704	.24	**.32**	.18, .46	.22, .42
Type of sample						
Non-clinical	4	1,442	.23	**.30**	.21, .39	.19, .41
Clinical	6	1,924	.28	**.37**	.37, .37	.30, .44

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Borderline-Peer						
PD method						
Self-report	5	2,544	.24	**.31**	.31, .31	.26, .36
Other	7	955	.30	**.38**	.21, .55	.26, .51
Interpersonal method						
Self-report	6	2,609	.24	**.31**	.31, .31	.26, .36
Other	5	680	.35	**.44**	.33, .56	.31, .58
Sample age						
Child/adolescent	2	1,525	.25	**.32**	.21, .42	.18, .45
Adult	9	1,764	.28	**.35**	.28, .42	.28, .42
Sample sex						
Male	1	—	—	—	—	—
Female	9	—	—	—	—	—
Type of sample						
Non-clinical	5	1,214	.27	**.34**	.24, .45	.24, .44
Clinical	6	2,075	.26	**.33**	.25, .42	.25, .41
Histrionic-Romantic						
PD method						
Self-report	9	2,972	−.09	−.13$_a$	−.36, .11	−.29, .04
Other	3	943	.12	**.18**$_a$	.18, .18	.09, .26
Interpersonal method						
Self-report	7	1,479	.09	**.14**$_a$	.14, .14	.06, .22
Other	5	1,678	−.20	**−.29**$_a$	−.29, −.29	−.47, −.11
Sample sex						
Male	8	2,818	−.06	−.09	−.44, .26	−.29, .11
Female	6	702	.04	.06	.01, .12	−.07, .19
Type of sample						
Non-clinical	6	1,460	.10	**.14**$_a$	.14, .14	.05, .23
Clinical	4	1,564	−.22	**−.33**$_a$	−.33, −.33	−.48, −.17
Narcissistic-Romantic						
PD method						

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Self-report	9	2,972	.04	.06	.06, .06	−.02, .10
Other	5	1,181	.16	.23	−.01, .46	.03, .42
Interpersonal method						
Self-report	7	1,479	.06	.08	.08, .08	−.02, .14
Other	7	1,916	.11	.15	−.07, .37	.01, .30
Sample sex						
Male	8	2,818	.06	.08	.08, .08	−.03, .13
Female	7	853	.09	.13	.01, .26	−.01, .25
Type of sample						
Non-clinical	6	1,460	.06	.08	.08, .08	−.01, .14
Clinical	4	1,564	.06	.09	.07, .11	−.01, .16
Avoidant-Romantic						
PD method						
Self-report	8	2,907	−.01	−.02	−.18, .15	−.12, .09
Other	6	1,554	.05	.06	−.02, .14	−.03, .15
Interpersonal method						
Self-report	9	1,974	.09	**.11**$_a$	.11, .11	.06, .17
Other	6	1,983	−.09	**−.12**$_a$	−.12, −.12	−.20, −.04
Sample sex						
Male	8	2,818	−.02	−.03	−.18, .12	−.13, .08
Female	8	1,248	.08	.10	.10, .10	−.02, .18
Type of sample						
Non-clinical	6	1,460	.11	**.14**$_a$	.14, .14	.10, .19
Clinical	6	2,110	−.09	**−.11**$_a$	−.11, −.11	−.19, −.04
Dependent-Romantic						
PD method						
Self-report	9	2,972	−.11	−.14	−.48, .20	−.34, .05
Other	3	943	.07	.09	.09, .09	−.04, .22
Interpersonal method						
Self-report	7	1,479	.11	**.15**$_a$	.15, .15	.10, .19
Other	5	1,678	−.27	**−.36**$_a$	−.36, −.36	−.56, −.16

PD-relationship domain	*k*	*N*	*r*	ρ	80% CrI	95% CI
Sample sex						
Male	8	2,818	−.12	−.16$_a$	−.46, .14	−.37, .05
Female	6	702	.15	**.20**$_a$	.20, .20	.17, .24
Type of sample						
Non-clinical	6	1,460	.11	**.15**$_a$	.15, .15	.10, .20
Clinical	4	1,564	−.30	**−.40**$_a$	−.40, −.40	−.56, −.25
Obsessive-Compulsive-Romantic						
PD method						
Self-report	8	2,907	−.06	−.08	−.27, .11	−.20, .03
Other	5	1,432	−.03	−.04	−.22, .14	−.19, .11
Interpersonal method						
Self-report	9	1,968	.01	.02$_a$	.02, .02	−.09, .12
Other	5	1,863	−.15	**−.22**$_a$	−.24, −.21	−.34, −.10
Sample sex						
Male	8	2,818	−.06	−.08	−.31, .14	−.22, .05
Female	7	1,126	−.02	−.03	−.23, .17	−.18, .12
Type of sample						
Non-clinical	6	1,460	.03	.04$_a$	.04, .04	−.07, .16
Clinical	5	1,988	−.14	**−.20**$_a$	−.20, −.20	−.30, −.09

Note. PD = personality disorder. *k* = number of studies. *N* = total sample size. *r* = mean observed correlation. ρ = mean population effect size corrected for sampling error and measurement unreliability. ρs noted in bold indicate that the credibility and confidence intervals do not include zero. Pairs of ρs marked with subscript ($_a$) indicate that ρs for each level of the moderator fall outside of the 80% credibility interval and 95% confidence interval for the other level of the moderator. — indicates an insufficient number of studies to conduct moderator analyses.