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## **Parental Personality Disorder and Its Effects on Children: A Review of Current Literature**

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*A review is made of research connecting personality disorder in parents to child maltreatment and/or child mental health problems. Research studies indicate that certain personality disorders, notably Antisocial Personality Disorder and Borderline and Narcissistic personality disorders in parents show relationships to both parental behavior and ensuing childhood problems. However, parental personality disorders can also affect children's behavior through genetic transmission, hence while parental personality disorders are risk flags in custody assessments, parental behavior toward the child remains an essential target of assessment.*

**KEYWORDS** *personality disorder, custody*

Custody evaluations frequently involve assessment of parental psychopathology (Ackerman & Ackerman, 1996; Bagby, Nicholson, Buis, Radovanic, & Fidler, 1999; Bathurst, Gottfried, & Gottfried, 1997; Lempel, 1999), based on the notion that parental pathology, especially personality disorders, may affect the quality of care parents give children. There is some merit in this view. Several independent studies, which we review in this paper, have shown increased risk of mental disorder in the offspring of parents with mental health problems (Canino, Bird, Rubio-Stipec, Bravo, & Alegria, 1990; Dickstein et al., 1998; Johnson, Cohen, Kasen, Smailes, & Brook 2001; Johnson, Cohen, Kasen, Ehrensaft, & Crawford, 2006; Johnson, Cohen, Kasen, & Brook, 2008; Nordahl, Ingul, Nordvik, & Wells, 2007; Rutter &

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Quinton, 1984). Personality disorder (PD), according to *the Diagnostic and Statistical Manual of the Mental Disorders* (DSM-IV, Text Revision; American Psychiatric Association, 1994, p. 689) is “an enduring pattern of inner experience and behavior that deviates markedly from the expectations of one’s culture.” A personality disorder is “inflexible and pervasive across a broad range of personal and social situations” and leads to “significant distress or impairment in social, occupational, or other important areas.” The PDs typically can be traced back to adolescence and are indicated by unusual patterns of cognition, affect, interpersonal functioning, and impulse control. The DSM-IV lists 11 PDs including one “catch all” category that transcends the criteria for only one PD. The question of relevance for custody assessors is whether a PD in either parent might affect their parenting ability and/or the behavioral and mental health outcomes for their child.

The pioneering work of Rutter and Quinton (1984) on specific consequences for children of parents with diagnosed psychiatric disorders found initial evidence for impact of parental PDs on children. The authors implemented a 4-year prospective study of 137 families with a parent diagnosed with a psychiatric condition within the past year and who also had children living at home under the age of 15. Child mental health was assessed through teacher questionnaires, interviews with the children and parents, and with the spouses of the diagnosed parent. The “at-home” interview initially was conducted with both parents at the onset of the study (Year 0), but subsequent follow-ups focused only on maternal questionnaire responses. A control group was sociodemographically matched, chosen from the same geographic area (a London borough), and had a child in the same age group living at home but had no parental psychiatric condition. Psychiatric disorders in the parents were grouped as “psychosis” ( $n = 24$ ), affective disorders, (e.g., depression, hypomania,  $n = 57$ ), and personality disorder ( $n = 53$ ).

Children with parents in any of the three psychiatric conditions were more likely to be exposed to anxious/depressive behaviors than controls. Parents in the experimental group exhibited more hostility and less parental warmth (or higher rejection) than parents in the control group. Seventy-five of the parental PD children had conduct problems (compared to less than 50%) of the controls. Both parental mental disorder and marital discord tended to persist throughout the 4-year period of the study and parental PD children had an increased risk of persistent emotional/behavioral disturbances and conduct disorders. Although the authors did not specify which PDs were assessed in the parental PD category, traits in parents with PDs most predictive of negative child behaviors and psychiatric disorders were aggression/hostility, impulsivity, and marital discord. Indeed, aggression/hostility in the parents mediated the relationship between parental PD and child behavior problems and contributed to marital discord. Boys showing temperament risk features were most vulnerable to these ill effects associated with parental mental disorder. One unexplored finding was that the spouses of psychiatric patients were more

likely than control spouses to also show psychiatric disorder. There is some evidence in the domestic violence literature for “assortative mating” (persons with similar problems forming a dyad; see, e.g., Capaldi, Kim, & Shortt, 2004; Serbin et al., 2004). Both parents would have contributed to the “family adversity” experienced more by children in the experimental group.

## PARENTAL CONTRIBUTIONS TO DIAGNOSED CHILDREN'S DISORDERS

Several studies have examined associations between parental PD and specific psychiatric conditions in children—particularly antagonistic behaviors (e.g., Calvo, Lazaro, Castro, Morer, & Toro, 2007; Lenane et al., 1990; Nordahl et al., 2007) and Obsessive-Compulsive Disorder (OCD). Calvo et al. conducted a study of 63 parents of 32 children who had been diagnosed with OCD (mean age: 13.3), as well as 63 other parents with children ( $n = 32$ ) who had no previous psychiatric diagnosis. This study examined the prevalence of psychopathology present in the parents of the children with OCD and compared it to the rates of psychopathology of control parents. Calvo et al. found significantly higher rates of parental PDs in parents of children with OCD than in the control parents (37.9% of fathers of OCD patients vs. 10% of controls; 20.6% of mothers of OCD patients vs. 18.8% of controls). Specific parental PDs that showed significant elevations in the OCD group were Obsessive-Compulsive Personality Disorder (OCPD) and Avoidant Personality Disorder (APD). The rate of Passive-Aggressive Personality Disorder (PAPD) was significantly more comorbid (i.e., both co-occurred) in OCD mothers (but not fathers) compared to control mothers (12.5% vs. 0%).

Other clinical conditions in children exist that have significant correlations with factors of the Axis II Personality Disorder dimensions in parents. Nordahl et al. (2007) focused on maternal PD conditions in a study of 85 children aged 8 to 12 including subgroups with diagnoses of Generalized Anxiety Disorder (GAD) and Oppositional Defiant Disorder (ODD), and a non-patient control group. The authors hypothesized that the relationship between maternal psychopathology and child GAD and ODD prevalence would be strongly influenced by the functional nature of the mother-child interactions. Statistical analysis (discriminant function analysis) of maternal Axis II traits (traits associated with PD) generated two separate functions called “interpersonal difficulties” and “neglective, self-centered style,” each significantly correlated with specific parental PD traits. The highest correlations found with interpersonal difficulties were Borderline, Self-defeating, and Avoidant traits (0.649, 0.599, and 0.527, respectively), and with self-centered style were Histrionic and Narcissistic traits (0.472 and 0.418, respectively) in the mothers. Some negative correlations were observed with “self-centered style” and some Function 2 traits (neglective and self-centered),

indicating a problem in parenting at the other end of the continuum: specifically neglectful and over-controlling interactions observed between mothers and GAD/ODD children. In the Nordahl et al. study, these over-controlling actions were highest in the Dependent ( $-0.374$ ) and Compulsive ( $-0.210$ ) PD mothers. Again, parental PD was associated with specific interactive behaviors with the children who not coincidentally had anxiety disorders or were oppositional. The oppositional behavior appeared to develop as a reaction to the over-controlling mothers. However, before the children's behavior problem can be said to be a direct effect of the parental PD, the possibility that both are products of genetic influence must be ruled out. In short, are the observed effects of parental PDs a predominantly genetic influence, solely environmental in nature, or an interactive combination of the two? To the extent that parental PD affects parenting behaviors (as it appeared to in the Nordahl et al. study), the "nurture" side of this equation is apparent. We first review aspects of child-rearing deficits in personality-disordered parents, and then we review research on genetic transmission.

#### CONSEQUENCES OF PARENTAL PD ON CHILD-REARING BEHAVIORS

One of the most impactful consequences brought about as a result of growing up with parental PD is the way in which a child is raised with emotionally unavailable, unpredictable, or hostile/abusive parenting and the consequences of this upbringing on attachment issues. Data garnered from a Children in the Community (CICS) longitudinal study conducted in New York state provide considerable insight into the effect of PD parents' child-rearing behaviors (Johnson et al., 2006, 2008). A research sample was drawn from these community-based populations of 224 women and 153 men, with a mean age of 33 years, who had children (mean age = 8 years). This longitudinal study developed its participant sample in 1975 and did interviews and assessments in 2001 through 2004. The Johnson et al. (2006; 2008) study sample itself remained representative when compared to the total sample (including those without children) with respect to age, ethnic background, presence of a psychiatric condition, and socio-economic status (SES).

Assessment of the presence of a DSM-IV-TR Axis II Personality Disorder in parents was conducted with the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II; Johnson et al., 2006). Included in the questionnaire were items that detected PDs of the Cluster A ("odd-eccentric") category: Paranoid, Schizoid, and Schizotypal; the Cluster B ("dramatic-emotional") category: Antisocial, Borderline, Histrionic, and Narcissistic; as well as the Cluster C ("anxious-fearful") category: Avoidant, Dependent, and Obsessive-Compulsive. In addition, assessment was included for

Depressive PD and PAPD. As a result of previous research conducted by Johnson et al., a structured interview was developed for evaluating potentially “inadvisable or problematic parenting” behavior (Johnson et al., 2006). This interview included 33 items assessing physical punishment, parental control of child, possessiveness towards child, and other maladaptive parenting practices when present to abnormal degrees ( $\geq 1$  standard deviation from sample mean). Other dimensions were analyzed such as parental affection towards the child and parental assistance to the child (or their absence).

Gender differences in presence of maladaptive parenting behaviors were observed by Johnson et al. (2006). Fathers were found to be more likely than mothers to show “low parental affection toward, assistance to, communication with, supervision of, and time spent with the child” (Johnson et al., 2006, p. 348). As well, low parental assistance was shown more often in female children of subjects than in male children of subjects.

Utilizing multiple and logistic regression analyses, Johnson et al. (2006, 2008) examined the relationship between parental PDs and problematic child-rearing behaviors. In general, Johnson et al. (2006) found statistically significant correlations between parental PDs and several maladaptive child-rearing behaviors. Compared to control parents without PDs, those with PDs showed high parental possessiveness (32.7% in PD parents vs. 16% in non-PD parents), rejection (30.8% vs. 14.5%), and inconsistent discipline (38.5% vs. 13.5%). Parents with PDs also showed low parental affection (40.4% vs. 18.2%), assistance (34.6% vs. 17.2%), communication (28.8% vs. 13.8%), praise/encouragement (30.8% vs. 12.0%), supervision (28.8% vs. 17.2%), and time spent with the child (28.8% vs. 13.5%). All were significantly higher in the parental PD group after controlling for potential confounding variables (gender, co-occurring disorders, etc.; Johnson et al., 2006). Even when effects of possible comorbid disorders (specifically Anxiety, Depressive, and Substance Use Disorders), were statistically removed, the association between parental PDs and problematic child-rearing behaviors was not significantly altered. Johnson et al. (2006) found that parents with PDs were “more than three times as likely as those without personality disorders to report having engaged in  $\geq 5$  types of problematic child-rearing behaviors,” and those PD parent-patients who did not have any co-occurring disorder were also “significantly more likely than those without personality disorders to report  $\geq 5$  types of problematic child-rearing behaviors” (p. 346).

The types of PD associated with 5 or more problematic child-rearing behaviors were found to be, in descending order, Histrionic, Antisocial, Borderline, and Paranoid tied with Avoidant. This suggests that these PDs in parents may have the most negative impact on the raising of children and may be of interest to custody assessors as a risk flag for potential poor parenting behaviors. Johnson et al. (2008) re-examined the original data to determine correlations between developing PD symptomatology in children at mean ages of 14, 16, and 22 and problematic child-rearing behaviors in parents. The results from this

second analysis found a correlation of PD in children with problematic child-rearing techniques by their parents. Hence, parental PD was associated with problematic child-rearing behaviors and eventually with PD in children. After controlling for age, sex, and co-occurring psychiatric disorders in the children between the ages of 14 and 22, the highest predictors of the most negative impactful parental child-rearing behaviors were found to be parental Antisocial PD, Borderline PD, Dependent PD, Paranoid PD, and PAPD, in that order. The associations between the presence of PDs in parents and related maladaptive practices in raising their children resulted in consistently negative impacts on the child's behavior. While the data imply an effect of PDs upon raising children as a whole, more specific analysis of the effects by separate types of PDs show a distinct group of these disorders to be most significantly predictive of such behaviors. We review these in the following section.

### ANTISOCIAL PERSONALITY DISORDER

Clients diagnosed with Antisocial Personality Disorder (ASPD) are characterized by manipulative behavior “to gain profit, power, or some other material gratification” (American Psychiatric Association, 1994, p. 701), and it is found that, within these individuals “there is a pervasive pattern of disregard for and violation of the rights of others occurring since age 15 years” (American Psychiatric Association, 1994, p. 702). These traits are often observed to be linked to aggression and criminality in the individuals (Crocker et al., 2005; De Oliveira-Souza, Moll, Ignacio, & Hare, 2008). As with PDs in general, effects are also observed through parent-child interactions in cases where the parent has a diagnosis of ASPD. For example, studies have found elevated rates of ASPD in parents whose children exhibit symptoms of Conduct Disorder (CD; Barnow, Lucht, & Freyberger, 2005; Chronis et al., 2003; Frick et al., 1992; Piffner et al., 1999). Other studies have examined specifically the range of effects upon children of having fathers with ASPD. Results were analyzed and paternal ASPD was found to correlate positively with both Depression and CDs in youth (Marmorstein & Iacono, 2004).

Kopp and Beauchaine (2007) examined the relationship between paternal psychopathy with adolescent Depression and CD alone, or occurring together. Based on literature linking ASPD in fathers to predictability of Depression and CDs in youths (Chronis et al., 2003), they analyzed a sample of 180 children (121 male, 59 female). Results indicated significant differences in rates of child conduct problems for ASPD parents as compared to controls (36.4% vs. 14.5%). When the child was categorized as showing both conduct problems and Depression, the rate of ASPD in fathers was 38.2%, compared to 14.5% in controls (Kopp & Beauchaine).

Studies have also been done comparing effects of parents' comorbid parental alcoholism and ASPD (as well as ASPD alone) on the attentional

problems, aggression/delinquency ratings, and disruptive behavior of their children (e.g., Barnow, Ulrich, Grabe, Freyberger, & Spitzer, 2007). Moss, Lynch, Hardie, & Baron, (2002) focused solely on paternal ASPD and compared comorbid substance abuse problems to control families. The authors then examined the effects of this condition on children, assessing levels of general family functioning including categories such as task accomplishment, role performance, communication, affective expression, affective involvement, control, values and norms, and an overall aggregate measure of family function (Moss et al.). Mothers and teachers filled out respective versions of the Child Behavior Checklist (CBCL), and the peer delinquency scale of the Pittsburgh Youth Study was used to evaluate antagonistic peer interactions. Results showed child behavioral problems were 5.0% in control families compared to substance dependence only families (13.1%), and 20.6% for families with fathers having both substance dependency and ASPD. Children of fathers with either substance abuse issues or ASPD/substance abuse exhibited less conventional and more delinquent peer interactions than those of controls (Moss et al.). The authors concluded that:

Children of fathers with antisocial personality disorder and substance dependence clearly have greater externalizing and internalizing problem behaviors than children of fathers with substance dependence without antisocial personality disorder and children of fathers without either condition. From a developmental perspective, these children are at substantial risk for adolescent and adult antisociality and substance dependence. Thus, these children of fathers with antisocial personality disorder and substance dependence represent a group of well-defined high-risk children who should be the vigorous target of prevention interventions." (Moss et al., 2002, p. 613)

While most studies point to associations between paternal ASPD and childhood conduct problems and other behavioral difficulties, some studies examining these effects have failed to yield statistically significant results (Nigg & Hinshaw, 1998).

One of the few studies to examine maternal ASPD was a meta-analytic study conducted by Kim-Cohen et al. (2006). Lifetime antisocial histories for mothers were reported using the Diagnostic Interview Schedule and were related to physical maltreatment of children as reported by mothers using the Conflict Tactics Scale (Straus, 1990). As the number of reported ASPD symptoms increased, so did the likelihood of physical maltreatment of children. Mothers who reported three or more symptoms of ASPD had a self-reported rate of physically maltreating their children 22% of the time, compared to 3% for those with no reported symptoms. The association between maternal maltreatment and mental health problems in the (male) children was mediated by a genetic factor in the child—MAOA (monoamine

oxidase A) activity. The authors concluded there was a genetic component to vulnerability to environmental stress (in this case physical abuse by the mother). Although not specifically assessing for PDs, Serbin et al. (2004) found in a longitudinal study that aggressive girls (assessed by teachers' ratings in their early school years) later became more likely to join "deviant subcultures" where antisociality was normative. Still later they were more likely to have children with elevated numbers of visits to hospital emergency rooms for physical injuries.

## NARCISSISTIC PERSONALITY DISORDER

The DSM-IV-TR defines the essential features of Narcissistic Personality Disorder as "a pervasive pattern of grandiosity, need for admiration, and lack of empathy that begins by early adulthood and is present in a variety of contexts" (American Psychiatric Association, 1994, p. 717). Parental narcissism theoretically indicates a parent that would be self-absorbed and unresponsive to their children's needs. Horne (1998) examined the associations of parental narcissism on levels of expressed empathy, self-esteem, pleasing others' behavior, peer conflict, and narcissism itself in an adolescent sample. The study involved analysis of 230 intact families with a child 10 to 12 years of age. Measures of narcissism in the parents were performed with the Narcissistic Personality Inventory (NPI) revised to a 40-item report with special focus on an Exploiteness/Entitlement subscale, which measures the maladaptive facets of narcissism (Emmons, 1984; Watson, Gisham, Trotter, & Biderman, 1984; Watson & Biderman, 1994). Various other evaluative scales were used to quantify the dependent variable traits being tested in the study (Horne).

The results indicated mothers' narcissism rates correlated significantly and positively with their sons' narcissism and negatively with their sons' expressions of empathy. Neither of these factors correlated significantly with fathers' narcissism measures. Daughters' narcissism, expressed empathy, and self-esteem scores were all correlated with mothers' scores, suggesting a stronger same-sex linkage of influence between children's behaviors and parental narcissism. The negative correlations of children's rates of self-esteem and expressed empathy for others direct attention towards the specific negative consequences that may arise as part of growing up with a parent with Narcissistic PD. Horne (1998) concludes by saying:

A parent who is narcissistic . . . will be affectively unavailable to his or her children and may inhibit the development of vital human capacities in adolescents such as high self-esteem. Because children of narcissistic parents may be required to fulfill their parents' needs for admiration and recognition, they may develop pleasing others' behavior in excess of children of non-narcissistic parents and may display what appears to be heightened empathic skills which may actually be hypervigilance or

a heightened protective stance that masquerades as empathy. These children would most likely avoid conflict and appear narcissistic if their parents endorse narcissistic tendencies. (p. 76)

Some psychotherapists observe similar behaviors to those studied by Horne (1998) in children living with narcissistic parents. Termed “co-narcissism” by Rappoport (2005), this grouping of behavioral tendencies seems to focus on the children’s generalization of the parents’ behavior to other individuals within their lives. Lowered self-esteem, as a result of an incomplete self-schema, is observed as well as a more predominant desire to please others and focus attention on the thoughts and actions of those around them (Rappoport). Unable to penetrate their parents’ self-absorption, the child develops a chronic obsession with pleasing others.

### BORDERLINE PERSONALITY DISORDER

Borderline Personality Disorder (BPD) is a disorder that exhibits a “pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity beginning by early adulthood and present in a variety of contexts” (American Psychiatric Association, 1994, p. 654). This disorder comprises a set of organized symptoms, which contribute most to the effects on children.

A study conducted by Bartlett (2000) evaluated the scope of externalizing behaviors observed in children of mothers with BPO (Borderline Personality Organization, a measure that treats borderlines as existing on a continuum rather than as a distinct category). Externalizing behavior in children is most often manifested in measures of aggression and hostility. Bartlett theorized that the symptoms associated with a borderline structure in the parent may cause deficiencies in emotionality, social development, and behavior in the child. From a sample of 101 mothers (or other primary female caregivers) with a mean age of 38.21, and their children (mean age = 7.98), Bartlett assessed mothers’ personality organization with the Inventory of Personality Organization (IPO) that assessed features consistent with BPD, and child behaviors with the Child Behavior Checklist (CBCL), administered both to mothers and teachers. The children in the sample for the study were drawn from a hospitalized clinical group ( $n = 45$ ) and from a non-clinical, non-hospitalized group gathered from a local public school ( $n = 56$ ). This allowed the author to examine effects of maternal BPO on already diagnosed adolescents with psychopathological conditions (Bartlett).

Externalizing behaviors in children of mothers with BPO were clearly observed, however, some significant instances of internalizing behaviors were seen as well (Bartlett, 2000). Two specific facets of mother BPO were found to have the greatest correlations with both internalizing and externalizing behaviors in children—impairments in identity integration and

defensiveness— as Bartlett expressed in his conclusion (see the following quotations). The latter was associated with internalizing behaviors in children of BPO mothers and the former exclusively with externalizing behaviors. The effects occurred in both clinical and non-clinical groups. Observed effects were, however, only significant when parents' CBCL ratings were taken into account, not those of the children's teachers. These findings are consistent with data from previous studies linking BPD with increased psychiatric and behavioral risk in offspring (Weiss et al., 1996). Bartlett concluded with an analysis of the findings, looking at the potential mechanisms of action which contribute to the negative effect upon children of BPO mothers:

A parent's difficulties with maintaining identity integration (Kerberg, 1977), for example, may amount to a chronic condition that, among other things, exposes a child to a parent who consistently fails to integrate contradictory aspects of self and others in his or her mind. Consequently, such parents may not integrate contradictory attributes of their personalities into a more unified, cohesive sense of self, and may engage in contradictory behaviors that lead to instability in their interactions with their children. This stability, if persisting over time, may serve as a chronic stressor within the system of parent-child interactions. The impact of such a stressor may be compounded when the parental reliance on primitive defenses is also considered. (Bartlett, 2000, p. 84)

## GENETICS AND NEUROBIOLOGY OF PERSONALITY DISORDERS

Several previous studies have shown partial genetic and/or neurophysiological contributing factors to the development of personality and PDs (Cloninger, 2000; Goodman, New, & Siever, 2004; Nigg & Goldsmith, 1994). Studies on the biological basis of PDs have examined those disorders related to aggressive/hostile and impulsive behaviors (Goodman et al.). Brain systems that have been found to be related to these behaviors include the orbito-frontal cortex, the cingulate gyrus, and the amygdala and anterior-rhinal cortex. Twin studies and studies of adopted children allow for unique variable control in testing for any genetic basis of PDs. Nigg and Goldsmith (1994) reviewed this literature and covered a broad illustrative sample of heredity and twin studies evaluating the possible genetic components of the major PDs. Livesley, Jang, Jackson, and Vernon (1993) estimated the heritability of the basic dimensions of PD using a self-report scale that provided 18 factor-analyzed dimensions of personality (Diagnostic Assessment of Personality Pathology, DAPP; Livesley, Jackson, & Schroeder, 1989) in a sample of 90 monozygotic (MZ) and 85 dizygotic (DZ) twin pairs. The authors used a structural equation model to assess the comparative influence of additive genetic, common environmental (experiences common to both twins, e.g., family income) and unique environmental (experiences not shared by co-twins,

e.g., differential parental care). Their results showed estimates of broad heritability (additive genetic factors) from 0% for conduct problems to 64% for narcissism. Narcissism, callousness, stimulus seeking, anxiousness, suspiciousness, identity problems, and restricted affect had the highest heritability. Behaviors associated with submissiveness and attachment problems had low heritability. The authors noted that the low heritability factor for intimacy and attachment may have reflected a genetic disposition that was somehow modified through interaction, although how a parent who also showed these deficiencies could provide such amelioration was not described. For most dimensions of PD, the best model was one that specified both additive genetic and unique environmental effects. These results were similar to studies on normal personality (using the Big-5 dimensions of normal personality), and the authors concluded that continuity existed between the form of development of both normal and disordered personality.

One specific PD that has generated a considerable research on its biological and genetic links is BPD (Skodol & Siever, 2002; Livesley, 2008). Specific personality traits linked to BPD include impulsive aggression and affective instability. It is these dimensions that are most likely to carry with them a more biological and heritable component. Rates of impulsive aggression toward both the self and others have been measured in suicidal depression patients (Asberg, Traskman, & Thoren, 1976; Brown et al., 1989; Linnoila et al., 1983). These rates are then compared to concentrations of serotonergic metabolites found in subjects' cerebrospinal fluid (CSF), indicating reduced serotonin functioning in patients with BPD, which causes diminished serotonergic activity (Skodol & Siever). This diminished level of serotonin functioning has been found to cause the impulsive, self-destructive, and outburst behavior of BPD patients (Coccaro, Berman, Kavoussi, & Hauger, 1996). Affective instability in patients with BPD has been found to have links with levels of noradrenalin, acetylcholine in the limbic system (Lieb, Zanarini, Linehan, & Bohus, 2004), and cholinesterase (Skodol & Siever; Steinberg et al., 1997). Others have identified these same substances as having potentially mediating effects on the behavior that distinguishes BPD patients and have identified some genes linked to their production. Lieb et al. (2004) and Goodman et al. (2004) have found that serotonin transporter genes have possible mediating roles in the established concentrations of serotonin, a key neurotransmitter.

Studies of twin pairs have yielded inconclusive results on actual rates of concordance of BPD and its symptoms. Torgersen (1984) reported a study of 25 twin pairs (7 MZ, 18 DZ) where one twin had been diagnosed with BPD. Percentages of 0% and 11% concordance were reported, respectively. More recently, however, Torgersen et al. (2000) looked at a much larger study of twins, with one member having BPD. This second study had a sample size of  $N = 221$ , with 92 pairs being MZ and 129 pairs being DZ. Two sets of criteria were set: one with a "definite" BPD classification and a second with a broader

BPD term that allowed for criteria to fall short by one or two items. The concordance rates in the definite condition were found to be 35% MZ (monozygotic) versus 7% DZ (dizygotic), and in the broader category 38% versus 11%. Effects were found of a 0.69 additive genetic effect, with no shared-familial environment factors, as well as a lower genetic effect shown at 0.57, with a shared-familial environment effect of 0.11 (Torgersen et al., 2000). It is likely the larger sample size and sounder methodology yielded the higher rates of genetic heritability for BPD. As the research progresses, the genetic contribution linking parental PD with children's behavioral problems becomes stronger.

## CONCLUSIONS

The initial work of Rutter and Quinton (1984) began looking at specific behavioral consequences of psychiatric diagnoses in parents. Findings that focused even more closely on the effects of PDs in parents yielded results that showed a greater risk of psychiatric illness and behavioral and emotional instability in the children themselves. These effects were most strongly shown when the parental PD was linked strongly to externalizing behaviors, such as observable hostility and aggression. Such traits are strongly tied to parental PDs such as ASPD and BPD.

Possible neurochemical and genetic effects found by several researchers (Goodman et al., 2004; Lieb et al., 2004; Nigg & Goldsmith, 1994; Skodol & Siever, 2002) suggest a need for integrative screening and treatment methods combining both physiological, life history, and cognitive/behavioral components. Especially for such disorders of personality that exhibit the problematic hostile/aggressive patterns of behavior, levels of certain neurotransmitters (serotonin, norepinephrin NE) and distinct brain regions (especially those related to impulse control and emotional regulation) are suggested to be influential.

Specific, damaging child-rearing behaviors are seen in PD parents of many children. Physical punishment, parental control, possessiveness, and levels of parental assistance were all correlated to significant degrees with the PD psychopathology of one or more parents (Johnson et al., 2006). The Johnson et al. (2008) data do suggest, however, consistently increasing correlations of PD symptoms with future child-rearing problems. This may be an additional indicator of the necessity for early and preventive intervention, in hopes that a cycle of PD-problematic child-rearing behavior does not perpetuate. There is a need for such intervention to be uniquely matched to the type of parental PDs, which contributes to unique problems in children. The externalizing and internalizing behaviors of children of mothers with BPO (Bartlett, 2000), the narcissistic tendencies and low self-esteem of children of narcissistic parents (Horne, 1998; Rappoport, 2005), and the conduct problems and delinquent peer associations matched with paternal ASPD (Kopp & Beauchaine, 2007; Moss et al., 2002) all point to such a need.

More needs to be ascertained about the specific effects of PDs on children and the specific contribution of genetic and environmental factors. More research is needed into a wider variety of PD effect correlates, and it may be that future studies should utilize PD dimensions such as those in the Livesley DAPP scale (1989) or the SWAP-2000 (Westen & Schedler, 1999), which may represent the future of diagnostic classification (Widiger, Simonsen, Krueger, Livesley, & Verheall, 2005). Furthermore, the Livesley et al. (1993) study raises a major caveat for the use of PDs as an argument against parental custody. Namely, since PDs in parents can be related to children's behavioral problems through both genetic and environmental (parent-child interaction) means, the existence of PD in a parent should not automatically be used as an argument against their having custody. There is still a requirement to show that parental PD is manifesting itself in behaviors that can have negative consequences for the child. In some studies reviewed above (e.g., Kim-Cohen et al., 2006) there was a significant association between parental ASPD and child maltreatment. Finally, the essential causal link of children's behavioral problems to parental personality may not be to conventionally defined PDs but rather to attachment disorders in the parent. In a recent meta-analysis of 69 samples, Fearon, Bakermans-Kranenburg, van Ijzendoorn, Lapsley, & Roisman (2010) found that insecure and disorganized attachments in parents increase risk for externalizing problems in children, with the larger effect being found for boys. The effect for boys was  $d' = 0.35$ , that is, a sizeable (1/3 of a *SD*) difference.

Studies of diagnosed children that work retrospectively may tap a combination of heritable and environmental effects from parents. If it is heritable, the damage to the child, so to speak, is already done. If it is environmental (interactive), this needs to be carefully assessed. In the face of the data presented, each case of PD in parents must be analyzed for unique behavioral and affective components.

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