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Psychiatric Disorders in Adolescence and Early Adulthood and Risk for Child-Rearing Difficulties During Middle Adulthood

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Data from a community-based longitudinal study were used to investigate the associations of parental psychiatric disorders evident by early adulthood with child-rearing behavior during middle adulthood. A series of psychiatric assessments was conducted during the adolescence (mean ages 14 and 16) and early adulthood (mean age 22) of 153 males and 224 females. Child-rearing behavior was assessed at mean parental age 33 and mean offspring age 8. Parental anxiety, depressive, disruptive, substance use, and personality disorders evident by mean age 22 were each associated with more than one type of problematic child-rearing behavior at mean age 33, after parental and offspring age and sex and co-occurring parental disorders were controlled statistically. Antisocial, borderline, dependent, paranoid, and passive–aggressive personality disorder symptoms during adolescence and early adulthood were independently associated with the overall level of problematic child-rearing behavior at mean age 33.

Keywords: *psychiatric; disorder; parenting; child rearing*

Research has provided considerable evidence indicating that parental psychiatric disorders are associated with problematic child-rearing behavior, parenting difficulties, and problems in parent–child relationships (e.g., Cassidy, Zoccolillo, & Hughes, 1996; Johnson, Cohen, Kasen, Smailes, & Brook, 2001; Weinberg & Tronick, 1998). Parents with common psychiatric

disorders (e.g., anxiety, conduct, depressive, and substance use disorders) have been found to be more likely than parents without these disorders to engage in problematic parenting behavior (Boyle & Pickles, 1997; Cohn, Campbell, Matias, & Hopkins, 1990; Ehrensaft et al., 2003; Fendrich, Warner, & Weissman, 1990; Hans, Bernstein, & Henson, 1999; Kandel, 1990; Lizardi & Klein, 2000; Rutter, 1990; Whaley, Pinto, & Sigman, 1999).

However, most of the studies that have been conducted, to date, have examined a relatively narrow range of parental disorders and parenting practices (Berg-Nielsen, Vikan, & Dahl, 2002). Co-occurring parental disorders have been controlled in some but not all of the investigations that have been conducted, and the range of comorbidity assessed has varied considerably. Because few investigations have examined a wide range of parental disorders and parenting practices, there are important gaps in our understanding of these associations. For example, it has not yet been determined whether certain types of parental disorders are differentially associated with risk for child-rearing difficulties, inadvisable parenting practices, or problems in parent–child relationships.

Multiwave studies assessing psychiatric disorders among potential parents before the childbearing years and monitoring their parenting practices after their children are born are likely to be particularly informative in a number of respects. Such prospective longitudinal investigations are uniquely able to determine whether parental disorders are evident before the birth of the child, facilitating the identification of parental disorders as potential risk factors for child-rearing problems. However, studies of this type are expensive and time-consuming insofar as they require administration of diagnostic interviews to a sizable sample of prospective parents, followed by systematic assessment of child-rearing behavior several years later. To date, only a few studies with these methodological characteristics have been conducted. The available evidence from multiwave longitudinal studies that have monitored the child-rearing behavior of parents with psychiatric disorders suggests that parental disorders tend to be associated with subsequent child-rearing difficulties (e.g., Cassidy et al., 1996; Weinberg & Tronick, 1998). Unfortunately, there are many associations between specific types of parental disorders and subsequent parenting practices that have not

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yet been investigated in a comprehensive and systematic manner based on prospective longitudinal data.

Another concern is that relatively little information is currently available regarding the child-rearing behavior of parents with personality disorders (PDs). Because PDs are characterized by enduring patterns of problematic interpersonal behavior (American Psychiatric Association, 1994; Johnson, Rabkin, Williams, Remien, & Gorman, 2000), it has been hypothesized that parents with PDs may be particularly likely to engage in problematic child-rearing behavior (Berg-Nielsen et al., 2002). Research has suggested that maladaptive personality traits may account for much of the association between some types of parental Axis I disorders and problematic parenting behaviors (Hans, Bernstein, & Henson, 1999; Mills, Puckering, Pound, & Cox, 1985). In addition, there has been evidence suggesting that parental PD may be independently associated with child-rearing difficulties after co-occurring parental disorders are accounted for (Johnson et al., 2001). However, until now, no community-based epidemiological study has provided data regarding the child-rearing behavior of mothers and fathers with PDs and Axis I disorders that were assessed with clinician-administered structured diagnostic interviews.

Research investigating these associations is likely to have important clinical and public health implications. Child-rearing practices may play a significant role in determining whether the children of affected parents will develop mental disorders (Browne, Joyce, Wells, Bushnell, & Hornblow, 1995; Frick et al., 1992; Johnson et al., 2001; Rutter, 1990). Comprehensive studies of associations between parental disorders and problematic child-rearing behaviors may facilitate the development of intervention strategies that may help to prevent transmission of psychiatric disorders from parents to their offspring (Chilcoat, Breslau, & Anthony, 1996; Redmond, Spoth, Shin, & Lepper, 1999). If certain types of parental disorders are differentially associated with problematic child rearing, it is possible that improved recognition and treatment of these parental disorders might help to reduce the extent or severity of parenting difficulties in the general population (Chilcoat et al., 1996). In addition, improved identification of high-risk parents may facilitate efforts to provide targeted interventions that can help parents to improve their child-rearing skills (Irvine, Biglan, Smolkowski, Metzler, & Ary, 1999; Redmond et al., 1999; Spoth, Lopez, Redmond, & Shin, 1999).

We report findings of the Children in the Community Study (CICS), a community-based prospective longitudinal study, regarding associations between parental anxiety, depressive, disruptive, personality, and substance use disorders evident during adolescence or early adulthood and a wide

range of parenting behaviors during the child-rearing years. Parental and offspring age and gender and co-occurring parental disorders were controlled statistically to investigate whether parental anxiety, depressive, personality, and substance use disorders were independently associated with child-rearing behavior net of these maternal and offspring characteristics.

Method

Sample and Procedure

The participants in the present study were 377 adults in the CICS (mean age = 33.48 years, *SD* = 2.73; 224 women [59.4%]; 153 men [40.6%]), with children, who completed comprehensive psychosocial and psychiatric assessments regarding themselves and a randomly selected child (mean offspring age = 8.18 years, *SD* = 4.67) in 2001-2004. These participants were part of a cohort that had been administered structured psychiatric interviews in 1983 (*N* = 778, mean age = 13.8, *SD* = 2.6), 1985-1986 (*N* = 776, mean age = 16.1, *SD* = 2.7), and 1991-1993 (*N* = 749, mean age = 22.1, *SD* = 2.7). The participants were originally selected for inclusion in the CICS in 1975, at mean age = 5.5 (*SD* = 2.8), when their mothers completed comprehensive psychosocial assessments regarding a broad range of familial characteristics (Cohen & Cohen, 1996; Kogan, Smith, & Jenkins, 1977). A stratified random sampling procedure was used, in 1975, to obtain a representative sample of families in Albany and Saratoga Counties in the state of New York. Census data were used to create primary sampling units, stratified by urban–rural status, ethnicity, and income. A systematic sample of these units was drawn with probability proportional to the number of households and probabilities equal for members of all strata. Address lists were compiled, and interviewers were sent to the selected addresses; 1,141 families were invited to participate, and 976 mothers (85.5%) were interviewed. The families were generally representative of families in the northeastern United States with regard to most demographic variables (e.g., socioeconomic status) in 1983, but reflected the sampled region, with high proportions being Catholic (54%) and Caucasian (91%; Cohen & Cohen, 1996).

A total of 658 participants (349 women [53.0%], 309 men [47.0%]) were interviewed in 2001-2004. These families did not differ significantly from the remainder of the original sample with regard to demographic variables, childhood behavior problems, or parental psychiatric conditions at mean age 5.5. Of the 658 participants interviewed in 2001-2004, the 377 participants with children (i.e., the respondents in the present report) did not differ

significantly from the 281 respondents without children with respect to age, ethnicity, socioeconomic status, or presence of psychiatric disorder. However, the proportion of women was significantly higher ($\chi^2 = 14.41$; $df = 1$; $p = .0002$) among the respondents with children than it was among the respondents who did not have children.

The CICS study procedures have been approved by the Columbia University and New York State Psychiatric Institute Institutional Review Boards. Written informed consent or assent was obtained from all participants after the interview procedures were fully explained. A National Institute of Health Certificate of Confidentiality has been obtained for these data. Additional information regarding the study methodology is available from previous reports (Cohen & Cohen, 1996; Johnson et al., 2001) and on the study Web site (http://nyspi.org/childcom).

Assessment of Parental Psychiatric Disorders During Adolescence and Early Adulthood

Parental psychiatric disorders were assessed, prospectively, during a series of structured diagnostic interviews that took place during the adolescence (mean ages 14 and 16) and early adulthood (mean age 22) of the individuals whose subsequent child-rearing behavior was examined in the present study. This report examines associations of parental disorders that were evident by mean age 22 (i.e., diagnostic criteria met during adolescence and/or at mean age 22) with their child-rearing behavior at mean age 33. At mean parental ages 14 and 16, the Diagnostic Interview Schedule for Children (DISC-I; Costello, Edelbrock, Duncan, & Kalas, 1984) was administered to assess anxiety (agoraphobia, generalized anxiety disorder [GAD], obsessive–compulsive disorder [OCD], panic disorder, separation anxiety disorder, social anxiety disorder), depressive (dysthymic disorder, major depressive disorder), disruptive (attention deficit disorder, conduct disorder, oppositional defiant disorder), and substance use (alcohol and drug abuse and dependence) disorders at mean ages 14 and 16. Maternal and offspring interviews were conducted at mean ages 14 and 16, using the parent and youth versions of the DISC-I, because the use of multiple informants has been found to increase the reliability and validity of psychiatric diagnoses during adolescence (Bird, Gould, & Staghezza, 1992; Piacentini, Cohen, & Cohen, 1992). Symptoms were considered present if reported by either informant. An age-appropriate version of the DISC-I was administered at mean age 22. Research has supported the reliability and validity of the DISC-I as administered in the present study (Cohen, O'Connor, Lewis, & Malachowski, 1987; Cohen, Velez, Kohn, Schwab-Stone, & Johnson, 1987).

Antisocial, avoidant, borderline, dependent, depressive, histrionic, narcissistic, obsessive–compulsive, paranoid, passive–aggressive, schizoid, and schizotypal PDs were assessed with items from the Personality Diagnostic Questionnaire (PDQ; Hyler et al., 1988), the Structured Clinical Interview for *DSM-III* Axis II Personality Disorders (SCID-II; Spitzer & Williams, 1986), and the DISC-I (Costello et al., 1984). Items from these instruments were originally selected on the basis of correspondence with *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.) (*DSM-III*; American Psychiatric Association, 1980) or *DSM-III-R* (American Psychiatric Association, 1987) diagnostic criteria and combined using algorithms developed by consensus among one psychiatrist and two clinical psychologists (Bernstein et al., 1993). Following the publication of *DSM-IV* (American Psychiatric Association, 1994), the items selected from the study measures and the algorithms were modified to maximize correspondence with *DSM-IV* diagnostic criteria. Items from the Disorganizing Poverty Interview (Kogan et al., 1977), which was administered at mean ages 14, 16, and 22, were added to the diagnostic algorithms, most notably to permit assessment of depressive PD. Depressive and passive–aggressive PDs were assessed in the present study because numerous studies have indicated that both of these *DSM-IV* (American Psychiatric Association, 1994) diagnostic criterion sets, provided for further study, are associated with risk for adverse interpersonal and mental health outcomes (e.g., Johnson, Cohen, Kasen, & Brook, 2005, 2006a, 2006b; Johnson, Cohen, Smailes, et al., 2000; Klein, 2003; Klein & Shih, 1998).

Individuals who met the diagnostic criteria for more than one type of PD during adolescence (based on the assessments conducted at mean ages 14 and 16), and/or at mean age 22, were classified as having met the diagnostic criteria for PD by mean age 22. The *DSM-IV* stipulates that PD symptoms must be persistent for an adolescent to be diagnosed with a PD. Accordingly, *adolescent* PD diagnoses were assigned only if the *DSM-IV* diagnostic criteria were met at mean ages both 14 and 16 or if the diagnostic criteria were met at one assessment and were within one criterion of a diagnosis at the other assessment (Johnson et al., 2001). In accordance with *DSM-IV* diagnostic criteria, antisocial PD was assessed only in participants who were at least 18 years old. Aggregate PD trait levels were calculated by computing the mean number of antisocial, avoidant, borderline, dependent, depressive, histrionic, narcissistic, obsessive–compulsive, paranoid, passive–aggressive, schizoid, and schizotypal PD traits that were identified as being present at mean ages 14, 16, and 22.

Numerous studies have supported the reliability and validity of the items and algorithms that were used to assess PDs in the present study at mean ages 14, 16, and 22. PD symptoms, assessed using these items and algorithms, were found to be moderately stable between mean ages 14 and 22 (Johnson, Cohen, Kasen, Skodol, & Brook, 2000). The stability of PD symptoms, assessed using these procedures, was similar to the stability of PD symptoms in studies of adults that have used similar test–retest intervals (Johnson, Cohen, Kasen, et al., 2000). The concurrent validity of the assessment procedure was supported by findings indicating that PDs were associated with current impairment, distress, and Axis I disorders (Bernstein et al., 1993; Kasen, Cohen, Skodol, Johnson, & Brook, 1999). The predictive validity of the assessment was supported by findings indicating that adolescent PDs were associated with elevated risk for Axis I disorders, criminal or violent behavior, and suicidal behavior at mean age 22 (Johnson, Cohen, Chen, Kasen, & Brook, 2006; Johnson et al., 1999).

Assessment of Child-Rearing Behavior

The parental interview included 33 items assessing parental behaviors that when present (e.g., inconsistent parental discipline), or when absent (e.g., low parental affection), have been found to be indicative of inadvisable or problematic parenting, based on previous research (e.g., Johnson et al., 2001). These items were adapted from the Disorganizing Poverty Interview and other validated measures of child-rearing behavior (Avgar, Bronfenbrenner, & Henderson, 1977; Schaefer, 1965). The items used to assess child-rearing behavior in the present study and their response formats are listed in the appendix. Because different response formats were used to assess different types of child-rearing behavior, each item score was transformed to a z score with a mean of 0.0 and a standard deviation of 1.0. To compute a total score for each type of child-rearing behavior, the z scores for each child-rearing item were, in turn, summed and transformed to z scores with a mean of 0.0 and a standard deviation of 1.0. Child-rearing behaviors were identified as being potentially problematic if they were ≥1 standard deviation from the sample mean at the negative end of the scale (e.g., low parental communication with the child).

Overall, the 33 items assessing child-rearing behavior demonstrated acceptable internal consistency in the present study (Cronbach's $\alpha = .79$). The α coefficients for specific types of child-rearing behavior tended to be somewhat lower: parental affection toward the child (two items, $\alpha = .61$), parental assistance to the child (four items, $\alpha = .62$), parental communication with the child (three items, $\alpha = .64$), parental control of the child (three items,

α = .64), parental disciplinary consistency (two items, α = .44), parental physical punishment (one item), parental possessiveness toward the child (two items, α = .59), parental praise and encouragement of the child (two items, α = .81), parental rejection of the child (one item), parental supervision of the child (eight items, α = .49), and parental time spent with the child (four items, α = .74). Previous research has supported the validity of the child-rearing behavior assessment items administered in the CICS (e.g., Cohen & Cohen, 1996; Johnson et al., 2001; Kogan et al., 1977; Wagner & Cohen, 1994). Problematic child-rearing behaviors assessed with these items have been found to predict elevated offspring risk for psychiatric symptoms and disorders (Brook, Whiteman, Gordon, & Brook, 1984; Cohen & Brook, 1987; Johnson, Cohen, Chen, et al., 2006; Johnson et al., 2001, 2002; Wagner & Cohen, 1994).

Data Analysis

Analyses of contingency tables were conducted to investigate associations of parental psychiatric disorders evident by mean age 22 with child-rearing behavior at mean age 33. Logistic regression analyses were conducted to investigate whether these associations were significant after controlling for parental and offspring age, sex, and co-occurring parental psychiatric disorders. A composite index of problematic parental behavior was computed by summing the number of specific types of problematic child-rearing behavior that were reported by each parent. Multiple and logistic regression analyses and analyses of covariance were conducted to investigate whether parental psychiatric disorders and PD trait levels were associated with the composite index of problematic child-rearing behavior. Parental and offspring age, sex, and co-occurring parental psychiatric disorders were controlled statistically.

Results

Associations of Parental Psychiatric Disorders With Specific Child-Rearing Behaviors

Parental anxiety disorders evident by mean age 22 were significantly associated with high parental possessiveness, inconsistent parental discipline, and having more than three types of problematic child-rearing behavior at mean age 33 in bivariate analyses when the covariates were not controlled. The association between parental anxiety disorders evident by mean age 22 and high parental possessiveness at mean age 33 was statistically

significant ($p < .05$) when parental gender, offspring gender, and co-occurring parental disorders were controlled (Table 1). Bivariate analyses indicated that parental depressive disorders evident by mean age 22 were significantly associated with harsh physical punishment, high parental control, possessiveness and rejection, inconsistent parental discipline, and having more than three types of problematic child-rearing behavior at mean age 33. The associations of parental depressive disorders evident by mean age 22 with high parental control and possessiveness at mean age 33 remained significant when the covariates were controlled (Table 2).

Parental disruptive disorders evident by mean age 22 were significantly associated in bivariate analyses with low parental affection, assistance, praise and encouragement, and supervision and having more than three types of problematic child-rearing behavior at mean age 33. The associations of parental disruptive disorders evident by mean age 22 with low parental assistance to the child at mean age 33 remained significant when the covariates were controlled (Table 3). Parental substance use disorders evident by mean age 22 were significantly associated in bivariate analyses with inconsistent parental discipline, low parental communication and supervision, and having more than three types of problematic child-rearing behavior at mean age 33. The associations of parental substance use disorders evident by mean age 22 with inconsistent parental discipline at mean age 33 remained significant when the covariates were controlled (Table 4). Parental PDs evident by mean age 22 were significantly associated in bivariate analyses with inconsistent parental discipline; low parental affection, assistance, and praise and encouragement; and having more than three types of problematic child-rearing behavior at mean age 33. The associations of parental PDs with low parental assistance to the child and having more than three types of problematic child-rearing behavior remained statistically significant ($p < .05$) when the covariates were controlled (Table 5).

Associations of Parental Psychiatric Disorders With the Child-Rearing Behavior Composite Index

Findings regarding the associations of parental anxiety, depression, substance use, and PDs evident by mean age 22 with the total number of child-rearing difficulties reported by the parents at mean age 33 are presented in Figure 1. Parental depressive ($F = 4.71$; $df = 6, 370$; $p = .031$), disruptive ($F = 7.54$; $df = 6, 370$; $p = .006$), personality ($F = 6.88$; $df = 6, 370$; $p = .009$), and substance use ($F = 6.21$; $df = 6, 370$; $p = .013$) disorders evident by mean age 22 were significantly associated with the composite index of problematic child-rearing behaviors at mean age 33 when co-occurring

(text continues on page 224)

Table 1
Association of Parental Anxiety Disorder Evident by Mean Age 22 With Child-Rearing Behavior at Mean Age 33 ($N = 377$)

Child-Rearing Behavior	Prevalence of Child-Rearing Behavior Among Parents			
	Without Anxiety Disorder % (*n*)	With Anxiety Disorder % (*n*)	Bivariate Odds Ratio (95% CI)	Adjusted Odds Ratio[a] (95% CI)
Harsh physical punishment	12.2% (35 of 286)	9.9% (9 of 91)	0.79 (0.36-1.71)	0.57 (0.25-1.31)
High parental control of child	15.7% (45 of 286)	12.1% (11 of 91)	0.74 (0.36-1.49)	0.55 (0.26-1.17)
High parental possessiveness toward child	13.3% (38 of 286)	34.1% (31 of 91)	**3.37 (1.94-5.86)**	**2.53 (1.39-4.63)**
High parental rejection of child	16.1% (46 of 286)	18.7% (17 of 91)	1.20 (0.65-2.22)	0.83 (0.42-1.62)
Inconsistent parental discipline	13.6% (39 of 286)	27.6% (25 of 91)	**2.40 (1.36-4.25)**	1.73 (0.93-3.24)
Low parental affection toward child	19.2% (55 of 286)	27.5% (25 of 91)	1.59 (0.92-2.75)	1.33 (0.71-2.49)
Low parental assistance to child	19.9% (57 of 286)	18.7% (17 of 91)	0.92 (0.51-1.68)	0.78 (0.40-1.53)
Low parental communication with child	15.4% (44 of 286)	17.6% (16 of 91)	1.17 (0.63-2.20)	1.24 (0.61-2.51)
Low parental praise and encouragement of child	12.9% (37 of 286)	19.8% (18 of 91)	1.66 (0.89-3.09)	1.38 (0.70-2.72)
Low parental supervision of child	17.5% (50 of 286)	23.1% (21 of 91)	1.42 (0.80-2.52)	1.19 (0.62-2.28)
Low parental time spent with child	14.7% (42 of 286)	18.7% (17 of 91)	1.33 (0.72-2.48)	1.61 (0.79-3.30)
≥3 types of problematic child-rearing behavior	26.9% (77 of 286)	38.5% (35 of 91)	**1.69 (1.03-2.79)**	1.21 (0.67-2.17)

a. Controlling for parental and offspring age and sex and co-occurring parental disorders. Significant associations ($p < .05$) are indicated in bold print.

Table 2
Association of Parental Depressive Disorder Evident by Mean Age 22 With Child-Rearing Behavior at Mean Age 33 ($N = 377$)

Child-Rearing Behavior	Prevalence of Child-Rearing Behavior Among Parents			
	Without Depressive Disorder % (*n*)	With Depressive Disorder % (*n*)	Bivariate Odds Ratio (95% CI)	Adjusted Odds Ratio[a] (95% CI)
Harsh physical punishment	10.1% (33 of 327)	22.0% (11 of 50)	**2.51 (1.18-5.37)**	2.08 (0.89-4.86)
High parental control of child	12.8% (42 of 327)	28.0% (14 of 50)	**2.64 (1.31-5.30)**	**2.95 (1.33-6.51)**
High parental possessiveness toward child	15.6% (51 of 327)	36.0% (18 of 50)	**3.04 (1.59-5.83)**	**2.12 (1.03-4.30)**
High parental rejection of child	15.0% (49 of 327)	28.0% (14 of 50)	**2.21 (1.11-4.39)**	1.61 (0.75-3.44)
Inconsistent parental discipline	15.3% (50 of 327)	28.0% (14 of 50)	**2.15 (1.08-4.28)**	1.32 (0.62-2.77)
Low parental affection toward child	20.5% (67 of 327)	26.0% (13 of 50)	1.36 (0.69-2.71)	0.81 (0.36-1.80)
Low parental assistance to child	18.7% (61 of 327)	26.0% (13 of 50)	1.53 (0.77-3.06)	1.30 (0.59-2.85)
Low parental communication with child	15.6% (51 of 327)	18.0% (9 of 50)	1.19 (0.54-2.59)	1.00 (0.42-2.40)
Low parental praise and encouragement of child	13.5% (44 of 327)	22.0% (11 of 50)	1.81 (0.86-3.80)	1.30 (0.57-2.96)
Low parental supervision of child	18.0% (59 of 327)	24.0% (12 of 50)	1.43 (0.71-2.91)	1.00 (0.45-2.23)
Low parental time spent with child	15.9% (52 of 327)	15.0% (7 of 50)	0.86 (0.37-2.02)	0.60 (0.23-1.58)
≥3 types of problematic child-rearing behavior	27.2% (89 of 327)	46.0% (23 of 50)	**2.28 (1.24-4.18)**	1.42 (0.70-2.91)

a. Controlling for parental and offspring age and sex and co-occurring parental disorders. Significant associations ($p < .05$) indicated in bold print.

Table 3
Association of Parental Disruptive Behavior Disorder Evident by Mean Age 22 With Child-Rearing Behavior at Mean Age 33 ($N = 377$)

	Prevalence of Child-Rearing Behavior Among Parents			
Child-Rearing Behavior	Without Disruptive Disorder % (n)	With Disruptive Disorder % (n)	Bivariate Odds Ratio (95% CI)	Adjusted Odds Ratio[a] (95% CI)
Harsh physical punishment	10.8% (34 of 315)	16.1% (10 of 62)	1.58 (0.74-3.41)	1.50 (0.64-3.51)
High parental control of child	13.7% (43 of 315)	21.0% (13 of 62)	1.68 (0.84-3.35)	1.67 (0.77-3.61)
High parental possessiveness toward child	17.5% (55 of 315)	22.6% (15 of 62)	1.38 (0.71-2.67)	0.88 (0.43-1.81)
High parental rejection of child	15.9% (50 of 315)	21.0% (13 of 62)	1.41 (0.71-2.78)	0.96 (0.45-2.02)
Inconsistent parental discipline	16.5% (52 of 315)	19.4% (12 of 62)	1.21 (0.60-2.44)	0.66 (0.31-1.40)
Low parental affection toward child	18.4% (58 of 315)	35.5% (22 of 62)	**2.44 (1.35-4.41)**	1.85 (0.92-3.74)
Low parental assistance to child	16.8% (53 of 315)	33.9% (21 of 62)	**2.53 (1.39-4.62)**	**2.09 (1.03-4.25)**
Low parental communication with child	14.6% (46 of 315)	22.6% (14 of 62)	1.71 (0.87-3.34)	1.36 (0.63-2.97)
Low parental praise and encouragement of child	12.4% (39 of 315)	25.8% (16 of 62)	**2.46 (1.27-4.76)**	1.90 (0.90-4.03)
Low parental supervision of child	16.2% (51 of 315)	32.3% (20 of 62)	**2.46 (1.34-4.54)**	1.92 (0.94-3.92)
Low parental time spent with child	14.3% (45 of 315)	22.6% (14 of 62)	1.75 (0.89-3.43)	1.32 (0.60-2.93)
≥3 types of problematic child-rearing behavior	26.0% (82 of 315)	48.4% (30 of 62)	**2.66 (1.52-4.65)**	1.64 (0.49-3.17)

a. Controlling for parent and offspring age and sex and co-occurring parental disorders. Significant associations ($p < .05$) are indicated in bold print.

Table 4
Association of Parental Substance Use Disorder Evident by Mean Age 22 With Child-Rearing Behavior at Mean Age 33 ($N = 377$)

Child-Rearing Behavior	Prevalence of Child-Rearing Behavior Among Parents			
	Without Substance Disorder % (*n*)	With Substance Disorder % (*n*)	Bivariate Odds Ratio (95% CI)	Adjusted Odds Ratio[a] (95% CI)
Harsh physical punishment	11.2% (37 of 329)	14.6% (7 of 48)	1.35 (0.56-3.22)	1.25 (0.49-3.17)
High parental control of child	14.3% (47 of 329)	18.8% (9 of 48)	1.38 (0.63-3.04)	1.62 (0.69-3.82)
High parental possessiveness toward child	18.2% (60 of 329)	18.8% (9 of 48)	1.03 (0.48-2.25)	0.93 (0.40-2.15)
High parental rejection of child	15.8% (52 of 329)	22.9% (11 of 48)	1.58 (0.76-3.30)	1.22 (0.55-2.71)
Inconsistent parental discipline	14.9% (49 of 329)	31.3% (15 of 48)	**2.60 (1.31-5.14)**	**2.17 (1.03-4.56)**
Low parental affection toward child	20.1% (66 of 329)	29.2% (14 of 48)	1.64 (0.83-3.23)	1.27 (0.58-2.79)
Low parental assistance to child	18.8% (62 of 329)	25.0% (12 of 48)	1.44 (0.71-2.92)	1.06 (0.47-2.37)
Low parental communication with child	14.0% (46 of 329)	29.2% (14 of 48)	**2.53 (1.26-5.08)**	1.94 (0.89-4.22)
Low parental praise and encouragement of child	14.3% (47 of 329)	16.7% (8 of 48)	1.20 (0.53-2.72)	0.95 (0.39-2.32)
Low parental supervision of child	17.0% (56 of 329)	31.3% (15 of 48)	**2.22 (1.13-4.35)**	1.51 (0.70-3.25)
Low parental time spent with child	14.3% (47 of 329)	25.0% (12 of 48)	2.00 (0.97-4.12)	1.36 (0.60-3.10)
≥3 types of problematic child-rearing behavior	27.4% (90 of 329)	45.8% (22 of 48)	**2.25 (1.21-4.17)**	1.74 (0.85-3.58)

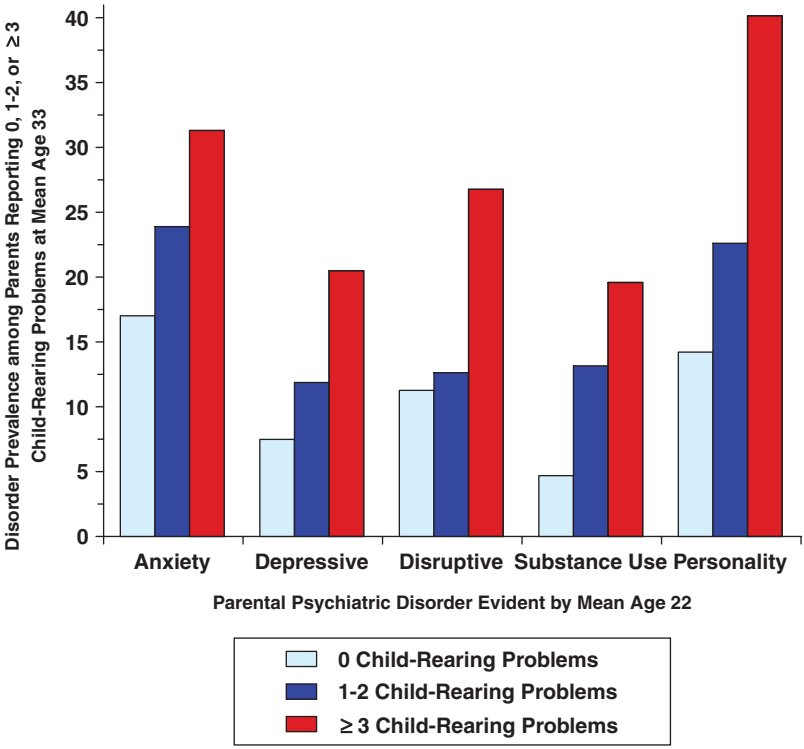
a. Controlling for parent and offspring age and sex and co-occurring parental disorders. Significant associations ($p < .05$) are indicated in bold print.

Table 5
Association of Parental Personality Disorder Evident by Mean Age 22 With Child-Rearing Behavior at Mean Age 33 ($N = 377$)

Child-Rearing Behavior	Prevalence of Child-Rearing Behavior Among Parents			
	Without Personality Disorder % (n)	With Personality Disorder % (n)	Bivariate Odds Ratio (95% CI)	Adjusted Odds Ratio[a] (95% CI)
Harsh physical punishment	11.0% (31 of 281)	13.5% (13 of 96)	1.26 (0.63-2.53)	0.99 (0.45-2.17)
High parental control of child	13.5% (38 of 281)	18.8% (18 of 96)	1.48 (0.80-2.73)	1.31 (0.65-2.64)
High parental possessiveness toward child	16.0% (45 of 281)	25.0% (24 of 96)	1.75 (1.00-3.06)	1.09 (0.58-2.07)
High parental rejection of child	14.6% (41 of 281)	22.9% (22 of 96)	1.74 (0.97-3.11)	1.29 (0.67-2.49)
Inconsistent parental discipline	13.5% (38 of 281)	27.1% (26 of 96)	**2.38 (1.35-4.18)**	1.73 (0.91-3.29)
Low parental affection toward child	17.4% (49 of 281)	32.3% (31 of 96)	**2.26 (1.33-3.83)**	1.51 (0.80-2.84)
Low parental assistance to child	15.7% (44 of 281)	31.3% (30 of 96)	**2.45 (1.43-4.19)**	**2.43 (1.27-4.66)**
Low parental communication with child	15.3% (43 of 281)	17.7% (17 of 96)	1.19 (0.64-2.21)	0.92 (0.45-1.90)
Low parental praise and encouragement of child	12.5% (35 of 281)	20.8% (20 of 96)	**1.85 (1.01-3.39)**	1.16 (0.58-2.32)
Low parental supervision of child	16.7% (47 of 281)	25.0% (24 of 96)	1.66 (0.95-2.90)	1.03 (0.54-1.99)
Low parental time spent with child	16.0% (45 of 281)	14.6% (14 of 96)	0.90 (0.47-1.72)	0.52 (0.24-1.13)
≥3 types of problematic child-rearing behavior	23.8% (67 of 281)	46.9% (45 of 96)	**2.81 (1.73-4.58)**	**1.84 (1.03-3.29)**

a. Controlling for parent and offspring age and sex and co-occurring parental disorders. Significant associations ($p < .05$) are indicated in bold print.

Figure 1
Associations of Parental Anxiety, Depressive, Substance Use, and Personality Disorders Evident by Mean Age 22 With Problematic Child-Rearing Behavior at Mean Age 33



parental disorders and parental and offspring age and sex were controlled statistically. Parental anxiety disorders evident by mean age 22 were significantly associated with the composite index of child-rearing behavior at mean age 33 in bivariate analyses ($t = 2.59$, $df = 375$, $p = .01$), but this association did not remain significant when the covariates were controlled.

The magnitudes of the overall associations between parental psychiatric disorders evident by mean age 22 and child-rearing problems at mean age 33 did not vary significantly across the diagnostic assessments conducted at mean ages 14, 16, and 22. Similar overall effect sizes (r), ranging from

.18 to .22, were obtained across the three assessments. The association of more than one parental disorder at mean age 22 with child-rearing difficulties at mean age 33 was not significantly stronger than the association of more than one parental disorder at mean age 14 with child-rearing difficulties at mean age 33.

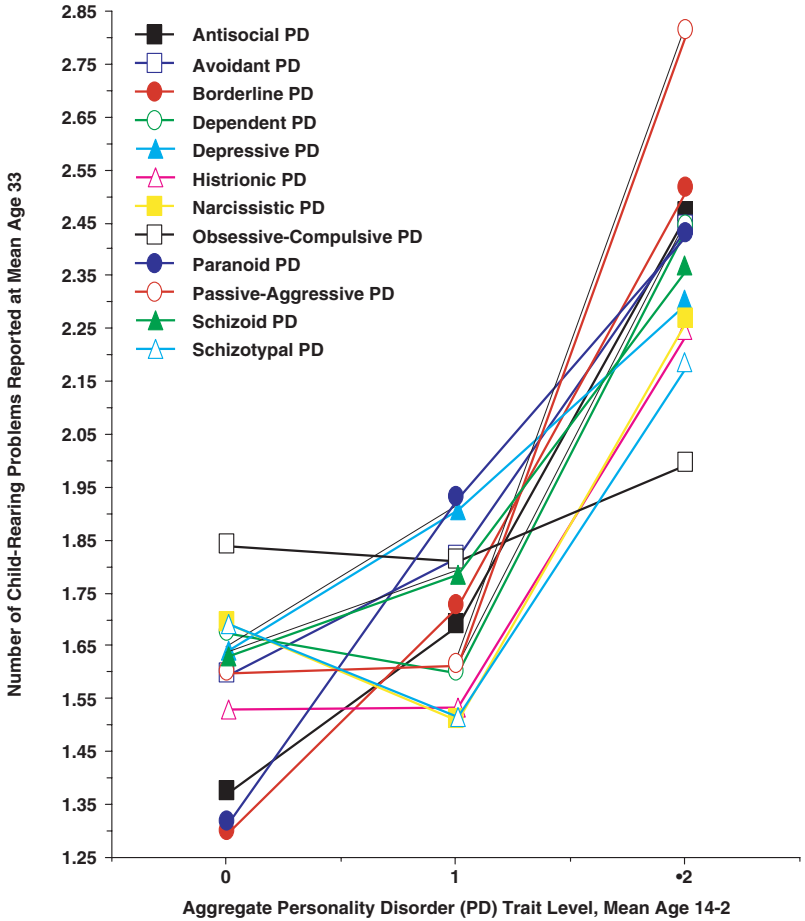
Associations of Parental PD Symptoms With the Child-Rearing Composite Index

Findings regarding the associations between aggregate parental PD trait levels between mean ages 14 and 22 and the composite index of child-rearing difficulties at mean age 33 are presented in Figure 2. Aggregate parental antisocial ($M = 1.37$ traits; $SD = 1.05$; $F = 3.18$; $df = 6, 370$; $p < .043$), borderline ($M = 1.38$ traits; $SD = 1.17$; $F = 4.03$; $df = 6, 370$; $p = .019$), dependent ($M = 1.29$ traits; $SD = 1.04$; $F = 3.33$; $df = 6, 370$; $p = .037$), paranoid ($M = 1.08$ traits; $SD = 0.94$; $F = 4.07$; $df = 6, 370$; $p < .018$), and passive–aggressive ($M = 0.97$ traits; $SD = 0.96$; $F = 6.73$; $df = 6, 370$; $p = .001$) PD trait levels between mean ages 14 and 22 were significantly associated with the total number of problematic child-rearing behaviors reported by the parents at mean age 33 when co-occurring parental disorders and parental and offspring age and sex were controlled statistically. All of these significant associations were linear, and there were no statistically significant quadratic (curvilinear) effects. Parental obsessive–compulsive PD traits ($M = 0.87$ traits, $SD = 0.65$) were not significantly associated with the composite index of child-rearing difficulties. Parental avoidant ($M = 0.99$ traits, $SD = 0.85$), depressive ($M = 0.81$ traits, $SD = 0.89$), histrionic ($M = 1.71$ traits, $SD = 1.12$), narcissistic ($M = 1.63$ traits, $SD = 1.27$), schizoid ($M = 1.05$ traits, $SD = 0.81$), and schizotypal ($M = 1.87$ traits, $SD = 1.03$) traits were significantly associated with the composite index of child-rearing difficulties in bivariate analyses, but these associations did not remain significant when the covariates were controlled.

Discussion

The present findings contribute, in a number of respects, to an increased understanding of the association of parental psychiatric disorders and child-rearing difficulties. First, our findings suggest that anxiety, depressive, disruptive, substance use, and personality disorders that become evident during adolescence or early adulthood may each be independently associated with elevated risk for the development of some types of child-rearing

Figure 2
Associations of Aggregate Parental Personality Disorder Symptom Levels Between Mean Ages 14 and 22 With Composite Index of Problematic Child-Rearing Behavior at Mean Age 33



difficulties during middle adulthood. Second, the present findings suggest that depressive, disruptive, personality, and substance use disorders that become evident by early adulthood may be associated with a pervasive elevation in overall problematic child-rearing behavior during middle adulthood. Third,

the present findings suggest that antisocial, borderline, dependent, paranoid, and passive–aggressive PD symptoms that become evident during adolescence and early adulthood may be independently associated with a pervasive elevation in overall problematic child-rearing behavior during middle adulthood. Fourth, our findings suggest that these associations are unlikely to be attributable to parental age or sex, offspring age or sex, or co-occurring parental psychiatric disorders.

Although our review of the literature indicates that this is the first prospective longitudinal study to investigate the association of parental disorders during adolescence or early adulthood with child-rearing behavior during middle adulthood, the present findings are consistent with previous evidence indicating that parental psychiatric disorders tend to be associated with the development of child-rearing difficulties (Cassidy et al., 1996; Ehrensaft et al., 2003; Johnson et al., 2001; Weinberg & Tronick, 1998). In comparison with previous longitudinal research, our findings are of particular interest because the presence of a psychiatric disorder at mean age 14, 16, or 22 predicted child-rearing difficulties at mean age 33. These findings suggest that psychiatric disorders that originate during adolescence or early adulthood may tend to have adverse long-term consequences with respect to subsequent parenting behavior. It will be of interest for future studies to investigate this hypothesis more extensively, to examine the mechanisms or processes that may mediate these associations, and to examine the association of parental psychiatric disorders that develop during the decade prior to childbirth with subsequent child-rearing behavior.

The present findings may have important clinical and public health implications. Previous research has suggested that preventive interventions and parenting skills programs may help parents to develop more effective child-rearing skills (Irvine et al., 1999; Redmond et al., 1999; Spoth et al., 1999). Our findings suggest that in addition to the short-term impairment and distress that are directly associated with the presence of a psychiatric disorder, adolescents and young adults with these disorders may also tend to be at persistently elevated risk for child-rearing difficulties when they raise their own families. Such findings may help to emphasize the importance of recognizing and providing appropriate treatment for psychiatric disorders among adolescents and young adults. It will be of interest for future longitudinal studies to investigate whether providing appropriate treatment to adolescents and young adults with mental disorders may have beneficial long-term effects on their child-rearing behavior, thereby reducing the likelihood of intergenerational transmission of risk for disorder to their offspring.

The present findings are also of interest because they contribute to a growing body of research supporting the hypothesis that parental PDs may

have important implications with respect to risk for problematic child-rearing behavior (Berg-Nielsen et al., 2002; Hans et al., 1999; Johnson et al., 2001; Mills et al., 1985). Our findings suggest that antisocial, borderline, dependent, paranoid, and passive–aggressive traits that become evident by early adulthood may tend to be associated with elevated overall risk for the development of child-rearing difficulties by middle adulthood. It will be of interest for future studies to investigate the associations of these and other parental PD symptoms with specific types of child-rearing behavior.

It is of interest to note that the prevalence of parental psychiatric disorder was elevated in the present study because data from a series of diagnostic interviews (conducted at mean ages 14, 16, and 22) were pooled, yielding composite or "lifetime" diagnoses based on multiwave data. For example, the pooled prevalence of PD evident by mean age 22 was 25.5% in the present study, whereas single-wave cross-sectional studies have indicated that the point prevalence of PD in the general adult population ranges from 7% to 15% (Torgerson, Kringlen, & Cramer, 2001). However, the present findings are consistent with previous findings from multiwave studies, which have supported the inference that single-wave cross-sectional studies tend to underestimate lifetime disorder prevalence rates in the general population (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Jaffee, Harrington, Cohen, & Moffitt, 2005).

The limitations of the present study require consideration. Data regarding child-rearing practices were obtained from parental interviews, and it is possible that the associations in the present report are attributable, in part, to the effects of parental psychiatric history on parents' reports of their child-rearing behavior. Although a wide range of child-rearing behaviors was assessed in the present study, using items from validated parenting measures, relatively few items were used to assess each type of child-rearing behavior. Some of the interitem consistency (i.e., α) coefficients were modest, and two types of child-rearing behavior were assessed using a single item (see the appendix). However, the composite index of child-rearing behavior demonstrated satisfactory internal consistency, enhancing confidence in the overall findings regarding parental disorders and problematic child-rearing behavior. Data regarding parental characteristics were obtained from one parent in the present study. It will be of interest for future studies to examine associations of parental psychiatric disorders with child-rearing behavior among both parents simultaneously. It is also important to note that the present study has unique methodological strengths, and it is the first prospective longitudinal investigation to investigate the association of psychiatric disorders evident during adolescence with child-rearing behavior during middle adulthood.

Appendix
Items Administered to Assess Parents' Child-Rearing Behavior

Child-Rearing Behavior	Interview Item	Response Format
Physical punishment	"I hit or smack my child if he/she does something I do not like."	*never* (1) to *often* (5)
Parental control of child	"I teach my child to have unquestioning loyalty to me."	*never* (1) to *often* (5)
	"I expect my child not to question my authority."	*never* (1) to *often* (5)
	"I expect my child to do what I say, no matter what."	*never* (1) to *often* (5)
Parental possessiveness toward child	"I worry about my child when I'm not around him/her."	*not at all like me* (1) to *exactly like me* (5)
	"I sometimes feel that I am the only one who can take really good care of my child."	*not at all like me* (1) to *exactly like me* (5)
Parental rejection of child	"I sometimes reject my child if he/she does something I do not like."	*never* (1) to *often* (5)
Consistency of parental discipline	"It sometimes depends on my mood how strict I am with my child."	*not at all like me* (1) to *exactly like me* (5)
	"I often change the rules or routines my child is supposed to follow."	*not at all like me* (1) to *exactly like me* (5)
Parental affection toward child	"I frequently show my love for my child."	*not at all like me* (1) to *exactly like me* (5)
	"I always hug and kiss my child good night."	*not at all like me* (1) to *exactly like me* (5)
Parental assistance to child	"I give my child a lot of care and attention."	*not at all like me* (1) to *exactly like me* (5)
	"I often give up something to get something for my child."	*not at all like me* (1) to *exactly like me* (5)
	"My child can count on me to take care of his/her needs in all situations."	*never* (1) to *often* (5)
	"I help my child with things if he/she can't do them."	*never* (1) to *often* (5)
Parental communication with child	"I like to talk to my child and to be with him/her much of the time."	*not at all like me* (1) to *exactly like me* (5)
	"I really try to understand how my child sees things."	*not at all like me* (1) to *exactly like me* (5)
	"I do not mind if my child tells me his/her ideas are better than mine."	*not at all like me* (1) to *exactly like me* (5)

Parental praise and encouragement of child	"I often praise my child."	*not at all like me* (1) to *exactly like me* (5)
	"I frequently tell my child he/she makes me happy."	*not at all like me* (1) to *exactly like me* (5)
Parental supervision of child	"Do you have rules for your child about homework?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about time spent watching TV?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about time for being in at night?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about not hanging around with certain kids?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about not smoking?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about not drinking alcohol or using drugs?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about telling you his/her whereabouts when he/she is away from home?"	*yes* (1) to *no* (2)
	"Do you have rules for your child about not watching violent TV?"	*yes* (1) to *no* (2)
Parental time spent with child	"I spend almost all of my free time with my children."	*not at all like me* (1) to *exactly like me* (5)
	"I am always available when my child needs me."	*not at all like me* (1) to *exactly like me* (5)
	"About how many hours a day on the average do you spend with your child? Include all activities."	*<1 hour a day* (1) to *≥8 hours a day* (5)
	"About how many hours a day on the average do you spend taking care of your child's physical needs? This would include such tasks as shopping for clothes, supervising his/her personal hygiene, preparing food, and the like."	*<1 hour a day* (1) to *≥8 hours a day* (5)

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