ORIGINAL ARTICLE

Childhood Depression and Adult Personality Disorder

Alternative Pathways of Continuity

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Background: This study extends previous findings of the risks posed by childhood major depressive disorder and other psychopathological features for later personality disorder (PD) in a random sample of 551 youths.

Methods: Self-reports and mother reports were used to evaluate *DSM-III-R* (Axes I and II) psychiatric disorders at mean ages of 12.7, 15.2, and 21.1 years. Logistic regression was used to examine the independent effects of major depressive disorder in childhood or adolescence on 10 PDs in young adulthood.

Results: Odds of dependent, antisocial, passive-aggressive, and histrionic PDs increased by more than 13, 10, 7, and 3 times, respectively, given prior major depressive disorder. Those effects were independent of age, sex, disadvantaged socioeconomic status, a history of child maltreatment, nonintact family status, parental conflict, preexisting PD in adolescence, and other childhood or adolescent Axis I psychopathological features, including disruptive and anxiety disorders. In addition, odds of schizoid and narcissistic PD increased by almost 6 times and odds of antisocial PD increased by almost 5 times given a prior disruptive disorder, and odds of paranoid PD increased by 4 times given a prior anxiety disorder.

Conclusion: Personality disorders may represent alternative pathways of continuity for major depressive disorder and other Axis I disorders across the child-adult transition.

Arch Gen Psychiatry. 2001;58:231-236

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STUDIES[1-7] of the long-term sequelae of childhood major depressive disorder (MDD) typically report increased risk of comorbid and postremission psychosocial disturbance that may continue into adulthood. Severe and persistent impairment in psychosocial functioning may place depressed youths at risk for more pervasive and enduring psychopathological features, as reflected by the Axis II personality disorders (PDs). However, little attention has been paid to assessing PDs as potential sequelae of preadult-onset MDD.

Psychosocial deficits[8] and high rates of comorbid PDs[9] have been reported among depressed samples of adults. In addition, several depressive conditions have been linked to dysfunctional personality traits (dependency, neuroticism, and introversion) and to cognitive and social styles closely related to those traits.[8,10,11] Furthermore, prospective longitudinal studies[12-15] have shown that adolescent depression is associated with persistent maladaptive functioning in young adulthood, indicative of personality pathologic features. However, those findings have used personality syndrome scales[13,14] or overall symptom counts of personality pathologic features[12] or were based on a small clinical sample.[15] It is important to augment that research by examining the association between childhood MDD and later personality pathologic features at the diagnostic level in a large representative sample.

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Findings from a recent study by our group[16] indicated predictive effects of childhood psychopathological features on young adult PDs. Major depressive disorder increased the odds of a PD in clusters A, B, and C in young adulthood by 3 ($P<.10$), 6 ($P<.01$), and 8 ($P<.001$) times, respectively. That approach, grouping specific PDs into the traditional clusters to maximize statistical power, was prudent in an initial investigation. However, it may have obscured more specific developmental pathways from childhood MDD to subsequent Axis II pathologic features in adulthood. Thus, because it is of signifi-

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PARTICIPANTS AND METHODS

PARTICIPANTS

Subjects were drawn from a longitudinal investigation of childhood risk and psychopathological features, initiated in 1975 in a random cohort of 976 families with at least one child aged between 1 and 10 years living in 2 upstate New York counties. Each mother was interviewed about one child randomly selected from each family. At that time, Axes I and II disorders were not assessed; however, the protocol included mother and youth diagnostic interviews in 3 follow-up studies, in 1983, 1985, and 1992. In 1983, 722 (74%) of the families were reinterviewed, 156 (16%) were lost to follow-up, and 49 (5%) refused to participate; the remaining 49 (5%) were not interviewed because of study time constraints (n=44), death of the study child (n=3), or severe mental retardation in the study child (n=2). Fifty-four new families, randomly sampled from poverty areas in the same 2 counties to replace the low-income families disproportionately lost to follow-up, were added to the 1983 sample for a total of 776 families. According to 1980 census data, those families are representative of families in sampled areas for income, structure, and residential urbanicity.[27] In 1985, 734 families (94.6%) from the 1983 follow-up and 42 families from the 1975 sample not interviewed in 1983 participated, for a total of 776 families. In all, 818 families participated at first or second follow-up or both; of those, 714 were interviewed and had complete diagnostic information available in 1992. Compared with youths from those families, the 104 youths not interviewed in 1992 (or with incomplete diagnostic information) did not differ on any variable examined except for sex and socioeconomic status: the proportion of males was greater (64.4% vs 49.0%; $\chi^2_1=8.62$; $P=.003$) and the socioeconomic status was lower ($t_{1,816}=-2.31$; $P=.02$).

The present sample is limited to the 551 youths who were aged 16 years or younger in 1983. Subjects were 52% female and predominantly white (91%) and Catholic (59%). Their mean age was 12.7 years (SD, 2.1 years) in 1983, 15.2 years (SD, 2.1 years) in 1985, and 21.1 years (SD, 2.2 years) in 1992.

PROCEDURE

After an explanation of study procedures, written consent was obtained from participants. Mother and youth interviews were conducted simultaneously but separately in family homes by pairs of trained lay interviewers. Mothers were interviewed about family background and psychiatric status of the youths. Youths were interviewed on parallel diagnostic instruments, and responded to interviews and self-report inventories about school, work, and social relationships.

ASSESSMENT OF AXIS I DISORDERS

In 1983 and 1985, *DSM-III-R* (Axis I) diagnoses,[28] including MDD, attention-deficit/hyperactivity disorder, conduct disorder, oppositional defiant disorder, overanxious disorder, and social phobia, were derived from mother and youth responses to the Diagnostic Interview Schedule for Children.[29] Responses to the Diagnostic Interview Schedule for Children were augmented with other information from the interview to adequately assess *DSM-III-R* symptoms. A positive response from either informant was taken as evidence of symptom presence. The decision to combine information was based on empirical evidence that parent and child each add unique and valid information to diagnoses.[30,31] To offset known problems of specificity in diagnostic interviews, only youths who met diagnostic criteria and had scaled symptom and impairment scores of 2 or more SDs above the sample mean were considered to have an Axis I disorder. Youths diagnosed as having an Axis I disorder were identified at the first or the second follow-up. Axis I predictors were MDD, disruptive disorder (attention-deficit/hyperactivity disorder, conduct disorder, or oppositional defiant disorder), and anxiety disorder (overanxious disorder or social phobia). Associations with

cant interest to ascertain which PDs are associated with prior MDD, specific PD diagnoses are examined in the present study.

Previously, we examined outcomes in youths classified by combinations of Axes I and II disorders. However, particularly with a general population sample, insufficient numbers precluded looking at every possible combination of disorders; thus, youths with comorbid disruptive or anxiety disorders were not omitted from the depressed group. In the present study, additive effects of disruptive and anxiety disorders are examined simultaneously to investigate the independent effects of MDD on later PD. Associations also are adjusted for preexisting PD in adolescence and for other childhood risks that may be potential confounders,[12,16,17] including disadvantaged socioeconomic status, childhood maltreatment, nonintact family structure, and parental conflict.

We focus herein on the independent effects of MDD in childhood or adolescence on individual PDs in young adulthood, including antisocial, avoidant, borderline, dependent, histrionic, narcissistic, obsessive-compulsive, paranoid, passive-aggressive, and schizoid PDs, measured prospectively in a random sample of 551 youths. Hypotheses are based on theories of depression that implicate dysfunctional cognitions, problematic interpersonal relationships, and social deficits[18-20] and on empirical evidence of comorbid and residual psychosocial impairment among depressed youths.[21-25] Because of reports of negative attributional style, low self-esteem, self-consciousness, and high dependency and approval needs, we expected an increased risk of avoidant, dependent, and histrionic PDs. Given the ineffectual coping, irritability, and interpersonal difficulties also reported, we expected an increased risk of passive-aggressive PD. Finally, because adolescent depression has been associated with later antisocial and other externalizing problem behaviors,[5,6,13] we expected an increased risk of antisocial PD.

Although examined primarily to adjust for independent effects of MDD, predictive effects of other childhood Axis I disorders on specific PDs in young adulthood also are of interest; thus, these results are reported. Because disruptive disorders imply a failure to meet social demands,

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earlier risk factors assessed prospectively,[32] and with treatment use,[33] support the reliability and criterion and construct validity of those diagnoses.

ASSESSMENT OF PDs

At all 3 follow-up visits, Axis II PD diagnoses meeting *DSM-III-R* criteria[28] were derived from mother and youth responses to interview items written for that purpose,[34] or adapted for adolescents from the Personality Diagnostic Questionnaire[35] or the Structured Clinical Interview for *DSM-III-R* Personality Disorders.[36] Specific PDs in clusters A (paranoid and schizoid), B (antisocial, borderline, histrionic, and narcissistic), and C (avoidant, dependent, obsessive-compulsive, and passive-aggressive) are examined. Schizotypal PD was not examined herein due to low prevalences. Antisocial PD was not measured in 1983 or 1985 because diagnostic age criterion was not met by most of the sample. Passive-aggressive PD has been classified as a "personality disorder not otherwise specified" in the *DSM-IV* taxonomy.[37] Relative to Axis I disorders, Axis II disorders are purported to be more inflexible and chronic; thus, only youths who met the diagnostic criteria for a specific PD in 1983 and again in 1985 (average interval, 2½ years) were identified as having a PD. The validity of Axis II diagnoses obtained in latency-aged children and adolescents has been supported by associations with concurrent social impairment and assaultive and suicidal behaviors.[38-41] As assessed herein, the validity of childhood and adolescent PD has been supported by associations with adolescent role dysfunction[34] and subsequent mental disorders and suicidal behaviors in young adulthood[42]; the validity of young adult PD has been supported by associations with childhood maltreatment[17] and childhood Axes I and II disorders.[16]

MEASUREMENT OF OTHER CHILDHOOD RISKS

Analyses were controlled for childhood risks reported to be associated with later PD, namely, maltreatment, nonintact family structure, parental conflict, and disadvantaged social status.[12,17] A measure of childhood maltreatment by the age of 18 years (reported indicates 1; and not reported, 0) was derived from official reports of abuse (physical and sexual) or neglect from the New York State Central Registry of Child Abuse and Neglect or from retrospective self-reports at the third follow-up. This measure and consent procedures are discussed in detail elsewhere.[43] A measure of family structure (not intact indicates 1; and intact, 0) was derived from 1975, 1983, and 1985 mother reports of divorce or never marrying (96% and 4%, respectively, of the 164 single parent mothers in the sample). Mothers responded to a 3-item scale measuring parental conflict ($\alpha = .55$) on 5-point Likert-type scales (eg, How often do the two of you argue? 1 indicates never; 2, less than once or twice a week; 3, once or twice a week; 4, several times a week; and 5, almost every day)[44]; an average of the 1983 and 1985 scores was used. Socioeconomic status was measured in 1983 by an additive scale comprised of parents' educational levels, fathers' occupational status, and family income.[45]

STATISTICAL ANALYSES

All analyses controlled for effects of age at outcome, sex, socioeconomic status, childhood maltreatment, family structure, parental conflict, and corresponding adolescent PD on young adult PD. Logistic regression was used to examine the simultaneous effects of MDD, disruptive disorder, and anxiety disorder; interactions between Axis I disorders and age and sex were examined next. Major depressive disorder may be a marker for comorbid psychopathological features that may not meet diagnostic criteria[1,2]; thus, effects of MDD also were adjusted for disruptive, anxiety, and PD symptom scores, constructed by averaging scores across the 1983 and 1985 assessments. In the interest of brevity, and because they have been examined elsewhere,[16] the effects of adolescent PD on later PD are not included in the table that notes those effects.

low frustration tolerance, and indifference to the basic rights of others, we expected an increased risk of antisocial, narcissistic, and schizoid PDs among youths with a disruptive disorder. Unwarranted fears and concerns is a central feature of anxiety disorder; based on that and reported associations between anxiety disorder and personality pathologic features,[26] we also predicted an increased risk of avoidant, dependent, obsessive-compulsive, and paranoid PDs among youths with an anxiety disorder.

RESULTS

MDD AND OTHER CHILDHOOD DISORDERS: PREVALENCES AND CORRELATIONS

Major depressive disorder, disruptive disorder, and anxiety disorder were identified in 5.8%, 11.8%, and 11.3% of the sample, respectively, in the 1983 or 1985 assessment (**Table 1**). Significant sex differences included higher rates in females with MDD (8.4% vs 3.0%; $\chi^2_1 = 6.21$; $P = .01$) and anxiety disorders (19.2% vs 10.6%; $\chi^2_1 = 7.22$; $P = .007$). Rates of PDs that met diagnostic criteria in the 1983 and 1985 assessments ranged from 5.6% for obsessive-compulsive PD to 0.7% for dependent PD (Table 1); there were no significant sex differences. Major depressive disorder correlated significantly with 10 of the 11 symptom scales and 8 of the 11 disorders examined (Table 1). (Prevalences of young adult PDs ranged from 8.9% for obsessive-compulsive PD to 2.0% for dependent PD, and are noted in **Table 2**).

CHILDHOOD MDD AND OTHER AXIS I DISORDERS AS A RISK FOR LATER PD

Among youths with MDD, odds of dependent, antisocial, passive-aggressive, and histrionic PDs in young adulthood increased by about 14, 10, 10, and 4 times, respectively (Table 2); increased odds remained significant, although they were reduced to about 11, 5, 5, and 3 times, respectively, after simultaneous consideration of concurrent disruptive, anxiety, and adolescent PD symptoms instead of disorders (**Table 3**).

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Odds of schizoid, narcissistic, and antisocial PDs in young adulthood increased by about 5 to 6 times among youths with a disruptive disorder (Table 2); in addition, with each SD increase in disruptive symptoms, the odds of antisocial, avoidant, schizoid, passive-aggressive, and narcissistic PDs increased by 185%, 111%, 78%, 66%, and 58%, respectively (Table 3). The odds of paranoid PD increased by 4 times among youths with an anxiety disorder (Table 2), and the odds of paranoid and obsessive-compulsive PDs increased by 45% and 42%, respectively, with each SD increase in anxiety symptoms.

Table 1. Prevalences of Disorders and Correlations Between MDD and Other Disorders in a Community Sample of 551 Youths*

Disorder	No. (%) of Youths	MDD Correlations: With Other Disorder Symptom Scales†	MDD Correlations: With Other Disorder Diagnoses†
Axis I‡			
MDD	32 (5.8)	. . .	. . .
Disruptive	65 (11.8)	0.31	0.27
Anxiety	62 (11.3)	0.22	0.21
Axis II§			
Avoidant	14 (2.5)	0.17	0.11
Borderline	15 (2.7)	0.31	0.20
Dependent	4 (0.7)	0.24	0.07
Histrionic	15 (2.7)	0.13	0.20
Narcissistic	15 (2.7)	0.21	0.15
Obsessive-compulsive	31 (5.6)	0.10	0.04
Paranoid	25 (4.5)	0.18	0.13
Passive-aggressive	12 (2.2)	0.25	0.28
Schizoid	5 (0.9)	0.08	0.06

*MDD indicates major depressive disorder; ellipses, data not applicable.
†All coefficients are greater than 0.09 at P<.05.
‡Identified in 1983 or 1985 when youths were a mean age of 12.7 or 15.2 years, respectively.
§Identified in 1983 and 1985.

There was no differential influence of Axis I disorders by age or sex.

COMMENT

Severe childhood or adolescent MDD heightened the risk of antisocial, histrionic, dependent, and passive-aggressive PDs in young adulthood, independent of concurrent disorders or symptoms and other childhood risks. Those outcomes support results from the Collaborative Longitudinal Personality Disorders Study,[46] which suggest that a history of MDD with insidious onset in adolescence and recurrence, chronicity, and progressive severity is particularly likely to be associated with adult PD. Results herein also are in accord with findings from other long-term prospective investigations[2,4-7,13-15] of adult consequences of childhood depression indicative of personality disturbances, and with reports[9,26,47] of comorbid PDs, including antisocial, borderline, histrionic, avoidant, and dependent PDs, in depressed samples of adults.

Patients with depression who are in remission exhibit high levels of interpersonal dependency and submissiveness and approval- and attention-seeking behaviors,[8] central features that characterize dependent and histrionic PDs, respectively. Excessive emotional reliance on others may be a consequence of the helplessness, low self-esteem, and need for approval experienced during and following depressive episodes.[24] On the other hand, compared with control subjects, patients with depression who are in remission also are reported to engage less in social situations and to have fewer close relationships.[8,48] Opposing tendencies may provoke conflict in interpersonal relationships and foster the pattern of argumentativeness, irritability, and avoidance of social responsibilities and of demands that characterize passive-aggressive PD. Perhaps, if conflicts and resistance intensify, that pattern may become more overt or aggressive in nature, as in antisocial PD. It also is possible that dysfunctional attitudes and ineffectual coping, noted to

Table 2. Simultaneous Consideration of Childhood Axis I Diagnostic Predictors of Young Adult PDs in a Community Sample of 551 Youths*

Young Adult PDs	No. (%) of Youths	Odds Ratio (95% Confidence Interval): Major Depressive Disorder	Odds Ratio (95% Confidence Interval): Disruptive Disorder	Odds Ratio (95% Confidence Interval): Anxiety Disorder
Paranoid	38 (6.9)	1.15 (0.32-4.21)	1.45 (0.54-3.93)	4.00 (1.70-9.38)†
Schizoid	22 (4.0)	1.57 (0.34-7.33)	5.84 (1.96-17.38)‡	2.42 (0.77-7.55)
Antisocial	44 (8.0)	10.45 (3.01-36.33)†	4.72 (2.00-11.14)†	0.21 (0.05-0.98)§
Borderline	20 (3.6)	2.83 (0.65-12.35)	1.56 (0.42-5.76)	0.90 (0.23-3.63)
Histrionic	36 (6.5)	3.96 (1.28-12.24)§	1.01 (0.34-2.99)	1.73 (0.66-4.51)
Narcissistic	32 (5.8)	0.64 (0.13-3.21)	5.63 (2.25-14.07)†	0.86 (0.25-3.04)
Avoidant	20 (3.6)	0.69 (0.11-4.32)	1.85 (0.49-6.96)	2.81 (0.91-8.71)
Dependent	11 (2.0)	14.51 (2.59-81.21)‡	1.34 (0.20-8.89)	1.51 (0.25-9.03)
Obsessive-compulsive	49 (8.9)	1.46 (0.46-4.70)	1.47 (0.58-3.72)	1.88 (0.82-4.30)
Passive-aggressive	25 (4.5)	9.82 (3.84-33.92)†	3.01 (0.98-9.25)	0.53 (0.13-2.23)

*Odds ratios are adjusted for age, sex, socioeconomic status, childhood maltreatment, nonintact family structure, parental conflict, corresponding adolescent personality disorder (PD) (with the exception of antisocial PD), and the other 2 Axis I disorders. Because antisocial PD was not measured in childhood or adolescence, effects of Axis I predictors on young adult antisocial PD were not adjusted for adolescent antisocial PD.
†P<.001.
‡P<.01.
§P<.05.

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Table 3. Simultaneous Consideration of the Effects of MDD and Concurrent Disruptive, Anxiety, and PD Symptoms on Young Adult PD in a Community Sample of 551 Youths*

	Odds Ratio (95% Confidence Interval)		
Young Adult PDs	Major Depressive Disorder	Disruptive Symptoms	Anxiety Symptoms
Paranoid	0.92 (0.26-3.30)	1.43 (0.96-2.13)	1.45 (1.03-2.06)†
Schizoid	2.04 (0.46-8.98)	1.78 (1.11-2.84)†	0.86 (0.54-1.38)
Antisocial	5.39 (1.51-19.32)‡	2.85 (1.90-4.27)§	0.55 (0.36-0.84)‡
Borderline	1.88 (0.40-8.85)	1.21 (0.71-1.21)	0.61 (0.36-1.03)
Histrionic	3.35 (1.06-10.57)†	0.95 (0.60-1.50)	1.30 (0.90-1.87)
Narcissistic	0.55 (0.11-2.68)	1.58 (1.03-2.45)†	1.21 (0.82-1.79)
Avoidant	0.49 (0.08-2.84)	2.11 (1.27-3.49)‡	1.04 (0.57-1.91)
Dependent	11.04 (1.91-63.81)‡	1.26 (0.59-2.69)	1.21 (0.57-2.59)
Obsessive-compulsive	0.90 (0.26-3.09)	1.40 (0.95-2.06)	1.42 (1.04-1.94)†
Passive-aggressive	4.82 (1.35-17.19)†	1.66 (1.01-2.73)†	1.11 (0.69-1.77)

**Disruptive, anxiety, and personality disorder (PD) symptom scales were standardized; thus, changes in odds of young adult PD across predictor scales are comparable. Odds ratios are adjusted for age, sex, socioeconomic status, childhood maltreatment, nonintact family structure, parental conflict, corresponding adolescent PD (with the exception of antisocial PD), and the other 2 Axis I disorders. Because antisocial PD was not measured in childhood or adolescence, effects of Axis I predictors on young adult antisocial PD were not adjusted for adolescent antisocial PD. MDD indicates major depressive disorder.*

†$P<.05$.

‡$P<.01$.

§$P<.001$.

be residuals of major depressive episodes,[8] may evolve into a pattern of irresponsible behaviors that also is characteristic of antisocial PD.

The hypothesized link with avoidant PD did not occur. The central features of avoidant PD are discomfort in and avoidance of social situations, which are compatible with problematic interpersonal relationships and social deficits, concomitants and consequences of MDD. However, avoidance of others is incompatible with other characteristics of childhood MDD, namely, extreme dependency needs and approval- and attention-seeking behaviors. Perhaps, as suggested herein, dealing with social situations in a passive-aggressive or antisocial manner is preferable to avoiding them completely.

Youths who had a disruptive disorder were at an increased risk of antisocial, narcissistic, and schizoid PDs in young adulthood. Those results are supported by others' reports[13-15,49-51] of antisocial PD, interpersonal difficulties, and impaired role performance in adulthood among youths with disruptive disorders. Although there are distinguishing characteristics among those PDs, there also is substantial overlap, particularly for irresponsible behavior and disturbed interpersonal relationships, that denotes indifference to or exploitation of others. Increased risk of a PD in young adulthood among youths with escalating disruptive symptoms also suggests that externalizing symptoms in childhood may be a marker for later, more pervasive psychopathological features.

Youths who had an anxiety disorder or escalating anxiety symptoms were at increased risk of paranoid PD. It is logical that paranoid personality formations, namely, anxiety, suspicion, and distrust, could evolve from childhood anxiety and fears. Youths with escalating anxiety symptoms also were at an increased risk of obsessive-compulsive PD. Behaviors and thoughts indicative of perfectionism and inflexibility, characteristics central to obsessive-compulsive PD, may develop to help control fears and anxieties. That phenomenon may be observed among high-functioning students who strive for academic perfection to the exclusion of other activities in an attempt to alleviate unwarranted fears of failure and to ensure success. Contrary to expectations, childhood anxiety disorder did not increase the risk of avoidant or dependent PD. Further exploration revealed that, although there was a significant association between anxiety disorders and later avoidant and dependent PDs, it was not independent of other childhood disorders. Moreover, the low prevalence of dependent PD in the young adults substantially lowered statistical power. Nevertheless, high rates of comorbid depression and conduct disorder have been reported in youths diagnosed as having anxiety disorder.[52] Thus, effects of anxiety disorder may further complicate the influence of MDD and disruptive disorders on later personality pathologic features.

Evaluation of Axis II disorders as potential consequences of childhood disorder, particularly MDD, is warranted. Personality disorders are characterized by interpersonal difficulties, impaired role performance, social deficits, and subjective distress, problems strikingly similar to those identified in depressed youths. The disturbed psychosocial functioning typically reported to cooccur in depressed youths or to emerge after an episode remits may interfere with developmental tasks relevant to subsequent role performance in adulthood. It is plausible that depressed youths may have difficulty in "catching up" and resuming age-appropriate cognitive, emotional, and social development; consequently, the risk that mature adult role functioning may be compromised increases. Postepisode treatment intervention may facilitate the resumption of normal cognitive, emotional, and social developmental processes and eliminate or reduce the risk of later more enduring and pervasive disorder.

These findings were based on a predominantly white (91%) and Catholic (59%) sample; therefore, caution in generalizing to other groups is recommended. Lifetime disorder was not evaluated; thus, it is probable that some youths met diagnostic criteria for disorders at other periods of childhood or adolescence. The absence of that

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information may have reduced associations between childhood and adult psychopathological features. On the other hand, diagnoses were obtained prospectively from multiple informants in a random community sample at 3 points over 10 years. Rigorous *DSM-III-R* diagnostic criteria were imposed, including a 2-SD severity cutoff and diagnosis-specific impairment for the Axis I disorders and persistence over a 2½-year interval for adolescent PDs. Finally, the present study offers convincing evidence of the pernicious nature of MDD and other childhood psychopathological features with regard to the debilitating influence on role functioning and mental well-being in adulthood, as represented by adult PD.

Accepted for publication August 4, 2000.

This study was supported by a grant from W. T. Grant Foundation, New York, NY; grant MH-36971 from the National Institute of Mental Health, Rockville, Md (Dr Cohen); and grant DA-03188 from the National Institute on Drug Abuse, Rockville (Dr Brook).

We thank Thomas N. Crawford, PhD, for his careful and highly constructive review of the revised version of the manuscript.

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