

# Family Discord, Parental Depression, and Psychopathology in Offspring: 20-Year Follow-up

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## ABSTRACT

**Objective:** To determine the independent effects of parental depression and family discord on offspring psychopathology among children at high and low risk of depression. **Method:** Family discord factors were assessed when subjects were approximately 17 years old, and offspring diagnoses were assessed about 20 years later. Parental and offspring psychopathology was assessed by interviewers blind to parents' clinical status. The following dimensions of family discord were assessed: poor marital adjustment, parent child discord, low family cohesion, affectionless control, and parental divorce. **Results:** Most family discord factors were associated with parental depression. Among children of depressed parents, none of the measures of family discord had a statistically significant association with offspring major depressive disorder or anxiety disorders. Among children of nondepressed parents, parental affectionless control was associated with an almost fivefold increased risk of major depressive disorder (odds ratio [OR] = 4.8;  $p \leq .05$ ) and with more than a 14-fold increased risk of substance use disorders (OR = 14.3;  $p \leq .01$ ). **Conclusions:** Parental depression is associated with family discord and is a consistent risk factor for offspring major depressive disorder and anxiety disorders, as shown over a 20-year follow-up of offspring of depressed and nondepressed parents. Family discord factors may be a risk factor for major depressive disorder and substance use disorders in offspring of nondepressed parents. *J. Am. Acad. Child Adolesc. Psychiatry*, 2006;45(4):452–460. **Key Words:** depression, parental depression, family discord, family functioning, substance use disorders, longitudinal studies.

An array of environmental factors is associated with adolescent depression, including stressful life events and peer and family relationships (Birmaher et al., 1996; Lewinsohn et al., 1999). Parental depression is a strong predictor of depression and other psychiatric disorders in offspring (Beardslee et al., 1998; Warner et al., 1999; Weissman et al., 1987, 1997). Marital discord is highly prevalent among depressed parents. Because parental

depression and family discord are highly related, it is difficult to estimate the contribution of the multiple factors associated with adolescent depression and to disentangle those caused by familial stressors from those caused by parental depression.

Parental depression may negatively affect family functioning and parenting (Keitner and Miller, 1990). Disturbances in parenting may include insufficient attention and decreased intensity of parent-child interaction (Beardslee and Wheelock, 1994; Downey and Coyne, 1990). Compared with controls, depressed mothers are less successful at disciplining their children and setting limits (Kochanska et al., 1987) and are more critical of their children (Gordon et al., 1989). This evidence is summarized in a number of comprehensive literature reviews (Beardslee et al., 1998; Goodman and Gotlib, 1999). Few studies have examined these factors separately in children of depressed and nondepressed parents. This is significant because the impact of familial stressors may differ in the presence of parental depression. Because parental depression is one of the

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strongest predictors of depression in the offspring, the impact of familial stressors may be less powerful in families with a depressed parent, as our previous research has shown (Fendrich et al., 1990; Nomura et al., 2002).

A longitudinal study of the offspring of depressed and nondepressed parents focusing on psychopathology and related risk factors has given us the opportunity to assess the impact of family discord, as measured by parents' poor marital adjustment, parent-child discord, affectionless control, low family cohesion, and parental divorce, on the offspring of parents with and without major depressive disorder (MDD). At baseline, when the mean age of offspring was approximately 17 years, we found that family discord factors were more prevalent in the offspring of depressed than in the offspring of nondepressed parents. When the impact of familial stressors was examined separately in the offspring of depressed and nondepressed parents, familial stressors were associated with higher rates of MDD and any diagnosis only among children of nondepressed parents (Fendrich et al., 1990).

At baseline, the offspring of the original probands had not passed thorough the entire period of risk of MDD and substance abuse. At the 10-year follow-up, the relationship between familial stressors (assessed at baseline) and offspring outcomes was examined again when the average offspring age was approximately 28 years (Nomura et al., 2002). When the impact of familial stressors was examined separately for offspring of depressed and nondepressed parents, none of the family discord factors was associated with offspring MDD or anxiety disorders in the children of depressed parents (Nomura et al., 2002). Overall, the findings of the baseline and the 10-year follow-up assessments suggest that family discord factors had a significantly greater impact on children of nondepressed compared with children of depressed parents. In contrast to offspring depression, familial stressors were of greater importance than parental MDD in predicting offspring substance use disorders in the 10-year follow-up (Nomura et al., 2002).

The current investigation corresponds to the 20-year follow-up, when most subjects had gone through the age of risk of initiation of MDD, anxiety disorders, and substance use disorders. We considered the same family risk factors, assessed when the children of the original probands were on average approximately 17 years old,

and their association with lifetime psychiatric diagnoses. We hypothesized that associations between family discord factors and offspring MDD would remain significant among children of nondepressed parents.

## METHOD

Parents and their children participated in a 20-year follow-up study of offspring of depressed (high-risk families) and nondepressed (low-risk families) probands. The study design and sample assessments have been described in detail elsewhere (Weissman et al., 1987, 1997, 2005, in press). The depressed parents had moderate to severe MDD that resulted in impairment and were receiving treatment at the Yale University Depression Research Unit. The control subjects were recruited at the same time from a sample of adults in the same community. They underwent at least four direct interviews and were required to have no lifetime history of psychiatric illness. The study was initiated in 1982 (baseline) and, with few exceptions, the procedures remained unchanged across the waves to avoid introducing method variation bias. Parents (generation 1) and offspring (generation 2) were interviewed independently, and the interviewers of offspring subjects were blind to the clinical status of the parents. Offspring were considered to be at high risk of depression if one or both parents had a lifetime history of MDD and at low risk when neither parent was depressed. As previously reported (Weissman et al., 2005), after the second wave, two spouses of nondepressed parents (normal control group) developed a first major depression. They and their four offspring were reassigned to the depressed proband generation 1 group. No reassignments have been made since then. The study was approved by the Institutional Review Board at the New York State Psychiatric Institute/Columbia University.

## Sample

The present report is based on 182 of the original 220 offspring, from a total of 83 families of the original 91 families, including 125 offspring from 61 high-risk families, and 57 offspring from 22 low-risk families. These 182 subjects include 151 interviewed at wave 4 (20 years after the baseline interview; mean age 34.1 years), and 31 interviewed at wave 3 but not interviewed at wave 4 (mean age 27.7 years). All of the psychiatric diagnoses are lifetime and include all of the diagnoses up to the last interview (wave 3 or 4). Family risk factors were assessed at baseline when the offspring mean age was 16.7 years ( $SD = 4.7$ ).

The baseline sample (wave 1) consisted of 220 offspring ages 6–23 years from 91 families (Weissman et al., 1987). They were interviewed again 2 and 10 years later (waves 2 and 3). Ten years after the baseline assessment, there was no significant difference in attrition rate by parental diagnosis (Weissman et al., 1997). Seventy percent (151 of 215) of the original available cohort of offspring were reinterviewed about 20 years after the initial interview (wave 4). There were no significant differences between interviewed and noninterviewed offspring by age, parental diagnosis, and depression status of offspring at last interview. Significantly more females (57.6%) than males (43%) were interviewed ( $p = .019$ ) at wave 4 (Weissman et al., in press). The first generation was interviewed at each wave except wave 4 because they were on average 63 years old and had passed the age of risk of first-onset MDD. The second generation was interviewed at all waves.

## Assessments

**Psychiatric Diagnoses.** Adult psychiatric diagnoses were obtained using a semistructured diagnostic assessment (Schedule for Affective Disorders and Schizophrenia–Lifetime version for adults; Mannuzza et al., 1986) and the child version of this interview, known as the Schedule for Affective Disorders and Schizophrenia for School-Age Children, was used with subjects between ages 6 and 17 years (Orvaschel et al., 1982).

**Family Discord.** A summary of the measures is shown in Table 1, and additional details are available elsewhere (Fendrich et al., 1990). Only two sets of measures were significantly correlated. The correlation coefficients and level of significance were as follows: (1) poor marital adjustment and low cohesion (0.20;  $p < .05$ ) and (2) affectionless control and low cohesion (0.22;  $p < .01$ ).

Marital adjustment was assessed using the Short Marital Adjustment Test (Locke and Wallace, 1959). Scores were divided into tertiles and offspring with parents at or below the lowest tertile were considered exposed to poor marital adjustment and were coded as 1. All others were scored as 0. Parent–child discord was assessed using a binary index of parent–child discord (Table 1). When mothers reported much arguing, fighting, or tension with at least one child in the family, parent–child discord was scored as 1 and all others in the sample as 0. Low family cohesion was assessed using the Cohesion subscale of the Family Adaptability and Cohesion Evaluation Scale (Olson et al., 1979). Because low cohesion was considered indicative of family disintegration, offspring scoring at or below the sample median was scored as 1 and all others as 0. Affectionless control was assessed using the

Parental Bonding Instrument (PBI), a self-rating scale (Parker, 1983) given to offspring to measure perceived relationships and experiences with parents. Using the previously established cutoff scores (Parker et al., 1979), children who scored at least one parent low on caring and high on control on the Parental Bonding Instrument were counted as having a parent with affectionless control. A binary score was created with a score of 1 indicating the presence of affectionless control and a score of 0 its absence. Divorce was considered present when biological parents reported a divorce and scored as 1, with all others scored as 0. Additional information about scoring procedures can be found elsewhere (Fendrich et al., 1990).

## Interviewers and Best Estimates Procedures

The diagnostic assessments of parents were administered by trained doctoral and master's degree-level mental health professionals trained as previously described (Weissman et al., 1997). Whenever a history of mental health treatment was reported, study participants were asked to consent to have the relevant information released, and most consented. Two experienced clinicians who were not involved in the interviewing, independently, and blind to the diagnostic status of the previous generation or prior assessments, reviewed all of the material and assigned a *DSM-IV* diagnosis based on the best estimate procedure (Leckman et al., 1982), as reported elsewhere (Weissman et al., 2005, in press). The diagnoses are cumulative across all waves.

## Statistical Analyses

Associations between parental depression and each measure of family discord factor were examined using  $\chi^2$  tests. We then tested to see whether the effect of each measure of family discord on offspring psychopathology at time 20 was modified by parental depression as we examined previously at time 10 (Nomura et al., 2002). First, we stratified on parental depression and conducted multivariate analysis using logistic regression to examine differences in diagnoses between offspring with or without each measure of family discord factors. Furthermore, logistic regression with an additional cross-product term between parental MDD and each measure of family discord in the model, representing the interaction between these two variables, was performed to determine whether the association between offspring disorder and the measure of family discord varied by parental depression status. In all multivariate analyses, the age and sex of the offspring and the socioeconomic status of parents were considered potential confounders and statistically controlled. For substance use disorders in offspring, parental substance use disorders were also included in a logistic regression model as an additional potential confounder. The age of the offspring was entered as a continuous variable, socioeconomic status was entered as a categorical variable, and sex and substance use disorders in parents (at least one versus neither parent had a substance use disorder) were entered as dichotomous variables. To evaluate the magnitude of the risk of MDD, anxiety disorder and substance use disorders, an OR was obtained for offspring with each measure of family discord relative to those without it.

To assess the relative importance of the two risk factors (family discord and parental depression) in offspring psychopathology, a series of hierarchical logistic regressions were performed. Assessment of the overall change in model fit (i.e., the change in the likelihood ratio statistic) with the addition of individual measures of family discord or of parental depression status was made for each of 15

**TABLE 1**

Assessment of Family Discord<sup>a</sup>

Domain	Instrument/Question	Respondent
Marital adjustment	Short and Marital Adjustment Test (SMAT) <sup>b</sup>	Parent (G1)
Parent–child discord <sup>c</sup>	“Was there ever a time when you and your husband (wife) had frequent arguments or when there was a lot of tension between you? When did that begin? How long did it go on? Were there other times when that was true? (Record for each occurrence)”	Parent (G1)
Family cohesion	Family Adaptability and Cohesion Scale (FACES), Cohesion subscale <sup>d</sup>	Child (G2)
Affectionless control	Parental Bonding Instrument <sup>e</sup>	Child (G2)
Divorce	Demographic inventory	Parent (G1)

*Note:* G1 = generation 1, the probands recruited at the Yale Child Study center (see Method); G2 = generation 2, children of the G1 probands.

<sup>a</sup> All assessments were done at baseline when the mean age of the children (G2) was 16.7 years.

<sup>b</sup> Locke and Wallace, 1959.

<sup>c</sup> Single item.

<sup>d</sup> Olson et al., 1979.

<sup>e</sup> Parker et al., 1979, 1983.

regression models. The increment in the model log likelihood statistic from the addition of a variable to a logistic model is distributed as a  $\chi^2$  with 1 *df*.

Last, we examined how many new cases (i.e., incident cases) of psychopathology in offspring occurred between the last (10-year follow-up) and the present interview (20-year follow-up). Univariate analyses using  $\chi^2$  tests were conducted to examine the difference in new-onset cases of MDD or dysthymia, anxiety disorder, and substance use disorder between offspring with or without each measure of family discord. Fisher exact test was applied when the number of cases in any cell was five or fewer.

More than one offspring from the same family was included in this study, and consequently the assumption of independence of observations that underlies the computation of standard errors and confidence intervals in the usual manner may be violated. Consequently, standard errors for rates of psychopathology in offspring were computed using the Taylor series linearization method (Woodruff, 1971), and standard errors and confidence intervals for parameters estimated from the logistic analyses were computed using the method of weighted maximum likelihood, adapted for survey and clustered data (Binder, 1983) via implicit Taylor series. All analyses, except for the examination of new cases, were completed adjusting for the possible nonindependence of

outcomes of family members, and were performed using the software package SUDAAN (Shah et al., 1996).

**RESULTS**

**Family Discord in Offspring by Parental Depression Status**

Of the 182 offspring, 86 were men and 96 were women. The mean age at time 20 was 34.1 years (SD = 5.6). Because family risk factors were measured at baseline (wave 1) and there was no change in parental depression status since the last wave, the distribution of family discord in offspring according to parental depression status has not changed since the 10-year follow-up (Nomura et al., 2002). Briefly, children of depressed parents were more likely to be exposed to poor marital adjustment (OR = 13.1; *p* = .004), low family cohesion (OR = 2.2; *p* = .03), parental divorce (OR = 5.5; *p* = .01), and affectionless control (OR = 2.4;

**TABLE 2**  
Diagnoses (Lifetime Rates/100) and Adjusted Odds Ratios for Children (Generation 2) Exposed Versus Unexposed to Family Discord Factors by Parents' (Generation 1) Diagnostic Status

	Poor Marital Adjustment			Parent-Child Discord			Low Family Cohesion			Affectionless Control			Parental Divorce		
	Yes	No	OR	Yes	No	OR	Yes	No	OR	Yes	No	OR	Yes	No	OR
	( <i>n</i> = 45)	( <i>n</i> = 54)		( <i>n</i> = 37)	( <i>n</i> = 87)		( <i>n</i> = 57)	( <i>n</i> = 42)		( <i>n</i> = 32)	( <i>n</i> = 67)		( <i>n</i> = 49)	( <i>n</i> = 76)	
<b>≥1 Parent Depressed</b>															
MDD	48.9	66.7	0.5	54.1	62.1	0.7	68.4	50.0	2.2*	59.4	61.2	0.9	65.3	56.5	1.4
Anx	59.3	60.0	1.0	48.6	62.1	0.6	59.6	59.5	1.1	62.5	58.2	1.2	53.1	60.5	2.3
Sub	33.3	33.3	1.0	35.1	34.5	1.0	45.6	23.8	2.5**	43.8	32.8	1.6	38.8	32.9	1.3
Dys	33.3	31.5	0.4	35.1	28.7	0.7	28.1	40.5	0.8	50.0	25.4	1.1	30.6	30.3	1.2
MDD or Dys	60.0	72.2	0.5	64.9	69.0	0.8	70.2	71.4	1.0	75.0	68.7	1.4	73.5	64.5	1.5
<b>Neither Parent Depressed</b>															
	Yes	No	OR	Yes	No	R	Yes	No	OR	Yes	No	OR	Yes	No	OR
	( <i>n</i> = 3)	( <i>n</i> = 47)		( <i>n</i> = 12)	( <i>n</i> = 45)		( <i>n</i> = 21)	( <i>n</i> = 34)		( <i>n</i> = 9)	( <i>n</i> = 46)		( <i>n</i> = 6)	( <i>n</i> = 51)	
MDD	0	25.5	— <sup>a</sup>	33.3	24.4	3.0	33.3	23.5	1.2	55.6	21.7	4.8**	16.7	27.5	0.5
Anx	33.3	23.4	1.6	16.7	24.4	0.7	14.3	29.4	0.4	22.2	23.9	0.8	33.3	21.6	0.7
Sub	0	33.3	— <sup>a</sup>	50.0	33.3	1.8	47.6	26.5	2.7	77.8	26.1	14.3***	33.3	37.3	0.7
Dys	33.3	21.3	2.7	25.0	24.4	0.7	33.3	17.6	2.4	55.6	17.4	3.2	33.3	23.5	1.2
MDD or Dys	33.3	31.9	1.3	33.3	37.8	1.0	47.6	29.4	2.3	66.7	30.4	4.3*	50.0	35.3	2.0

*Note:* All odds ratios (OR) were adjusted for offspring's sex, age, and socioeconomic status. In addition, they were adjusted for parents' substance use disorders in analyses in which substance use disorders in offspring was the outcome variable. MDD = major depressive disorder; Anx = anxiety disorders; Sub = substance use disorders; Dys = dysthymia.

<sup>a</sup> Unable to estimate OR because no offspring who were exposed to poor marital adjustment developed MDD or substance use disorder in families in which neither parent was depressed.

\* .05 < *p* ≤ .10; \*\* .01 < *p* ≤ .05; \*\*\* .001 < *p* ≤ 0.01.

$p = .06$ ) than children of nondepressed parents. Parental depression was not significantly associated with an increased risk of parent-child discord (OR = 1.45;  $p = .47$ ).

An examination of the effects of family discord on diagnoses in children of depressed parents revealed that none of the measures of family discord had a statistically significant association with offspring MDD or other disorders, except substance use disorders (Table 2). Low family cohesion was associated with a significantly increased risk of substance use disorders (OR = 2.5;  $p \leq .05$ ). In contrast, in children of nondepressed parents, parental affectionless control was associated with an almost fivefold increased risk of MDD and with more than a 14-fold increased risk of substance use disorders. These analyses were controlled for potential confounders including sex and age of offspring, socioeconomic status, and parental substance use disorders (for offspring substance use disorders only). Formal tests of interaction were performed to determine whether the difference in association between affectionless control and MDD in offspring varied with

parental depression while controlling for potential confounders and were found to be marginally significant ( $p = .056$ ). The differences in association between affectionless control and substance use disorder in offspring by parental MDD were found to be significant ( $p = .023$ ). These two associations (affectionless control and offspring depression, affectionless control and offspring substance abuse) were evident only in low-risk offspring.

The analyses shown in Table 2, however, do not address the relative importance of family discord and parental depression for the development of offspring psychopathology. Table 3 addresses this through two sets of hierarchical logistic regressions. The first column of Table 3 list coefficients that indicate the improvement in model fit with the addition of parental depression and reflects the impact of parental depression on the prevalence of offspring disorders above and beyond the impact of each of the five measures of family discord considered in this study. The second column lists coefficients that indicate the improvement in the model with the addition of each measure of family

**TABLE 3**  
Models Assessing the Relative Importance of Family Discord Factors and Parental Psychopathology

Diagnostic Outcome in G2/Family Risk Factor in Model	Parental Depression ( $\chi^2$ Change)	Family Risk ( $\chi^2$ Change)	Parental Depression OR (95% CI)	Family Risk OR (95% CI)	No.
<b>Major depressive disorder</b>					
Poor marital adjustment	16.95†	3.06*	6.07† (2.61–14.62)	0.48* (0.21–1.06)	149
Parent-child discord	15.40†	0.056	4.16† (2.11–8.74)	0.92 (0.44–1.83)	181
Low family cohesion	12.39†	2.78*	3.80† (1.83–8.05)	1.8* (0.93–3.20)	154
Affectionless control	13.29†	0.618	3.96† (1.94–8.45)	1.4 (0.61–2.88)	154
Divorce	14.12†	0.071	4.07† (1.98–8.53)	1.1 (0.58–2.40)	182
<b>Anxiety disorder</b>					
Poor marital adjustment	11.32***	0.34	4.26*** (2.03–10.74)	1.3 (0.47–2.28)	149
Parent-child discord	17.78†	0.90	5.06† (2.47–10.98)	0.7 (0.30–1.25)	181
Low family cohesion	15.88†	0.52	4.87† (2.32–10.71)	0.8 (0.41–1.72)	154
Affectionless control	15.00†	0.04	4.56† (2.22–10.05)	1.1 (0.52–2.44)	154
Divorce	16.95†	0.42	5.14† (2.39–11.01)	0.8 (0.41–1.72)	182
<b>Substance use disorder</b>					
Poor marital adjustment	0.48	0.22	0.74 (0.38–1.98)	0.81 (0.38–1.98)	149
Parent-child discord	0.55	0.61	0.76 (0.46–1.77)	1.34 (0.59–2.37)	181
Low family cohesion	0.19	5.06**	0.84 (0.45–2.00)	2.33** (1.21–5.20)	154
Affectionless control	0.28	6.32***	0.81 (0.45–1.97)	2.74*** (1.23–5.81)	154
Divorce	0.36	0.01	0.80 (0.45–1.81)	0.96 (0.56–2.31)	182

*Note:* All models include a dichotomous indicator of parental depression ( $\geq 1$  parent depressed versus neither parent depressed) and a family risk factor, controlling for age, sex, and socioeconomic status. In addition, they were adjusted for parents' substance use disorders in analyses in which substance use disorders in offspring was the outcome variable. OR = odds ratio; CI = confidence interval; G2 = generation 2, children of the generation 1 probands.

\*  $p < .10$ ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; †  $p < .001$ .

**TABLE 4**  
Associations Between Family Discord Factors and Offspring Psychopathology in Three Follow-up Studies

Follow-up	Family Discord Factors	Offspring Diagnosis	OR <sup>a</sup>
<b>≥1 Parent depressed</b>			
Baseline <sup>b</sup>	Parent-child discord	Conduct disorder	5.7
10-year <sup>c</sup>	Low family cohesion	SUD	3.6
20-year <sup>d</sup>	Low family cohesion	SUD	2.5
<b>Neither parent depressed</b>			
Baseline <sup>b</sup>	Low family cohesion	MDD	3.8
	Affectionless control	MDD	5.0
	Divorce	Conduct disorder	6.1
10-year <sup>c</sup>	Parent-child discord	MDD	4.0
	Affectionless control	MDD	6.3
	Poor marital adjustment	Anxiety disorders	4.8
20-year <sup>d</sup>	Low family cohesion	SUD	3.2
	Affectionless control	SUD	12.4
	Affectionless control	MDD	4.8
	Affectionless control	SUD	14.3

*Note:* All ORs adjusted for offspring's sex, age, and socioeconomic status. In addition, they were adjusted for parents' substance use disorders in analyses in which substance use disorders in offspring was the outcome variable. In year 2, ORs were also adjusted for number of siblings in the family. OR = odds ratio; SUD = substance use disorders; MDD = major depressive disorder.

<sup>a</sup> ORs are included in this table only if  $p \leq .05$ .

<sup>b</sup> Fendrich et al., 1990.

<sup>c</sup> Nomura et al., 2002.

<sup>d</sup> Present study.

discord and reflects the impact of each measure of family discord on the prevalence of offspring disorders above and beyond the effect of parental depression. The last two columns of Table 4 indicate the ORs and 95% confidence intervals (CI) generated from each of the main effects (parental depression and family discord measures), predicting each diagnostic outcome in offspring.

The addition of parental depression improved the models predicting offspring MDD and anxiety disorders regardless of the family risk factor included in the

model. Nine of the 10  $\chi^2$  coefficients showed significance beyond the .001. In contrast, none of the coefficients generated from models adding family discord measures was a significant predictor of offspring MDD and anxiety disorders. These results indicate that parental depression predicted offspring depressive and anxiety disorders, and family discord factors did not add significantly to the prediction based on parental depression alone. The reverse is true for substance use disorders. When predicting these disorders, the coefficients for models adding parental depression were

**TABLE 5**  
New Cases<sup>a</sup> of Offspring Psychiatric Disorders According to Parental Depression Status

Offspring Disorder	≥1 Parent Depressed	Neither Parent Depressed	$\chi^2$ Statistics	<i>p</i>	OR (95% CI)
	No. (%)	No. (%)			
MDD or dysthymia <sup>b</sup> ( <i>n</i> = 99)	7 (12.5)	1 (2.3)	3.4	.13 <sup>c</sup>	6.0 (0.7–50.7)
Anxiety disorders ( <i>n</i> = 113)	13 (19.7)	3 (6.4)	4.0	.057 <sup>c</sup>	3.6 (0.96–13.4)
Substance use disorders ( <i>n</i> = 125)	4 (4.7)	4 (10.0)	1.3	.26 <sup>c</sup>	0.4 (0.1–1.9)

<sup>a</sup> First onset of disorder after the 10-year follow-up assessment (number of cases shown here does not include offspring with first onset of disorder before the 10-year follow-up).

<sup>b</sup> There was a single new case of dysthymia, and this case was found in the offspring of depressed parents.

<sup>c</sup>  $\chi^2$  test and its associated *p* value was based on Fisher exact test because at least one cell count was <5.

small and nonsignificant, whereas coefficients for affectionless control ( $\chi^2 = 6.32, p < .01$ ) and family cohesion ( $\chi^2 = 5.06, p < .05$ ) added more than parental depression. These results indicate that two family discord factors (low family cohesion and affectionless control) predicted offspring substance use disorders, and parental depression did not add significantly to the prediction based on each of these two family discord factors alone.

To put these findings in perspective, we have summarized the impact of family discord on psychiatric disorders in high- and low-risk offspring at the 2-, 10-, and 20-year follow-up assessments (Table 4). As found in the two previous follow-up assessments, the analyses stratified by parental depression suggest that family discord was more adverse for children of nondepressed parents than for children of depressed parents.

Table 5 shows cases newly diagnosed since the 10-year follow up was completed (incident cases). The number of incident cases was relatively small and mostly confined to offspring of depressed parents. Incident cases with depressive and anxiety disorders were more frequent among children of depressed parents compared with children of nondepressed parents, and the difference was marginally significant ( $p = .057$ ) in the case of anxiety disorders.

## DISCUSSION

Our findings at the 20-year follow-up are consistent with the overall pattern found at the 2- and 10-year follow-ups (i.e., family discord factors were associated with offspring MDD only in children of nondepressed parents). Over the 20-year follow-up, two trends are noteworthy. First, the impact of family risk factors, even in children of nondepressed parents, has diminished over time (Table 4). Second, the impact of parental affectionless control on offspring psychopathology has persisted over the 20-year follow-up interval.

A diminishing impact of family discord factors over time may explain the lack of association between family discord factors previously found to be associated with offspring disorder. For example, poor marital adjustment, a factor associated with offspring anxiety disorders among children of nondepressed parents at the 10-year follow-up (OR = 4.8;  $p \leq .05$ ), was not significantly associated with these disorders at the 20-year follow-up (OR = 1.6;  $p = .69$ ). Poor marital

adjustment may have a greater impact on adolescents and young adults (10-year follow-up), compared to its impact on adults who have formed their own families (20-year follow-up). Alternatively, the lack of association between family discord factors previously found to be associated with offspring disorders may reflect insufficient statistical power to detect these associations at the 20-year follow-up.

Affectionless control increased the risk of MDD and greatly increased the risk of substance use disorders among children of nondepressed parents. Affectionless control is a parental bonding style that may be transmitted from one generation to another (Miller et al., 1997). In this study, affectionless control has been a persistent risk factor for offspring MDD among children of nondepressed parents and has been robustly associated with offspring substance abuse. The mechanism underlying the association between affectionless control in childhood and later MDD has not been determined. Parker (1983) suggested that affectionless control may create an "anxious attachment," which would contribute to the expression of a depression diathesis. Whether there is a causal link between affectionless control and depression is unclear, but clearly it was a frequent antecedent of MDD and of substance use disorders among children of nondepressed parents participating in this study, and others have reported that it is a risk factor for both substance use disorders (Torresani et al., 2000) and adolescent depression (Patton et al., 2001).

During the study's 20 years we have found few significant associations between family discord factors and offspring MDD in children of depressed parents. A recent study concluded that family discord was significantly associated with youth depression among children of depressed mothers (Hammen et al., 2004). Hammen and colleagues studied a community sample of 816 women and their 15-year old adolescents. The adolescents in the Hammen et al. study were age 15 as compared with a wide age range in the offspring in our sample. Because the incidence of depression increases markedly following puberty, most of the 15-year-old adolescents in the Hammen et al. study are likely to suffer from adolescent-onset depression. This is important because adolescent-onset depression may be different from childhood and adult-onset depression (Weissman and Wickramaratne, 2000). Parental MDD is associated with increased risk of offspring childhood-onset MDD (eightfold), and early adult-onset MDD

(fivefold) but not with adolescent-onset MDD. In adolescence, there is a marked increase in the risk of MDD, especially in girls, regardless of parental diagnosis (Wickramaratne and Weissman, 1998). There may be several paths leading to childhood and adolescent depression. Childhood and early adult-onset MDD may be etiologically homogeneous and familial subtypes. Adolescent-onset MDD, particularly in girls, is common, regardless of parental depression status, and may be influenced by other factors, including hormonal changes, emotional and psychosocial factors, and family adversities.

Whereas the Hammen et al. sample included women with dysthymia or MDD, our sample included only treatment-seeking parents with MDD who met stringent impairment criteria when recruited. Family discord factors may affect the offspring of moderately depressed women in the community differently from their effect on offspring of treatment seeking parents. If the parents are not as severely depressed, then the impact of family discord on offspring psychopathology may be greater.

#### Limitations

The most significant limitation of this study is the small number of offspring with family discord in low-risk families (Nomura et al., 2002). Because parental depression and family discord are related, exposure to each family discord measure was lower in low-risk than in high-risk families. Even though the sample size limited our ability to study relationships between family discord factors and offspring psychopathology in low-risk families, the association between affectionless control and both MDD and substance abuse in these families was robust and statistically significant.

Measures of family discord were completed by the depressed parents (marital adjustment and parent-child discord) and their children (low cohesion and affectionless control). Depressed individuals may have a negative view of themselves and their families. We do not know to what extent this was the case here, but other investigators have consistently reported an association between parental depression and family discord factors (e.g., Davies and Windle, 1997; Lovejoy et al., 2000; Seifer et al., 1996).

Our measures of family discord were not comprehensive, and parent-child discord was measured in a limited way (Table 1). Had family discord been measured using a more comprehensive assessment, it may have been a more significant predictor of offspring

psychopathology. In addition, low family cohesion and affectionless control partially overlap as evidenced by their modest but significant correlation. Both may measure elements of the care-control spectrum of family functioning, with the Parental Bonding Instrument measuring both constructs (care and control), and the cohesion subscale of Family Adaptability and Cohesion Scale measuring care. Given these limitations and the small number of offspring with family discord in low-risk families, our findings should be viewed cautiously.

Because this is a clinical sample, it is likely that the severity of parental depression is greater than would be found in a community sample. A more severe depression that comprises impairment may be more familial and may have a greater impact on the offspring (Weissman et al., 2005), thus overshadowing the impact of family discord factors. Therefore, our findings may not apply to children of depressed parents in the community.

#### Clinical Implications

Among severely depressed parents, the impact of parental depression on offspring may outweigh the impact of family discord factors. Thus, we suggest treating the depressed parent before addressing family discord. Family therapy may not yield the best results when depressed parents are likely to be irritable and to lack the motivation needed to change the way they relate to family members.

The persistent impact of affectionless control in low-risk families over a 20 year-period suggests avenues for prevention of MDD and substance abuse in these families. There is some evidence of intergenerational transmission of this parental bonding style (Miller et al., 1997). Blocking this transmission through early intervention is a goal that merits exploration.

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**Psychosocial Correlates of Adolescent Males' Pregnancy Intention** Cynthia Rosengard, PhD, Maureen G. Phipps, MD, MPH, Nancy E. Adler, PhD, Jonathan M. Ellen, MD

**Objective:** To identify psychosocial differences between sexually experienced male adolescents who indicate intentions to get someone pregnant and those who do not. **Methodology:** Cross-sectional study of 101 sexually experienced adolescent males recruited from a sexually transmitted disease clinic in northern California. We used Student's *t* tests and regressions to examine psychosocial differences between males who reported any intention versus no intention to get someone pregnant in the next 6 months, and we used analyses of variance to examine differences among different combinations of pregnancy plans/likelihood. **Results:** Adolescents' reports of their plans for getting someone pregnant differed from their assessments of the likelihood that they would do so ( $\chi^2 = 24.33$ ;  $df = 1$ ). Attitudes toward pregnancy and participants' mothers' educational attainment differentiated those with clear pregnancy intentions (planning and likely) from those with clear intentions to avoid pregnancy (not planning and not likely). **Conclusions:** To reduce the rates of adolescent childbearing, males' pregnancy intentions must be assessed and asked about in multiple ways. **Pediatrics** 2005;116:e414–e419.