Association of Maladaptive Parental Behavior With Psychiatric Disorder Among Parents and Their Offspring

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Background: A longitudinal study was conducted to investigate the role of maladaptive parental behavior in the association between parent and offspring psychiatric disorder.

Methods: Psychosocial and psychiatric interviews were administered to a representative community sample of 593 biological parents and their offspring from 2 counties in the state of New York in 1975, 1983, 1985 to 1986, and 1991 to 1993. In 1975, the offspring were a mean age of 6 years. Maladaptive parental behavior was assessed in 1975, 1983, and 1985 to 1986. Parent and offspring psychiatric symptoms were assessed in 1983, 1985 to 1986, and 1991 to 1993.

Results: Maladaptive parental behavior substantially mediated a significant association between parental and offspring psychiatric symptoms. Parents with psychiatric disorders had higher levels of maladaptive behavior in the household than did parents without psychiatric disorders. Maladaptive parental behavior, in turn, was associated with increased offspring risk for psychiatric disorders during adolescence and early adulthood. Most of the youths that experienced high levels of maladaptive parental behavior during childhood had psychiatric disorders during adolescence or early adulthood, whether or not their parents had psychiatric disorders. In contrast, the offspring of parents with psychiatric disorders were not at increased risk for psychiatric disorders unless there was a history of maladaptive parental behavior.

Conclusions: Maladaptive parental behavior is associated with increased risk for the development of psychiatric disorders among the offspring of parents with and without psychiatric disorders. Maladaptive parental behavior appears to be an important mediator of the association between parental and offspring psychiatric symptoms.

Arch Gen Psychiatry. 2001;58:453-460
of the childhood environment that accounts for the increase in risk for psychiatric disorders among the offspring of parents with psychiatric disorders. Two bodies of research support this inference. First, research has indicated that parental psychopathology is associated with maladaptive parental behavior.11,13 Second, research has demonstrated that maladaptive parental behavior is associated with increased offspring risk for psychiatric disorders.14-17 It has thus been hypothesized that maladaptive parental behavior plays a significant role in the association between parental and offspring psychiatric disorder.18-20

To conduct a systematic examination of this mediational hypothesis, it is necessary to conduct prospective longitudinal research with a sizable general population sample, assessing a wide range of psychiatric disorders and maladaptive behaviors among both biological parents while they are raising their children, and
assessing psychiatric disorders among the offspring during their childhood, adolescence, and early adulthood. It is also necessary to control for the effects of parental psychopathology, offspring temperament, and offspring psychopathology on maladaptive parental behavior.

We report findings from such a community-based prospective longitudinal study to investigate whether maladaptive parental behavior mediates the association between parental and offspring psychiatric disorders during late adolescence (1983-1986) or early adulthood (1991-1993) after controlling for parental education, offspring age, sex, difficult childhood temperament, psychiatric disorders during early adolescence (1983), and parental psychiatric disorders. Logistic regression analyses were also conducted to investigate whether parental psychiatric disorders were associated with increased offspring risk for psychiatric disorders during late adolescence or early adulthood after controlling for parental education, offspring age, sex, and maladaptive parental behavior.

Data regarding the cumulative prevalence of maternal and paternal psychiatric disorders predicted offspring psychiatric disorders during early adolescence and maladaptive parental behavior. Unlike the logistic regression analyses, the multiple regression analyses took into consideration the severity of maternal and parental psychopathology.

An established 3-step procedure was used to test whether parental behavior mediated the associations between parental and offspring psychiatric disorders. For parental behavior to mediate these associations, 3 conditions are required: (1) parental psychiatric disorders must predict offspring psychiatric symptoms; (2) parental psychiatric disorders must predict maladaptive parental behavior; and (3) maladaptive parental behavior must predict offspring psychiatric disorders after parental psychiatric disorders were controlled statistically. Difficult childhood temperament and offspring psychiatric disorders during early adolescence were controlled in all of the mediation analyses.

Logistic regression analyses were also conducted to investigate whether maladaptive maternal and paternal behaviors independently predicted offspring psychiatric disorder, the statistical interaction of maladaptive maternal and paternal behaviors predicted offspring psychiatric disorder, maternal and paternal psychiatric disorders independently predicted offspring psychiatric disorder, and the interaction of maternal and paternal psychiatric disorders predicted offspring psychiatric disorder.

PREVALENCES OF MATERNAL, PATERNAL, AND OFFSPRING PSYCHIATRIC DISORDERS

Data regarding the cumulative prevalence of maternal and paternal psychiatric disorders before and during the childhood and adolescence of the offspring, and of offspring psychiatric disorders.
ASSOCIATION BETWEEN 
PREEXISTING OFFSPRING PSYCHOPATHOLOGY 
AND SUBSEQUENT PARENTAL BEHAVIOR

Difficult childhood temperament at a mean age of 6 years was associated with higher levels of maladaptive parental behavior at a mean age of 14 (t_{191} = 3.28, P = .001) and 16 (t_{191} = 2.37, P = .02) years. Psychiatric disorder at a mean age of 14 years was associated with higher levels of maladaptive parental behavior at a mean age of 16 years (t_{191} = 5.67, P < .001).

<table>
<thead>
<tr>
<th>Table 1. Maternal Psychiatric Disorders and Maladaptive Maternal Behaviors During the Childhood and Adolescence of the Offspring*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maladaptive Maternal Behavior</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Harsh punishment of child</td>
</tr>
<tr>
<td>Inconsistent enforcement of rules</td>
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<tr>
<td>Low amount of time spent with child</td>
</tr>
<tr>
<td>Low educational aspirations for child</td>
</tr>
<tr>
<td>Low maternal affection toward child</td>
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<tr>
<td>Maternal possessiveness toward child</td>
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<tr>
<td>Maternal use of guilt to control child</td>
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<tr>
<td>Numerous loud arguments with child’s father</td>
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<tr>
<td>Poor control of anger toward child</td>
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<tr>
<td>Poor maternal communication with child</td>
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<tr>
<td>Poor maternal supervision of child</td>
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<tr>
<td>Poor maternal maintenance of home</td>
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<tr>
<td>Regular cigarette smoking in presence of child</td>
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<tr>
<td>Verbal abuse directed toward child</td>
</tr>
</tbody>
</table>

*CI indicates confidence interval.  
†Maternal behaviors that were not significantly associated with maternal psychiatric disorders are not included in this table.  
‡Remained significant after controlling for offspring age, sex, and difficult temperament during childhood, for parental education, and for offspring psychiatric disorders during early adolescence.  
§Remained significant after controlling for offspring age, sex, and difficult temperament during childhood.

<table>
<thead>
<tr>
<th>Table 2. Paternal Psychiatric Disorders and Maladaptive Paternal Behaviors During the Childhood and Adolescence of the Offspring*</th>
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</thead>
<tbody>
<tr>
<td><strong>Maladaptive Paternal Behavior</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Low amount of time spent with child</td>
</tr>
<tr>
<td>Low level of paternal assistance to child’s mother</td>
</tr>
<tr>
<td>Low paternal affection toward child</td>
</tr>
<tr>
<td>Numerous loud arguments with child’s mother</td>
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<tr>
<td>Poor fulfillment of paternal role in family</td>
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<tr>
<td>Poor paternal communication with child</td>
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<tr>
<td>Poor paternal supervision of child</td>
</tr>
<tr>
<td>Regular cigarette smoking in presence of child</td>
</tr>
<tr>
<td>Poor paternal maintenance of home</td>
</tr>
</tbody>
</table>

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†Paternal behaviors that were not significantly associated with maternal psychiatric disorders are not included in this table.  
‡Remained significant after controlling for offspring age, sex, and difficult temperament during childhood, for parental education, and for offspring psychiatric disorders during early adolescence.

ASSOCIATION BETWEEN PARENTAL PSYCHIATRIC DISORDERS AND MALADAPTIVE PARENTAL BEHAVIOR

Fourteen types of maladaptive maternal behavior and 9 types of maladaptive paternal behaviors were more prevalent among parents with psychiatric disorders than among parents without psychiatric disorders. These associations remained significant after parental education, offspring age, sex, difficult childhood temperament, and psychiatric disorders during early adolescence were controlled statistically (Tables 1 and 2). Overall, parents without psychiatric disorders had an adjusted mean (SD) of 1.89 (1.84) maladaptive behaviors. Parents with psychiatric disorders during late adolescence and early adulthood, are presented in Table 3.
disorders had an adjusted mean (SD) of 3.93 (3.00) maladaptive behaviors. This difference remained significant after controlling for the same covariates (F(3,92) = 116.09, P < .001).

ASSOCIATION BETWEEN MALADAPTIVE PARENTAL BEHAVIOR AND OFFSPRING PSYCHIATRIC DISORDERS

Maladaptive parental behavior was associated with increased offspring risk for anxiety, depressive, disruptive, personality, and substance use disorders during late adolescence and early adulthood after the covariates were controlled statistically. All of these associations remained significant after parental psychiatric disorders were controlled statistically (Table 4). Offspring psychiatric disorders increased markedly in prevalence as the number of maladaptive parental behaviors increased. The same pattern of findings was obtained when the analyses were repeated using an index of maladaptive parental behavior based solely on the maternal interviews and an index of offspring psychopathology based solely on the offspring interview during early adulthood. Supplemental analyses indicated that persistent maladaptive parental behavior was associated with higher offspring risk for psychiatric disorders than was episodic maladaptive parental behavior.

Maladaptive maternal (adjusted odds ratio [AOR], 1.38; 95% confidence interval [CI], 1.22-1.55; P < .001) and paternal behavior (AOR, 1.19; 95% CI, 1.06-1.34; P = .003) were independently associated with increased offspring risk for psychiatric disorder. The statistical interaction of maladaptive maternal and paternal behavior did not predict offspring risk for psychiatric disorder, although the addition of 1 maladaptive maternal and paternal behavior was associated with a 64% increase in offspring risk for psychiatric disorder.

ASSOCIATION BETWEEN PARENTAL AND OFFSPRING PSYCHIATRIC DISORDERS

Parental psychiatric disorders were associated with increased offspring risk for anxiety, depressive, disruptive, personality, substance use, and any psychiatric disorders during late adolescence and early adulthood after the covariates were controlled statistically (Table 5). However, none of these associations remained significant after controlling for maladaptive parental behavior. The same pattern of findings was obtained when the analyses were repeated using an index of the total number of maternal and paternal disorders in each family. Supplemental analyses indicated that persistent parental psychiatric disorders were associated with higher offspring risk for psychiatric disorders than were episodic parental psychiatric disorders.

Maternal (AOR, 2.38; 95% CI, 1.58-3.58; P < .001) and paternal (AOR, 1.62; 95% CI, 1.08-2.43; P = .02) psychiatric disorders were independently associated with offspring risk for psychiatric disorder. Neither the interaction of maternal and paternal psychiatric disorders nor the interaction of parental psychiatric disorders with maladaptive parental behavior was associated with offspring risk for psychiatric disorder. As the Figure indicates, the overall increases in offspring risk for psychiatric disorders as a function of maladaptive parental behavior were nearly identical among the offspring of parents with and without psychiatric disorders.

ASSOCIATIONS BETWEEN SPECIFIC TYPES OF PARENTAL AND OFFSPRING PSYCHIATRIC SYMPTOMS

As Table 6 indicates, symptoms of parental and offspring anxiety, depressive, disruptive, personality, and substance use disorders were significantly associated after parental education, offspring age, sex, difficult childhood temperament, and early adolescent psychiatric disorders were controlled statistically. Maladaptive parental behavior was associated with symptoms of offspring anxiety, depressive, disruptive, personality, and substance use disorders after the covariates listed above, and parental psychiatric symptoms were controlled statistically. Substantial reductions in the magnitudes of the associations between parental and offspring psychiatric symptoms were observed when maladaptive parental behavior was controlled statistically.

PARENTAL DISORDERS, PARENTAL BEHAVIOR, AND OFFSPRING PSYCHIATRIC DISORDERS DURING EARLY ADULTHOOD

Although statistical controls were used in the above analyses to minimize the influence of preexisting offspring psychopathology, it would have been possible to further reduce the influence of preexisting offspring psychopathology by restricting the analyses to associations involving only those offspring disorders that were pres-
ent during early adulthood. However, small numbers of cases precluded such analyses regarding the 5 specific types of offspring psychiatric disorders. There was sufficient statistical power to permit analyses regarding the overall association between parental disorders, maladaptive parental behavior, and offspring psychiatric disorders during early adulthood. Results were consistent with the findings reported above: parental psychiatric disorders were associated with increased offspring risk for psychiatric disorders during early adulthood before (OR, 1.67; 95% CI, 1.27-2.19), but not after, controlling for maladaptive parental behavior (AOR, 1.19; 95% CI, 0.87-1.64).

**COMMENT**

The present findings suggest that maladaptive parental behavior may play an important role in the association between parental and offspring psychopathology. In the present study, maladaptive parental behavior met all of the statistical criteria required to indicate that it mediated this association: parental psychopathology was associated with maladaptive parental behavior and with increased offspring risk for psychiatric disorders during late adolescence and early adulthood, and maladaptive parental behavior was associated with elevated offspring risk.
for psychiatric disorders after parental psychiatric disorders were controlled statistically.

Such findings are of particular interest because it may be possible to prevent the onset of psychiatric disorders among many children and adolescents by helping parents to modify their child-rearing behavior. Importantly, our findings suggest that maladaptive parental behavior may play a significant role in the development of offspring psychiatric disorders whether or not the parents have psychiatric disorders. The present findings also indicate that some parents with psychiatric disorders do not behave in a particularly maladaptive manner while raising their children, and that their offspring may not be at substantially elevated risk for psychiatric disorders. Because some types of maladaptive parental behavior are relatively common in our society, our findings suggest that it may be important to educate the public about the kinds of parental behavior that are most strongly associated with risk for mental disorders among offspring.

These data are consistent with previous research indicating that parental psychopathology is associated with maladaptive parental behavior, that maladaptive parental behavior is associated with offspring risk for psychopathology, that a substantial proportion of the intrafamilial association involving several types of psychiatric disorders is accounted for by environmental factors, and that the effects of parental behavior on offspring behavior have sometimes been underestimated because the unique or “nonshared” aspects of the relationship between each child and his or her parents have not been adequately recognized. At the same time, it is also important to note that there is evidence indicating that genetic factors may play a predominant role in the intrafamilial transmission of some types of mental disorders, including schizophrenia and bipolar disorder, which were too rare to investigate in this study.

As noted above, previous research has indicated that parenting can be adversely affected by parental psychopathology and offspring temperament, both of which seem to be determined in part by genetic factors. In this regard, our findings indicating that the association between maladaptive parental behavior and subsequent offspring psychiatric disorders was not attributable to the effects of parentRating for Maladaptive Parental Behavior

Table 6. Association Between Parental Psychiatric Symptoms and Offspring Psychiatric Symptoms During Late Adolescence and Early Adulthood

<table>
<thead>
<tr>
<th>Offspring Symptoms/Parental Symptoms</th>
<th>Before Controlling for Maladaptive Parental Behavior</th>
<th>After Controlling for Maladaptive Parental Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta^{+} ) (SE)</td>
<td>( R^{2+} )</td>
</tr>
<tr>
<td>Anxiety/Anxiety</td>
<td>0.24( \dagger ) (0.04)</td>
<td>0.06</td>
</tr>
<tr>
<td>Depressive/Depressive</td>
<td>0.16( \dagger ) (0.04)</td>
<td>0.03</td>
</tr>
<tr>
<td>Disruptive/Disruptive</td>
<td>0.35( \dagger ) (0.04)</td>
<td>0.12</td>
</tr>
<tr>
<td>Personality/Personality</td>
<td>0.21( \dagger ) (0.04)</td>
<td>0.09</td>
</tr>
<tr>
<td>Substance/Substance</td>
<td>0.12( \dagger ) (0.04)</td>
<td>0.02</td>
</tr>
<tr>
<td>Total/Total</td>
<td>0.41( \dagger ) (0.04)</td>
<td>0.17</td>
</tr>
</tbody>
</table>

* indicates the regression coefficient.
† The proportion of variance in offspring symptoms accounted for by parental symptoms.
‡ Association remained significant after controlling for parental education and for offspring age, sex, difficult childhood temperament, and psychiatric disorders during early adolescence.

Supported by grant MH-36971 from the National Institute of Mental Health, Bethesda, Md (Dr. Cohen), and National Institutes of Health grant DA-03188 from the National Institute on Drug Abuse, Bethesda, Md (Dr. Brook).

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REFERENCES


