

# Assessing Psychiatric Disorders in Children

## Discrepancies Between Mothers' and Children's Reports

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● **Results were compared from independent interviews using the Schedule for Affective Disorders and Schizophrenia for School-aged Children—Epidemiologic Version and DSM-III with 220 subjects (ages 6 to 23 years) and their parent informants. In agreement with results from studies using a variety of structured diagnostic interviews or symptom scales, considerable discrepancies were found between parents' and children's reports on the degree and nature of the child's psychopathology. The children reported more illness about themselves than their parents reported about them. The parents' reports were primarily a subset of the children's reports. Various factors that might affect agreement, including demography, parental clinical status, severity of illness, and treatment, were also explored. The findings that parents underreport psychiatric disorders in their children are comparable with those reported in studies of adults when family informants are used to obtain diagnostic information. Until these parent-child discrepancies can be resolved by longitudinal, family, and other research, diagnostic assessment of children should include direct interviews with them. An independent assessment of the child's diagnosis based on information from multiple informants, including the child, may be the best estimate.**

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There is increasing evidence that parents and children do not agree on the nature, extent, and severity of the child's psychopathology. These discrepancies were first noted in independent studies by Lapouse and Monk<sup>1</sup> and by Rutter and Graham<sup>2</sup> and have been reported consistently since then. The recent use of new structured interviews and of specified diagnostic criteria in the assessment and diag-

nosis of children has not improved the situation. The discrepancies have been noted regardless of the source of the sample, ie, whether the children were under treatment for psychiatric disorders,<sup>3-8</sup> were attending a health maintenance organization for routine pediatric care,<sup>9,10</sup> were the children of psychiatrically ill parents,<sup>11-13</sup> or were identified in an epidemiologic survey of a community.<sup>1,2,14</sup> The discrepancies are consistently found with symptom scales<sup>6-8,13,15-17</sup>; with diagnostic interviews, including the Diagnostic Interview for Children and Adolescents,<sup>11,18</sup> the Diagnostic Interview Schedule for Children,<sup>3</sup> or the Schedule for Affective Disorders and Schizophrenia for School-age Children (K-SADS)<sup>19,20</sup>; and with the use of Research Diagnostic Criteria (RDC)<sup>20</sup> or DSM-III diagnostic criteria.<sup>7-9,11-17</sup>

Previous methods of obtaining diagnostic information on children's psychopathology may have obscured these discrepancies. One method was to obtain information about the child only from the parent, usually the mother; another was to interview the mother and child together and reach a consensus. The latter procedure can present some problems regarding issues of confidentiality and of coercion, especially in epidemiologic samples where the child is not being treated.<sup>19</sup> A somewhat different approach that has been used in studies of adults to resolve discrepancies in diagnoses is the best-estimate method,<sup>21</sup> in which various types of diagnostic information from multiple sources (family history, direct interview, medical records) are collected and assessed by a clinician who derives an estimate of the diagnosis. The best-estimate diagnostic procedure applied to the study of children is usually made on the basis of independent and identical interviews with the parents about the child and with the child directly. The best-estimate method, however, might not resolve the problem of discrepancies if two complete interviews about the child (from the parent and from the child) are available but the results are discordant. There currently are no guidelines as to who is the better informant.

This is the first report of our findings on discrepancies between parents' and children's reports of the children's psychiatric diagnoses. Findings on rates and risk factors for psychopathology in these children are presented else-

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where.<sup>22,23</sup> In this article, we examine the nature and magnitude of the discrepancies and the factors that may affect agreement. Understanding the discrepancies between parents' and children's reports and attempting to resolve them are essential to clinical and epidemiologic research on children.

This study differs from most previous studies by the simultaneous incorporation of the following methodologic features: it comprises the largest sample of children, to date, in which the K-SADS-Epidemiologic Version (K-SADS-E) interview and *DSM-III* criteria were used; the participation rate from the base sample is extremely high; a comparison group of children of normal nonpsychiatrically ill parents has been included; the interviewers were "blind" to the clinical status of the parents.

## SUBJECTS AND METHODS

### Probands

The proband parents were from the Yale Family Study of Major Depression. (The complete methodology has been described in a report by Weissman et al.<sup>24</sup>) In the previous study, there were 215 probands (133 with major depression and 82 normal controls). Major depression was defined according to modified RDC (requiring a four-week duration of symptoms and impairment in the major social role). The majority of depressed probands had received treatment at the Yale University Depression Research Unit, New Haven, Conn. The normal controls came from the 1975 community survey conducted in New Haven<sup>25</sup> and had no history of psychiatric illness based on at least four direct interviews (the last two using SADS-Lifetime and RDC criteria) over an eight-year period. All the probands were white and were group matched by age and sex.

Complete pedigrees for each proband were systematically obtained, and diagnostic assessments based on RDC were made for every living or dead adult first-degree relative and spouse from multiple informants by direct interview and/or family history or medical records. Diagnostic assessments of adult relatives were made blindly with respect to the status of the proband, using a best-estimate procedure.<sup>21</sup>

### Assessment

The diagnostic assessment of the child was based on the K-SADS-E.<sup>20,26</sup> The schedule was slightly modified by us so that *DSM-III* criteria could be derived. Good test-retest reliability<sup>29</sup> and good interrater reliability in our pilot study of adolescent inpatients<sup>27</sup> have been reported. The K-SADS-E was the core of a comprehensive interview that we assembled to be administered to a parent about the child and to the child about himself or herself.

To determine the current and past clinical status and social functioning of the parents, each parent was interviewed separately by independent interviewers. A third interviewer who was blind to the parents' diagnosis interviewed a parent (preferably the mother) about the child, and, at a later time, the child about himself or herself, to obtain a comprehensive assessment of the child's psychiatric, behavioral, and social functioning. Parents were asked to complete self-administered reports about themselves and about each of their children. Children (approximately 8 years of age and older) were asked to complete self-administered reports about themselves. If the parent and child authorized, then the child's teacher, pediatrician, and, when indicated, other health care providers were asked to complete self-administered questionnaires about the child.

### Interviewers

The interviewers, all of whom had a minimum of five years' clinical experience with children, included two PhD child psychologists, two MD child psychiatry fellows, and two masters-level school psychologists. The interviewers all went through a period of approximately 30 hours of training by us in the research assessments, during which interrater reliability was checked with the field supervisor by co-rating of interviews before the study began. Interrater reliability was monitored throughout the study using the field supervisor as the standard.

Table 1.—Age and Sex of Children by Proband Parent Group\*

Children's Age, y	Proband Parent Group		
	Depressed (n = 56)	Normal (n = 35)	Total (N = 91)
<b>Male</b>			
6-11	16 (12.8)	4 (4.2)	20
12-18	20 (16.0)	19 (20.0)	39
19-23	27 (21.6)	19 (20.0)	46
<b>Female</b>			
6-11	8 (6.4)	7 (7.4)	15
12-18	25 (20.0)	28 (29.5)	53
19-23	29 (23.2)	18 (18.9)	47
<b>Total</b>	<b>125 (100)</b>	<b>95 (100)</b>	<b>220</b>

\*Values are No. (%) except totals.

### Participation Rate

At the time of the original study, 104 of the 215 probands (64 depressives and 40 normal controls) had children between the ages of 6 and 17 years. Because six years had elapsed since the initial study, offspring who were under the age of 18 years at the time of the initial study were as old as 23 years at the time of reinterview. All 104 families were located and invited to participate; 91 agreed (87.5% participation rate). The refusal rate was identical in both proband groups.

Direct interviews were obtained with 83% of the eligible children, and 97% of the children had a report from at least one parent. Diagnostic information was available on all children from at least one informant (parent or child). Eighty-four (93%) of the mothers and 66 (72%) of the fathers also completed the diagnostic interviews about themselves.

### Statistical Analysis

Overall agreement between parent and child on the presence of the child's diagnosis was based on the chance corrected measure of agreement  $\kappa$ .<sup>28</sup> Cumulative rates of major depression were estimated using the product limit estimate.<sup>29</sup>

## RESULTS

### Age and Sex by Proband Group

Ninety-one families had 220 children (Table 1). Fifty-six depressed probands had 125 children, and 35 normal probands had 95 children. There were 105 boys and 115 girls. Thirty-four were prepubertal (ages 6 to 11 years); 83 were between the ages of 12 and 17 years; and 103 were aged 18 to 23 years. The mean age was 17 years. There were no significant differences in the age and sex distribution of children by proband group.

### Demographic Characteristics of Families

The children of depressed and normal parents, in general, were from demographically comparable families. All the families were white, and the groups did not differ significantly by the parents' ages, number of marriages of mother or father, education of mother or father, current marital status of father, religion, social class, or number of children in the family. There were 17 (31.5%) of the mothers from the depressed proband group and four (12.1%) from the normal proband group who were currently widowed, divorced, or separated ( $P < .05$ ). Forty-two (46.1%) of the families came from professional and upper-middle classes.

### Frequencies and Agreement on Diagnoses in Children

Table 2 gives the lifetime rates per 100 diagnoses in the children by mothers' and by children's reports within the depressed and normal families; the relative risk of the difference in rates of diagnoses among children of depressed and normal probands; and the  $\kappa$  values of agreement between mothers' and children's reports of the children's diagnoses.

The children of depressed probands compared with the children of normal probands, whether by mothers' or by children's reports,

Table 2.—*DSM-III* Diagnoses in Children of Depressed and Normal Proband Parents by Mother and Child Informants\*

DSM-III Diagnoses in Children	Mother's Report			Child's Report			κ
	Proband Parents			Proband Parents			
	MDD	Normal	RR	MDD	Normal	RR	
MDD	17.7	5.3	3.3†	35.1	21.1	1.6‡	0.30§
Attention deficit disorder	2.5	3.2	0.8	3.2	4.6	0.7	0.34§
Conduct disorder	7.6	8.4	0.9	23.4	14.9	1.6	0.36§
Anxiety disorder	20.2	10.5	1.9‡	36.2	27.6	1.3	0.25§
Substance abuse	4.2	1.1	3.8	17.0	5.6	3.0‡	0.07
Alcohol	1.7	1.1	1.5	11.7	5.8	2.0	0.10‡
Other drug	2.5	0.0	0.0	8.5	3.5	2.4	...
Any diagnosis	57.1	37.9	1.5†	70.2	54.0	1.3‡	0.27§
Mean No. of diagnoses	1.1	0.6	1.8	2.0	1.4	1.4‡	...

\*MDD indicates major depressive disorder; RR, relative risk. Except for RR and κ, values are rates per 100. The κ values include only those children where child and parent reports (n=175) were available; κ values are missing where numbers were too small for calculations.

†P<.01.

‡P<.05.

§P<.001.

had significantly more major depression than any diagnosis. By mothers' reports, there were significant between-group differences ( $P<.05$ ) for anxiety disorders, and by children's reports, there were significant between-group differences ( $P<.05$ ) for substance abuse. The children of the depressed probands compared with those of the normal probands also more often had multiple diagnoses, although this difference only reached statistical significance by child's report.

The magnitude of the difference in rates between children of depressed and normal probands by the mothers' reports is reflected in a relative risk of 3.3 for major depression and of 1.5 for any diagnosis. The magnitude of the difference in rates between children of depressed and normal probands by children's reports was lower but in the same direction.

The overall agreement between mothers and children for most diagnoses presented was, as expected, statistically significant but modest, with κ values ranging from 0.07 to 0.36. Agreement was lowest between mothers and children for substance abuse, where the κ was 0.07. The children, compared with the mothers in both the depressed and normal proband groups, reported higher rates of substance abuse. The best agreement between mothers and children was for conduct disorder, with a κ value of 0.36. In general, the children reported higher rates for all diagnoses whether they were the children of depressed or of normal probands. The mothers' reports were primarily a subset of the children's reports.

#### Agreement by Age and Sex of the Child

Agreement between mothers and children on various diagnoses was examined by the age of the child (ie, under 13, 13 to 18, and 19 to 23 years), overall, and by proband group (Table 3). The sample numbers were small for many of the disorders, and only diagnoses with sufficient numbers to compute κ values are given. Overall agreement was poor to modest for most disorders in the various age groups. Agreement was best for major depression in children aged 13 to 18 years ( $\kappa=0.47$ ), for attention deficit disorder in children aged 19 to 23 years ( $\kappa=0.55$ ), and for conduct disorder in children aged 19 to 23 years of normal probands ( $\kappa=0.65$ ). The strongest age effect, when considering overall agreement, was found in major depression, with the agreement for children aged 19 to 23 years ( $\kappa=0.11$ ) being much worse than for those children younger than 19 years old.

Similar analyses were conducted by sex of the child (Table 3). The best agreement was between mothers and their sons for the diagnosis of major depression ( $\kappa=0.52$  overall, and  $\kappa=0.59$  for sons of depressed parents), and for the diagnosis of conduct disorder in girls ( $\kappa=0.50$ ) and boys ( $\kappa=0.53$ ) of normal probands.

Insight into the variation of the discrepancies in the reporting of

Table 3.—Agreement Between Mother's and Child's Report of *DSM-III* Diagnoses by Age and Sex of Child and Proband Parent's Clinical Status

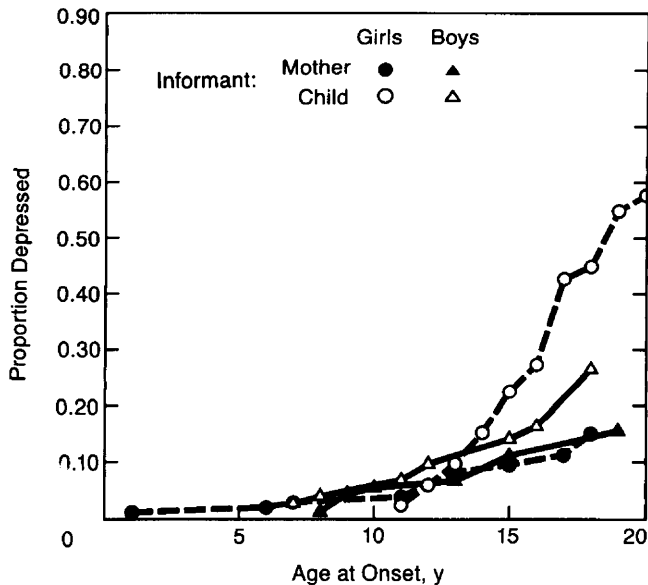
DSM-III Diagnoses in Children	κ		
	Overall	Depressed	Normal
<b>Age</b>			
<b>&lt;13 y (n=42)</b>			
Depression	0.39*	0.39†	0.06
Any diagnosis	0.32†	0.30	0.20
<b>13-18 y (n=70)</b>			
Depression	0.47‡	0.38†	0.49*
Anxiety	0.22†	0.17	0.24†
Conduct disorder	0.33*	0.13	0.49*
Any diagnosis	0.24†	0.37†	0.12
<b>19-23 y (n=63)</b>			
Depression	0.11	0.27†	0.13
Anxiety	0.23	0.22	0.23
Attention deficit disorder	0.55‡	0.47*	0.65‡
Conduct disorder	0.35‡	0.27†	0.52*
Substance abuse	0.05	0.03	...
Any diagnosis	0.16	0.15	0.16
<b>Sex</b>			
<b>Girls (n=94)</b>			
Depression	0.17†	0.17	0.14
Anxiety	0.22†	0.16	0.28†
Conduct disorder	0.43‡	0.35*	0.50‡
Any diagnosis	0.27*	0.35†	0.20
<b>Boys (n=81)</b>			
Depression	0.52‡	0.59‡	0.28
Anxiety	0.28*	0.37*	0.09†
Attention deficit disorder	0.36*	0.37†	0.36†
Conduct disorder	0.30*	0.18	0.53‡
Substance abuse	0.17	0.12	...
Any diagnosis	0.26†	0.27	0.21

\*P<.01.

†P<.05.

‡P<.001.





Cumulative rates of major depression in children by informant and sex of child.

major depression between mothers and children, by age and sex of the child, was obtained by using methods of survival analysis. The Figure shows the cumulative rates of experiencing a first onset of depression at some time between birth and a specified age by mother's report and by child's report for girls and boys. Onsets after the age of 20 years have been excluded because the numbers were too small to be reliable.

It is clear that before the age of 15 years the rates of depression reported for boys and girls by both the mothers and the children are very similar. After the age of 15 years, children report higher rates of depression about themselves than do their mothers about them. However, the difference between rates reported by mothers and daughters, which gives rise to worse diagnostic agreement in this age category, far exceeds the difference in rates reported by mothers and sons.

#### Other Factors Affecting Agreement

A variety of factors that related to agreement were examined for the disorders with the greatest frequency, major depression, any anxiety disorder, or any disorder in children (Table 4). The sex and marital status of the parent, the child's IQ, treatment history, or living arrangements did not have a major impact on improving agreement. However, if the parent informant was currently depressed, there was a substantial improvement in agreement on presence of any diagnosis in the child ( $\kappa = 0.74$ ) but not for a specific diagnosis. This indicates that parents who were experiencing a major depression compared with those who were not were more sensitive to their children's psychopathology, even though they did not agree with their children about the symptom manifestations of the child's disturbance.

#### Severity of Depression Affecting Agreement

To determine whether parents were reporting only the most severe symptoms in their children, whereas the children reported milder phenomena, the diagnostic criteria were systematically examined by severity. The next analysis focused specifically on agreement for major depression in the children. Agreement for major depression was examined by various severity criteria as follows (Table 5):

**Major Depression With Longer Duration and Definite Impairment.**—Stricter criteria for major depression, including four weeks' duration and evidence of impairment in major social role, did not improve agreement in the children of either the depressed or the normal proband parents.

**Recurrent Depression.**—There was some improvement in agreement if the child had more than one episode. However, even

Characteristic (n)	Agreement Between Mother's and Child's Report of Child's Diagnosis, $\kappa$		
	Major Depression	Any Anxiety Disorder	Any Disorder
Sex of proband parent			
F (112)	0.34†	0.24‡	0.32§
M (63)	0.22	0.28‡	0.17
Marital status of parent			
Ever divorced (41)	0.45§	0.24‡	0.44§
Never divorced (134)	0.19§	0.26§	0.19‡
Informant's clinical status			
Current major depression (11)	0.45	...	0.74‡
No current major depression (164)	0.24†	...	0.23§
Ever major depression (91)	0.46†	0.24†	0.25‡
Never major depression (84)	0.06	0.24‡	0.25‡
Child's IQ			
>100 (84)	0.28§	0.25‡	0.28§
≤100 (87)	0.28‡	0.23‡	0.22‡
Child's treatment status			
Ever treated (115)	0.14‡	0.25§	0.19‡
Never treated (60)	0.26‡	0.20	0.25
Child's living arrangement			
Living with parents (148)	0.34§	0.20§	0.25§
Other living arrangement (27)	0.13	0.50§	0.28

\*IQ was measured by the Peabody Picture Vocabulary Test. Ellipses indicate that numbers were too small to calculate meaningful  $\kappa$  values.

† $P < .001$ .

‡ $P < .05$ .

§ $P < .01$ .

when the child reported two episodes, only 42.1% of the mothers reported that the child had ever had a major depression.

**Duration of Episode.**—Duration of the child's episode of major depression did not improve agreement. Only about one third of the mothers reported that the child had a major depression regardless of whether the child reported an episode of greater or less than two months' duration. The child's history of any psychiatric disorder did not improve agreement.

**Varying Severity Criteria of Major Depression by Informant.**—Since the children were reporting higher rates of depression than their mothers, agreement between mother and child was compared by using the *DSM-III* criteria for major depressive disorder (MDD) for children and looser criteria of any depressive illness including major depression by mothers' reports. Not shown herein, the  $\kappa$  values for agreement between mothers and children did not change substantially.

#### Substitution of Diagnosis

Table 6 examines whether the lack of agreement could be accounted for by lack of agreement for the specific diagnosis per se. There was a tendency for informants who reported major depression in the child also to report other diagnoses, eg, only one (7.1%) of the children and four (28.6%) of the mothers who agreed on depression in children reported no other diagnosis in the children, as contrasted with 63 (52.1%) of the children and 75 (62%) of the mothers who agreed on absence of major depression in the child and who reported no other diagnoses in children. Alternately, for the discordant pairs, 17 (50%) of the mothers and four (66.7%) of the children who reported no depression in the children also reported no other diagnoses. Where the informant reported depression in the children, only one (14.7%) of the mothers and five (16.7%) of the children reported no other diagnoses.

Criteria for Depression	No. of Children	$\kappa$	Percent of Children With DSM-III Major Depression by Mother's Report
4-wk duration of symptoms and impairment of major social role			
Children of depressed probands	88	0.21*	...
Children of normal probands	87	0.11	...
No. of episodes of major depression in child by child's report			
0	127	...	4.7
1	23	...	17.4
2	19	...	42.1
≥3	6	...	33.3†
Duration of episode of major depression in child by child's report, mo			
0	127	...	4.7
<2	15	...	26.7
≥2	33	...	30.3†

\* $P < .05$ .  
† $P < .001$ .

A similar pattern was found for anxiety disorders (Table 6). When the informant reported major depression in the child, the informant also reported anxiety disorders. However, the children tended to report more anxiety disorders than did the mothers. The one exception to this was in the six cases where the child did not report depression and the mother did. Only one of these children reported an anxiety disorder.

The pattern for conduct disorder and substance abuse in the child was somewhat different. The mothers who reported major depression were not likely also to report conduct disorder or substance abuse. In none of the cases where the mothers reported major depression in the child and the child disagreed did the mother report a conduct disorder or substance abuse in the child. Moreover, for the discordant cases where the child reported major depression and the mother disagreed, only four (11.8%) of the mothers instead reported a conduct disorder, and none reported substance abuse in the child. In general, the children reported conduct disorders or substance abuse two to three times more often than did their mothers.

#### COMMENT Summary of Findings

The major findings of this study are the increased risk for children of depressed parents to a variety of psychiatric disorders and poor agreement between mothers and children on the degree and nature of the child's psychiatric disorders. Though there was some variation in agreement, overall agreement between mother and child was poor. These findings on increased risk of psychopathology in children of depressed parents and the poor agreement between parents and children are consistent with a number of smaller studies using different diagnostic and sampling approaches.

More specifically, we found the following:

1. The children of the depressed probands compared with the children of the normal probands had more major depres-

Other Diagnoses in Child by Informant	DSM-III Major Depression			
	Child Yes, Mother Yes (n=14)	Child Yes, Mother No (n=34)	Child No, Mother Yes (n=6)	Child No, Mother No (n=121)
Additional diagnosis				
Child	92.9	85.3	33.3	47.9
Mother	71.4	50.0	83.3	38.0
Any anxiety diagnosis				
Child	50.0	55.9	16.7	24.0
Mother	28.6	17.7	33.3	12.4
Conduct disorder				
Child	42.9	38.2	16.7	10.7
Mother	21.4	11.8	0.0	2.5
Substance abuse				
Child	14.3	26.5	0.0	7.4
Mother	7.1	0.0	0.0	0.83

\*Values are percentages. Additional diagnosis excludes major depression.

sion and, overall, more psychiatric disorders. This finding is consistent regardless of whether the parent or the child was the informant.

2. Children reported higher rates of all illnesses about themselves than their parents reported about them. The parents' reports were primarily a subset of the children's.

3. The higher rates of illness reported by the children compared with their mothers about them were consistent regardless of whether the parents were in the depressed or the normal proband group.

4. Agreement between parents and children was poor for the children both of depressed and of normal parents.

5. The agreement between mothers and children was best for major depression in sons. Both the sons and their mothers reported very low rates of major depression in the sons.

6. The highest degree of disagreement on psychiatric disorder was found between the mothers and their daughters aged 19 to 23 years for major depression, with the older daughters reporting consistently higher rates of major depression about themselves than their parents about them. This discrepancy in reporting between mothers and daughters was found for both the daughters of the depressed and of the normal parent probands.

7. The sex, marital status, or living arrangement of the proband parents and the children's IQs or treatment histories did not have a major impact on agreement. However, if the parent informant was currently depressed, there was considerable improvement in agreement on the presence of some disorder in the children but not on a specific diagnosis.

8. Agreement between mother and child did not improve substantially according to the severity of the criteria for major depression as measured by (a) stricter impairment and symptom criteria; (b) recurrence (there was a slight improvement with two or more episodes); and (c) duration of episode.

9. There is little suggestion that the parents are substituting another disorder for MDD in their children. Anxiety disorders tend to be reported along with MDD by both mother and child. There is a tendency for parents who

report MDD in the child also to report other disorders, and, alternately, the parent who does not report MDD in the child does not report other disorders. The exceptions are conduct disorder and substance abuse, which parents tend not to report and which children report as occurring two to three times more often than do their parents.

### Comparison With Other Studies

The increased risk of psychiatric disorders, particularly major depression, in the children of depressed parents is in agreement with a number of studies of children of depressed parents.<sup>30-36</sup> The poor agreement between mothers and children on children's psychopathology is consistent with the early reports of Lapouse and Monk<sup>1</sup> using a structured questionnaire and no specific diagnostic criteria; Achenbach et al<sup>15</sup> and Weissman et al<sup>18</sup> using symptom scales; Kazdin et al<sup>15,17</sup> using unstructured psychiatric interviews and *DSM-III* criteria; and now, in more recent studies using both structured interviews and specific diagnostic criteria, Edelbrock et al<sup>3</sup> using the Diagnostic Interview Schedule for Children and *DSM-III*, Manuzza and Gittelman<sup>36</sup> using the Diagnostic Interview Schedule, and Kashani et al<sup>11</sup> and Reich et al<sup>18</sup> in independent studies using the Diagnostic Interview Schedule for Children and *DSM-III*.

In general, the findings show that children report more illness about themselves than the parents report about them for most disorders.<sup>7,9,11</sup> We found that the children compared with their parents reported more of all disorders. Others have found variation by disorder, with parents reporting more conduct disorders<sup>11</sup> or objective behavioral symptoms.<sup>4,10,12</sup>

### Sex

Herjanic et al<sup>10</sup> have also found that agreement varies by sex of the child. In a small sample of children aged 6 to 16 years, they found better agreement for depression between parents and daughters than between parents and sons.

These findings contrast with the better agreement we found between mothers and sons for major depression. It is unclear if this agreement is due to a more confiding relationship between mothers and sons compared with mothers and daughters or to the possible fact that sons underreport depression or do not report mild disorders.

### Age

The effect of age on agreement depended on which groups were being examined on which diagnoses, and the results in the literature are inconsistent. Consistent with the findings of Moretti et al<sup>8</sup> in a small sample of 8- to 17-year-olds, we do not find strong age effects for agreement for any diagnosis. Herjanic and Reich<sup>4</sup> found somewhat better agreement for

12- to 16-year-olds than for 6- to 9-year-olds. In contrast, Edelbrock et al<sup>3</sup> found agreement better with younger children aged 6 to 9 years than with 10- to 18-year-olds. For major depression, we found better agreement for ages 6 to 18 than for ages 19 to 23 years.

### Use of Family Informants

It should be noted that the discrepancies we have found between mother and child reports of the child's psychopathology, with the parent (the family informant) reporting less illness in the subject (the child) than the subject reports about himself or herself, are similar to the findings in adults using the family history method.<sup>37,38</sup> We can conclude that the family history method tends to underreport diagnosis in children as in adults, even if structured interviews are used with the parents and the child, the informant is the mother, and the subject and informant are living together.

### Implications and Future Directions

For both clinical practice and research, we recommend that assessment of children's psychiatric status be based on independent assessment of the child and the parent informant. If a choice of informant has to be made, we would recommend that for children in the age group we studied the child be chosen as the informant. If only the mothers are interviewed about their children, few of the children would not have agreed that they were ill (ie, the false-positive rates would be low). However, the false-negative rates would be quite high and many cases would have been missed. There would also be gross underestimates of substance abuse in the children.

Until the diagnostic discrepancies can be understood, we recommend that research reports include rates based on child and parent informant and that an independent assessment of diagnoses based on all available information be made.

We are currently pursuing other ways of validating diagnosis. These include examination of child's symptoms and social functioning and familial aggregation of disorder by agreement status. Most important, we are following up these children longitudinally to determine the natural history, clinical course, and continuities of the disorders reported by the child and by the parent informant.

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