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# Children's Symptom and Social Functioning Self-Report Scales

## Comparison of Mothers' and Children's Reports

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This paper reports on the testing of self-report scales, in a pilot study of 28 children with a psychiatrically ill parent. We examined the relationship between children's responses about themselves and mothers' responses about their children, on symptom and social functioning scales. The self-report scales administered to the children included the Center for Epidemiologic Studies Depression Scale, the Children's Depression Inventory, and the Social Adjustment Scale. The mothers completed the Achenbach Child Behavior Checklist, the Conners Parent Questionnaire, and the Center for Epidemiologic Studies Depression Scale about their children. Agreement between mothers and children on the assessment of the child was poor. Agreement was good across the scales used when the information was derived from the same informant. The implication of these results for epidemiological studies, particularly concerning dual informants, is discussed.

The recent report from the President's Commission on Mental Health emphasized the need to gather reliable data on the incidence and prevalence of mental health problems in order to obtain greater understanding of the needs of people who are underserved, inappropriately served, or who are at high risk for mental disorders (11). Particular attention was paid to population groups within our society known to have special needs such as children and adolescents (11, p. 49).

These recommendations are receiving rapid attention as evidenced in the Epidemiologic Catchment Area Program (ECA) developed by the National Institute of Mental Health. This program was designed to obtain the information urged by the President's Commission Report. The prime focus of the ECA program has been selecting methods of assessing psychopathology which are reliable and feasible in community surveys.

As part of an increasing interest in studying the epidemiology of childhood disorders, a review was undertaken of scales which assess psychopathology and/or behavior problems in children under the age of 18 (8, 9). The review included scales which seemed suitable for epidemiological research, were current (reported since 1967), had undergone some testing as to feasibility, and had some available psychometric data. The scales reviewed included both interviews and self-reports and covered psychiatric diagnoses, overall psychopathology, specific syndromes, and social functioning. Based on this review several scales which seemed suitable for epidemiological studies in terms of their utility and development were selected and tested.

This paper reports results of the testing of self-report scales, in a pilot study of children with a psychiatrically ill parent. Other reports will deal with interview techniques (10). The purpose of this paper is to determine the relationship between several symptom and social functioning self-report scales based on the children's responses about themselves and the responses of the mothers about the children.

### Method

#### *Description of Children and Parents*

The subjects were male and female children between the ages of 6 and 17 years, with a mean age of 11.1 years. The parents of these children had at one time been subjects in a family-genetic study of affective disorders, but were rejected as probands in that study for diagnostic reasons. These probands were rejected because they did not meet Research Diagnostic Criteria (RDC) for either severe or mild primary major depression or a rating of no mental disorder.

Included in this pilot study were 28 children from 12 families. In six of the families the father was the proband, and in six of the families the mother was the proband. Table 1 shows the age and sex of the children. The children's psychiatric status was assessed by a structured psychiatric interview designed for use with children and adolescents (Schedule for Affective Dis-

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orders and Schizophrenia for School Age Children [Kiddie-SADS]). Approximately 45 per cent of the children met RDC criteria for a psychiatric diagnosis. This figure was consistent on the basis of either direct interviews with the children or interviews with mothers about their children. The agreement between mothers and children on the Kiddie-SADS and the details of the testing of this instrument are described elsewhere (10, 12).

Table 2 shows the diagnostic status of the parent proband by sex of proband for each family, as well as the number of children from each family in the sample. All of the parent probands had psychiatric disorders, either current or past, and several had multiple disorders.

TABLE 2
*Description of the Children's Parents*

| Sex of Parent Proband | Diagnoses of Parent Proband | No. of Children in the Study |
|---|---|---|
| Father ($N = 6$) | | |
| | General anxiety disorder | 2 |
| | Major depression, antisocial personality | 4 |
| | Alcoholism | 2 |
| | Depression secondary to medical illness | 3 |
| | Intermittent hyperthymia | 3 |
| | Depression, alcoholism | 4 |
| Mother ($N = 6$) | | |
| | Major depression, panic, phobia, drug abuse | 3 |
| | Depression, alcoholism, intermittent cyclothymia | 1 |
| | Depression, alcoholism, cyclothymia, panic, phobia, drug abuse | 1 |
| | Minor untreated depression | 1 |
| | Hypomania | 2 |
| | Major depression, drug abuse, antisocial personality | 2 |
| Total 12 | | 28 |

*Description of Scales*

The scales were administered independently to the children and to the mothers about their children. In order to standardize the information source, the mother was interviewed about the child whether or not the mother was the proband.

*Kiddie-SADS.* The Kiddie-SADS (12), was administered to both children and mothers. Derived from the adult SADS (6), the Kiddie-SADS is a structured psychiatric interview designed to systematically collect information on signs and symptoms of current psychopathology in children. This interview was modified (by Orvaschel in collaboration with Puig-Antich and Chambers) in order to enable us to ascertain symptoms of current and past psychopathology in children. The information collected on the Kiddie-SADS was then used to classify the child diagnostically, using unmodified adult RDC (14) and DSM-III criteria (4) when RDC criteria were unavailable. For this study, two RDC diagnoses were made: one on the basis of data children provided about themselves; and one on the basis of data obtained from mothers' interviews regarding their children.

*CES-D (modified for children).* The CES-D was administered to children and to mothers about their children. Modified for children by Orvaschel for this study, the CES-D is a child's version of the adult CES-D (13), a 20-item self-report depression symptom scale. When appropriate, adult CES-D items were left intact, and, when necessary, items were modified to facilitate understanding and appropriateness for children. For example, the adult item, "I felt like everything I did was an effort," was revised to, "I felt like I was too tired to do things this past week." The same CES-D scoring is used in the children's version (items range from 0 [not at all] to 3 [a lot], total scores range from 0 to 60) with higher scores indicating greater symptomatology. Table 3 compares the items in the adult version with those in the children's version of the CES-D.

TABLE 1
*Age and Sex of Children*

| Sex of Child | Age of Child (years) | | Total |
|---|---|---|---|
| | 6 to 11 | 12 to 17 | |
| Male | 7 | 11 | 18 |
| Female | 5 | 5 | 10 |
| Total | 12 | 16 | 28 |

*Children's Depression Inventory.* The Children's Depression Inventory (CDI) was administered to children only. Patterned after the Beck Depression Inventory, the CDI[2] is a self-report scale designed to measure the behavioral, social, and affective symptoms of depression in children. There are 27 sets of items. Each set consists of a group of three sentences which express the same symptom varied by severity. The child selects the sentence from the set which best describes himself or herself over the past 2 weeks. Each item set is scored from 0 to 2, resulting in a total score which ranges from 0 to 54. A higher score indicates greater severity.

*Social Adjustment Scale-Self-Report (modified for children).* The Social Adjustment Scale-Self-Report (SAS-SR) was administered to children only. Based on the adult version of the SAS-SR (15), this form was modified for children by Orvaschel. The SAS-SR for children consists of 23 questions concerning children's

[2] Kovacs, M., Betof, N. G., Celebre, J. E., *et al.* Childhood depression: Myth or clinical syndrome? Unpublished manuscript.

TABLE 3
*Comparison of CES-D Items for Adults and for Children*

| Adult's Item | Children's Item |
|---|---|
| I was bothered by things that usually don't bother me. | Same |
| I did not feel like eating; my appetite was poor. | I did not feel like eating; I wasn't very hungry. |
| I felt that I could not shake off the blues even with help from my family or friends. | I wasn't able to feel happy, even when my family or friends tried to help me feel better. |
| I felt that I was just as good as other people. | I felt like I was just as good as other kids. |
| I had trouble keeping my mind on what I was doing. | I felt like I couldn't pay attention to what I was doing this week. |
| I felt depressed. | I felt down and unhappy this week. |
| I felt that everything I did was an effort. | I felt like I was too tired to do things this past week. |
| I felt hopeful about the future. | I felt like something good was going to happen. |
| I thought my life had been a failure. | I felt like things I did before didn't work out right. |
| I felt fearful. | I felt scared this week. |
| My sleep was restless. | I didn't sleep as well as I usually sleep this week. |
| I was happy. | I was happy this week. |
| I talked less than usual. | I was more quiet than usual this week. |
| I felt lonely. | I felt lonely, like I didn't have any friends. |
| People were unfriendly. | I felt like kids I knew were not friendly or that they didn't want to be with me. |
| I enjoyed life. | I had a good time this week. |
| I had crying spells. | I felt like crying this week. |
| I felt sad. | Same |
| I felt that people disliked me. | I felt people didn't like me this week. |
| I could not get "going." | It was hard to get started doing things this week. |

behaviors and feelings over the last 2 weeks. For each question, the child chooses among five possible responses which indicate scaled measures of adjustment. In addition to overall adjustment, four separate areas of adjustment are assessed: school behavior, friends and spare time, family behavior, and dating (only for children aged 12 to 17 years). An overall mean and a separate mean for each of the four adjustment areas are obtained. Item and mean scores range from 1 to 5; higher scores indicate more impaired social adjustment.

*Achenbach Child Behavior Checklist.* The Achenbach Child Behavior Checklist (CBCL) was administered to mothers only. The CBCL (2) consists of 118 problem behaviors assessed over the last 12 months. The mother scores each behavior from 0 (if the behavior was not a problem) to 2 (if the problem was serious). The total score ranges from 0 to 236. Higher scores indicate more numerous behavior problems. Factor scores which vary according to age and sex of child are available for this scale (1, 3).

*Conners Parent Questionnaire.* Conners Parent Questionnaire (CPQ) was administered to mothers only. The CPQ (5) is comprised of 93 items concerning children's behavior problems and a subsequent question (item 94) which assesses overall severity of problem behavior. Parents score each problem according to the extent they feel their child was bothered by that problem during the last month. Individual item scores range from 0 (not at all) to 3 (very much). Overall behavior problem severity is measured by the total

TABLE 4
*Intercorrelation Matrix Variable Key*

| Variable | Description |
|---|---|
| CES-D (for children and mothers) | Total sum score of 20 items, each item ranges from 0 to 3; total score ranges from 0 to 60. Higher score indicates more severe depression. |
| CPQ overall global judgment | Score of one question indicating overall severity, ranges from 0 to 3; higher score indicates greater impairment. |
| CPQ total sum | Sum score of 93 items each item ranges from 0 to 3; total score ranges from 0 to 279. Higher score indicates greater impairment. |
| Achenbach total sum | Sum score of 118 items; each item ranges from 0 to 2; total score ranges from 0 to 236. Higher score indicates greater impairment. |
| CDI total sum | Sum score of 27 items; each item ranges from 0 to 2; total score ranges from 9 to 54. Higher score indicates more severe depression. |
| SAS-SR overall mean | Mean score of 23 items; range for each item and overall mean is 1 to 5. Higher score indicates more impaired social adjustment. |
| Sex | 1 = Male, 2 = Female |
| Age in years | Ranges from 6 to 17 years. |

score (range, 0 to 279), and by the overall severity question (range, 0 to 3). Higher scores indicate more severe problem behavior. Factor scores (range, 0 to 3) are also available for eight areas of behavior: conduct problems, anxiety, impulsive/compulsive, learning problems, psychosomatic, perfectionism, antisocial, and muscular tension (7).

## Results

### *Frequency of DES-D Scores*

According to reports by the children and by the mothers about their children, about 9 per cent of the children scored over 15, the cut-off score for a case of depression in the adult version of the CES-D (13).

### *Intercorrelation Among Scales*

Table 4 provides a summary description of the scoring of each scale. Table 5 shows the intercorrelation among various symptom and social adjustment scales and demonstrates that the correlations are significant when they derive from the same informant. The children's reports correlate significantly with one another. The mothers' reports about their children do not correlate with the children's reports about themselves. There are no correlations with sex and few with age. The correlations among the children's scales, while significant, are modest. For mothers' reports about their children, the highest correlations are between the Achenbach and the Conners scales.

### *Symptom and Social Functioning Differences by Diagnostic Status of Children*

Table 6 compares the symptom and social functioning of children by their diagnostic status and shows that the mothers' reports of their children's symptoms vary significantly by whether or not a child has a diagnosis, regardless of whether the child or mother is

TABLE 5
*Intercorrelation among Scales, Age, and Sex*[a]

| | Children's Reports ($N$ = 23) | | | Mothers' Reports about Their Children ($N$ = 22) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | CES-D Children | CDI Total | SAS-SR Mean | CES-D Mothers | CPQ Overall | CPQ Total | Achenbach Total | Sex | Age |
| Children's reports | | | | | | | | | |
| CES-D score | | | | | | | | | |
| CDI total sum | .44* | | | | | | | | |
| SAS-SR overall mean | .75*** | .50* | | | | | | | |
| Mothers' reports about their children | | | | | | | | | |
| CES-D score | .04 | −.19 | .13 | | | | | | |
| CPQ overall global judgment | .17 | .22 | .40 | .57* | | | | | |
| CPQ total sum | .43 | .17 | .44 | .39 | .76*** | | | | |
| Achenbach total sum ($t$-score) | .30 | −.04 | .35 | .59** | .73*** | .91*** | | | |
| Sex of child | .22 | .01 | .15 | −.11 | −.19 | .19 | .23 | | |
| Age of child | .18 | −.15 | .47* | .56** | .27 | .33 | .40 | .07 | |

[a] See intercorrelation matrix variable key.
* $p < .05$; ** $p < .01$; *** $p < .001$.

TABLE 6
*Self-Report Symptom and Social Functioning Differences between Children with and without an RDC Diagnosis*[a]

| | RDC Diagnosis Based on Children's Report | | RDC Diagnosis Based on Mother's Report about Their Children | |
|---|---|---|---|---|
| | With Diagnosis ($N$ = 7) | No diagnosis ($N$ = 21) | With Diagnosis ($N$ = 10) | No diagnosis ($N$ = 18) |
| Children's report | | | | |
| CES-D | 10.5[b] | 6.9 | 10.5 | 6.9 |
| CDI | 4.3 | 4.2 | 4.8 | 4.0 |
| SAS | 1.9 | 1.6* | 1.8 | 1.6 |
| Mother's report about their children | | | | |
| CES-D | 8.6 | 3.9* | 8.9 | 3.8* |
| Achenbach total | 33.9 | 11.5** | 35.7 | 10.6** |
| Conners sum score | 32.7 | 11.8** | 35.6 | 10.5*** |
| Conners overall severity | 1.4 | .3*** | 1.4 | .3*** |

[a] Diagnoses reflect current and previous conditions following an interview with the Kiddie-SADS.
[b] Numbers represent means.
* $p < .10$; ** $p < .01$; *** $p < .001$.

the informant about the diagnosis. Children with a psychiatric diagnosis received higher psychopathology scores on the basis of mothers' ratings about their children when compared to children without a diagnosis. This finding suggests that mothers may be more sensitive informants about their children's psychopathology than children, when the information is derived from self-report scales.

## Conclusion

This pilot study assessed symptoms and social functioning by self-report scales in 28 children (aged 6 to 17 years) of parents with psychiatric disturbance and demonstrated the feasibility of the self-reports and interview methods used.

Cooperation by parents and children in completing the self-reports was generally quite good. Although agreement between mother and child on diagnosis of child was acceptable, as reported elsewhere (10), agreement between mothers and children on the child's self-assessment, using self-report forms, was poor. The intercorrelations between various self report scales whether assessing symptoms (CES-D, CDI, CPQ, CBCL) or social functioning (SAS-SR) were significant when the information was derived from the same informant. The children's reports correlate significantly with one another, and the mothers' reports about their children correlate significantly with one another. The mothers' reports about their children do not correlate with the children's reports. The CBCL and CPQ scales, both completed by the mothers, have the highest intercorrelations and can probably substitute for one another in assessing overall psychopathology. The mothers' reports of their children's symptoms and social functioning on the self-report scales significantly differentiated children with and without a psychiatric diagnosis (according to interview information), whereas the children's self-reports did not. This suggests that mothers may have been more sensitive reporters of their children's overt problems than were the children, when these problems were assessed by self-report measures. However, children cannot be ignored as informants in assessing their own psychopathology, since they frequently were able to report on internal feeling states of which their mothers were unaware.

In general, these results suggest that epidemiological studies of children should include information from both the children and parents and that self-report scales are useful but not sufficient for providing symptomatic and diagnostic data for epidemiological studies. It should be emphasized that the self-report scales described here are not intended as substitutes for diagnostic instruments and do not yield rates of discrete psychiatric disorders. However, they did yield interesting and important descriptive information on the children and the mother's perception of their children, and were economical and feasible for this population.

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