Brief psychosocial screening in outpatient pediatric practice

The Pediatric Symptom Checklist (PSC) is a brief screening questionnaire designed to help pediatricians in busy office practice select children who are likely to have psychosocial difficulties and thus could benefit from further evaluation. We report two preliminary validation studies that indicate that (1) PSC correlates well with the Childhood Behavior Checklist, a longer, well-validated questionnaire, and (2) most children referred for psychiatric evaluation score above the PSC cutoff score. Developing a valid and practical psychosocial screening procedure for office practice is methodologically difficult but highly relevant to clinical practice. (J PEDIATR 1986;109:371-378)

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Epidemiologic studies indicate that up to half of pediatric office visits reflect behavioral, psychosocial, and educational concerns[1,2] and that 5% to 15% of children have specific psychiatric disorders.[3] Nevertheless, many pediatricians do not feel adequately trained, do not have the time, or given current reimbursement policies, cannot afford to evaluate every child's psychosocial status.[4-9]

One method of focusing the limited time available on those children likely to have psychosocial problems would be to use a screening procedure, such as the Denver Developmental Screening Test. As with any screening test, a psychosocial screening procedure must be economical, brief, and accurate, and easy to understand, administer, and interpret. Although information about psychosocial functioning can be obtained directly from the child, from one or both parents, or from teachers by using questionnaires or interviews, parent-completed questionnaires seem at present to provide the optimal combination of efficiency, ease of administration, and screening accuracy.[10]

The goal of our work is to develop a brief, parent-completed screening questionnaire, available in the waiting room, that will help busy physicians to identify school-aged children in need of psychosocial evaluation. We have concentrated our efforts on 6- to 12-year-old children because they are seen less frequently than infants and toddlers and because many stresses and disorders become manifest during school age.

The first draft of the questionnaire used in our study, the Pediatric Symptom Checklist, was a shortened and sub-

PSC	Pediatric Symptom Checklist
CBCL	Child Behavior Check List
SES	Socioeconomic status

stantially revised form of the Washington Symptom Checklist.[11] The initial pilot study of the PSC was conducted in a general pediatric ward; the PSC was used to identify children who might benefit from further psychiatric consultation. The results in a small sample suggested that a single cutoff score on the PSC could define a group of children with serious psychiatric or behavioral symptoms.[12]

We present the first two studies designed to assess the acceptability, reliability, and validity of the revised PSC as

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PEDIATRIC SYMPTOM CHECKLIST

Parents check never, sometimes, or often for each of the following:

1. Complains of aches or pains.
2. Spends more time alone.
3. Tires easily, little energy.
4. Fidgety, unable to sit still.
5. Has trouble with a teacher.
6. Less interested in school.
7. Acts as if driven by a motor.
8. Daydreams too much.
9. Distracted easily.
10. Is afraid of new situations.
11. Feels sad, unhappy.
12. Does not show feelings.
13. Feels hopeless.
14. Has trouble concentrating.
15. Less interest in friends.
16. Fights with other children.
17. Absent from school.

18. School grades dropping.
19. Is down on himself or herself.
20. Visits doctor; doctor finds nothing wrong.
21. Has trouble sleeping.
22. Worries a lot.
23. Wants to be with you more than before.
24. Feels he or she is bad.
25. Takes unnecessary risks.
26. Gets hurt frequently.
27. Seems to be having less fun.
28. Acts younger than children his or her age.
29. Does not listen to rules.
30. Does not understand other people's feelings.
31. Teases others.
32. Blames others for his or her troubles.
33. Takes things that do not belong to him or her.
34. Refuses to share.

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a psychosocial screening questionnaire in outpatient pediatric practice.

Study 1
METHODS

For study 1, the PSC (*see* box) was revised based on the symptoms of the major diagnoses for children listed in the American Psychiatric Association DSM-III,[13] the clinical impressions of several pediatricians, psychologists, and child psychiatrists, and a review of items from other questionnaires reported to be the most useful in identifying children with emotional problems.

The PSC is filled out by parents of school-age children in the pediatrician's waiting room and takes 3 to 5 minutes to finish. Parents rate each of the 35 symptoms as "often," "sometimes," or "never" present. The PSC is scored by assigning 2, 1, or 0 points, respectively, to these ratings and then adding the points for an overall score.

Although children aged 6 to 12 years were the primary focus during the development of and early research with the PSC, older and younger children were included in the preliminary research. Only the data for 6- to 12-year-old children are presented.

All of the parents of children in the target age range who entered the waiting rooms of three different outpatient pediatric practices were invited to participate in the screening study. Parents were asked to complete both the PSC and the longer and well-validated Child Behavior Checklist.[14] The PSC was given first in all cases because it is intended to be given alone. The questionnaires were completed anonymously unless the parent requested that the results be sent to the pediatrician. Ninety-seven percent of the 250 parents who were approached agreed to

participate in the study, and 85% of these parents turned in fully completed, scorable questionnaire packets, providing a final sample of 206 patients, or 82% of those whose parents were approached.

The sample included 111 boys (54%) and 95 girls, of whom 99% were white and 1% black or Hispanic, reflecting the racial and ethnic compositions of the communities served by the pediatricians.

In the sample as a whole, 159 (77%) of the parents listed occupations that were codable for socioeconomic class.[15] Eighteen percent of the sample were from the upper SES groups (professional and minor professional), 44% from the middle (clerical, technical, and managerial), and 38% from the lower (skilled and semiskilled laborers) SES groups.

The validity of the PSC was assessed by ascertaining its rate of agreement with the CBCL in screening cases. Several methods of arriving at screening scores on the CBCL have been presented by Achenbach and Edelbrock.[16] There are two subscales on the CBCL (behavior problems and social competence), and children can be classified on the basis of their scores on either subscale or combined subscales. In our research, CBCL cutting scores based on the behavior problems scale were used because it was believed that this subscale was most comparable in format to the PSC and had a satisfactory misclassification rate. Therefore, in study 1 the CBCL screening scores were based on Achenbach and Edelbrock's published cutting points for the behavior problems subscale (raw score >40 for 6- to 11-year-old boys, >38 for 12-year-old boys, >41 for 6- to 11-year-old girls, and >37 for 12-year-old girls).

For the PSC, numerous strategies for arriving at cutting

Table I. Data on PSC scores from 26-36

Screening score on PSC	Pediatric sample (study 1)		Mental health sample (study 2) Above cutoff (%)
	Above cutoff (%)	Kappa: Strength of agreement with CBCL	
26+	17	0.47	87
27+	14	0.48	87
28+	12	0.52	87
29+	10	0.46	81
30+	8	0.46	77
31+	7	0.40	68
32+	6	0.38	68
33+	6	0.40	68
34+	6	0.39	65
35+	5	0.41	58
36+	5	0.37	52

scores were considered and evaluated using the first third of the pediatric sample cases and half of the mental health sample cases (reported later in this paper) to be collected. These preliminary analyses have been described more fully elsewhere.[17] PSC cutting scores from 20 to 40 were tested to find the score that provided the optimal solution to the following criteria: (1) selects a percentage of an outpatient pediatric sample in keeping with epidemiologic estimates of serious psychosocial problems (5% to 15%); (2) obtains the highest possible level of agreement with cases identified by CBCL in the pediatric sample; (3) identifies the highest possible percentage of cases from the mental health sample. Cutting scores of 28 and 29 were found to be approximately equal in meeting all of these criteria in the preliminary sample and were then tested using the remaining two thirds of the pediatric sample and half of the mental health sample. Because the score of 28 also emerged from the second part of the samples as providing the optimal cutting score, it was adopted as the recommended cutting score. Because the data from the two parts of the samples were in such high levels of agreement and because of the small size of the sample, the data from both parts of the sample are presented together.

The statistical measure used as the standard for assessing the strength of the agreement between the two questionnaires was Cohen's kappa.[18] A kappa value of 0 indicates that the level of agreement is no better than chance, and a value of 1.0 is perfect agreement. Kappa values in the 0.40 to 0.75 range are considered fair to good, and >0.75 are excellent.[19]

RESULTS

The mean total PSC score in the pediatric sample was 18.0 (range 1 to 44; SD 8.3), with a relatively normal, though positively skewed distribution around a median of

17. Table I presents the kappa values for PSC cutting scores from 26 to 36; the percentage of children scoring at or above these cutoff scores is also presented. For comparative purposes, the percentages of children in the mental health sample (described in study 2) scoring above the cutoff points are also included in this table. The highest kappa (0.52) in the pediatric sample was obtained when a cutting score of ≥28 was used. A kappa this high suggests an acceptable level of agreement between the PSC and the CBCL. Similar rates of agreement between the PSC and CBCL were obtained using both subscales of the CBCL. In the pediatric sample, 12% of the children were selected using this PSC cutoff score, compared with 16% using the behavior problem cutting score of the CBCL.

Table II presents the data for the agreement of case classifications based on a PSC cutting score of 28 with case classifications based on the CBCL. The PSC agreed with the CBCL in classifying 165 (80%) of the 206 children as not at risk and 17 (8%) of the children as at risk. The other 24 children were classified as at risk on one questionnaire but not the other. For 13 of these children, a change of ≤3 points in one of the two scores would have brought the two checklists into agreement, suggesting that most of the disagreements between the instruments were relatively minor.

There were no significant differences with respect to sex or SES (using chi-square analysis) between children whose scores were above and below the cutting points on the PSC. For the CBCL, SES had no significant effect on cutting scores, but sex did. Children who were classified as at risk on the CBCL were significantly more likely to be boys (chi-square 6.55, 1 df, P = 0.01).

Item analyses: School-aged pediatric sample. Analyses of the individual PSC items suggested that none of the 35 items was checked as either "sometimes" or "often" too

Table II. PSC by CBCL classification of 6- to 12-year-old pediatric patients

	CBCL					
	Cutting score within normal limits (child not at risk)		Cutting score outside normal limits (child at risk)		Total	
	n	%	n	%	n	%
PSC						
Cutting score within normal range (score <28) coded not at risk by PSC	165	80	16	8	181	88
Cutting score not within normal range (score of ≥28) coded at risk by PSC	8	4	17	8	25	12
Total	173	84	33	16	206	100

rarely (less than 20%) or too commonly (more than 80%). The percentages of parents checking only the "often" category ranged from 1% to 16% for each item. All of the items showed significant (P <0.05) positive Spearman rank order correlations with total score on the PSC. All but one of the items also showed significant positive correlations with positive cutting score (child classified as at risk) on the PSC, and with positive cutting score on the CBCL. Because one item (Absent from school) was positively correlated with these variables and did reach at least marginal significance (P <0.10) in the 13- to 16-year-old sample, it was retained for the purposes of these analyses.

All of the PSC items contributed to the prediction of risk status on the CBCL scale, and discriminant function analyses showed that it was not possible to obtain higher levels of prediction using smaller subsets of PSC items.

Reliability. Test-retest reliability for the PSC was calculated on a subsample of 22 pediatric cases in which parents were asked to complete a second PSC approximately 1 week after filling out the first. The Pearson r was 0.86 for the correlation between the total PSC scores at the two times. Agreement between at risk–not at risk case coding decisions was 20 (91%) of 22. Kappa was 0.69, suggesting very good test-retest reliability for the PSC in classifying cases.

The Cronbach alpha was also used to assess intratest reliability of the PSC. Alpha is a measure of the internal consistency of a scale and indicates the degree to which the scale is undimensional, that is, how well the items tap different aspects of the same domain. Scores of r = ≥ 0.80 are generally considered acceptable. In the school-aged pediatric sample, the Cronbach alpha was 0.86, suggesting that the PSC had a high degree of internal reliability.

Study 2
METHODS

Study 2 attempted to validate the PSC by using a group of patients referred for psychiatric evaluation. It was hypothesized that children who were referred and in whom a psychiatric disorder was clinically diagnosed would score above the PSC cutoff score defined in the pediatric samples of study 1.

The participants in the mental health sample were drawn from two mental health clinics: the child psychiatry service at a major teaching hospital that serves a broad range of patients, and a community mental health center that serves middle and lower SES children and adults.

In this sample the questionnaires were given out by clinicians or clerical staff at the first visit for psychiatric treatment or for psychologic testing at the two clinics. The goal was to obtain questionnaire packets from all consecutive new patients until the desired sample size was reached, but because of administrative difficulties this was not possible. Only about one fifth of the new admissions in the two clinics during the period of the data collection had questionnaires completed, primarily because the administration of the forms was handled mostly by clinicians and many forms were only partially filled out and not codable. Although there did not appear to be any systematic bias in the final mental health sample, it is small and not rigorously selected. The children did have a wide range of disorders and levels of functioning, which permitted us to assess PSC sensitivity in identifying true cases.

All of the children had been referred for psychiatric or psychologic evaluation, and all were diagnosed by their clinicians as having a psychiatric syndrome according to DSM-III criteria. In addition, clinicians had also rated each child's level of functioning according to the 7-point scale provided by Axis V of DSM-III. The clinicians had

Table III. Clinician level of functioning rating by PSC categorization of risk status for mental health sample

	PSC					
	Cutting score within normal limits (score <28) child not at risk		Cutting score outside normal limits (score ≥28) child at risk		Total	
	n	%	n	%	n	%
Clinician rating of level of functioning						
Good	1	33	2	67	3	10
Fair	3	20	12	80	15	48
Poor	0	0	13	100	13	42
Very poor	4	13	27	87	31	

no knowledge of the children's screening scores on the PSC and CBCL.

The sample was made up of 31 6- to 12-year-old children, of whom 24 (77%) were boys. Of the 24 parents who listed codable occupations, 17% were from the upper SES groups, 29% from the middle, and 54% from the lower SES groups. There were no black or Hispanic children.

There were no significant differences (using chi-square statistics) between school-aged mental health and pediatric patients with respect to sex or SES; however, the mean age for the children in the mental health sample was 9.7 years, compared with 8.6 in the pediatric sample (t = 3.0, 235 df, P = 0.002).

RESULTS

In the mental health sample, the mean total PSC score was 34.7 (range 13-55, SD 9.3), with a bimodal distribution around modes of 30 and 39. The mean score in the pediatric sample had been 18.0, and a t test showed that the difference between scores in the two samples was highly significant (t = 10.3, 235 df, P <0.001).

As noted earlier, the validity of the PSC in study 2 was to be determined in part by the extent to which it identified all of the children in the mental health sample as true cases. In this study 27 (87%) of the 31 children were correctly classified. The overall rate of agreement between the PSC and the CBCL case classifications in the school-aged mental health sample was 93%. Cohen's kappa was 0.76, indicating an excellent level of agreement between the two checklists in this sample.

Clinician level of functioning ratings. The clinician ratings of level of functioning in the mental health sample ranged from good (3 on DSM-III Axis V) to very poor (6 on the scale). To permit categorical analyses, the ratings of the children in the poor (n = 10) and very poor (n = 3) categories were grouped together (n = 13) and contrasted with the children rated as fair (n = 15) and good (n = 3)

by the clinicians (Table III). Of the children who were rated by clinicians as functioning in the poor to very poor range, all 13 (100%) were categorized as at risk by the PSC. Twelve (80%) of the 15 children whose functioning was rated as fair by clinicians were classified as at risk by the PSC. Of the other three children who were rated as having a good level of functioning, two were classified as at risk. Thus, when compared with clinician rating of functioning, the PSC showed higher sensitivity with increasing severity of disorder.

Chi-square analyses indicated no significant differences between children who scored above and below the cutting score of 28 in terms of sex or SES. The children who scored below the cutoff point were significantly younger than those who scored above it (t = 3.4, 29 df, P = 0.001).

Item analyses: School-aged mental health sample. In the mental health sample, parents checked individual items as "sometimes," or "often" present in a range from 24% to 100%. The percent of parents checking "often" for each item ranged from 3% to 52%, much higher than the 1% to 16% checked in the pediatric sample.

Reliability. Test-retest reliability for the PSC was not calculated for children in the mental health sample, but the Cronbach alpha was used to assess intratest reliability of the PSC. Alpha was 0.85 (it had been 0.86 in the pediatric sample), suggesting that the PSC had a relatively high degree of internal consistency in this sample as well.

DISCUSSION

Preliminary studies indicate that the PSC correlates well with the best validated screening measure, is reliable, and is an easily administered psychosocial screening instrument for children seen in pediatric settings. Within the outpatient pediatric practices studied, the PSC agreed with the longer CBCL in 89% of the cases in classifying children as well or at risk. When the two instruments disagreed, most of the scores were close to the cutoff.

Among children referred for psychiatric or psychologic evaluation, 87% scored in the at risk category on the PSC, and there was a strong association between a PSC at risk score and clinicians' ratings of impaired functioning.

The goal of defining a cutoff score for the PSC is not to oversimplify the complexity of identifying and treating psychosocial disorders. Obviously, psychosocial disorders cannot be defined with numerical precision, and thus any cutoff score is a theoretical and practical compromise designed to provide a signal to a pediatric health care provider that a psychosocial assessment may be indicated. Using higher cutoff scores with the PSC would select fewer children, who would probably be among the most disturbed and more likely to have been previously identified by parents or teachers. Lower cutoff scores would identify many more children, some of whom would have minimal or no impairment, at a rate that could overwhelm both pediatricians and families. The cutoff point of 28 selects approximately 12% of children from the pediatric waiting room sites used in this study. This percentage is similar to epidemiologic findings in similar settings and is a manageable number in the context of a busy office practice.

A score above the cutoff point on the PSC does not indicate a specific diagnosis; one reason for the lack of subscales on the PSC is to discourage premature diagnostic labeling. However, if these preliminary studies are confirmed, a PSC score of ≥ 28 would suggest that the pediatrician review the questionnaire findings, explore the problem areas identified, assess the severity of psychosocial dysfunction, and then decide on the nature of follow-up (no true problem, child already receiving treatment, follow-up by pediatrician, or referral for more extensive evaluation).

A score below the cutoff point would indicate that time spent on direct questioning of psychosocial status may be better used on other aspects of the child's health supervision or used for another child with potentially greater need. If we assume that the rates we report are found in larger samples, the cutoff score we suggest would result in some (13%) children with psychosocial dysfunction being missed and some (5%), who were not seriously dysfunctional, being briefly assessed by their pediatrician. However, if valid, the PSC may be an improvement over the current practice of either assessing relatively few children selected in an unsystematic manner or doing a very abbreviated review of every patient.

The PSC offers several advantages over previous efforts. Of the 11 parent-completed child behavior checklists in current use,[20-22] only six were developed with a cutting score that attempts to identify children with psychiatric disorders. The most commonly used (Child Behavior Checklist,[23] Parent Rating Scale,[20] Louisville Behavior Checklist,[24,25] and Institute for Juvenile Research Behavior Checklist[26,27] were designed as intake questionnaires for child mental health settings or for psychologic research. These instruments average 153 questions (range 70 to 274) and include enough items to generate tentative diagnostic subscales that are probably not relevant for general screening purposes. The CBCL[23] is the questionnaire most thoroughly validated for screening,[14,16] but is probably not suitable for busy office practice because it has 138 questions, takes 20 minutes to complete, and is quite difficult to score and interpret.

Two shorter questionnaires, the Quay and Peterson Behavior Problem Checklist[28] and the Conners Revised Parent Questionnaire,[21] do not appear to have been validated for use as screening instruments with a single cutoff score. Although the Rutter[29] test is brief (31 items) and has been validated as a first-stage screen in a large study, the questionnaire is probably not suited for clinical use in pediatric practices because it has low sensitivity and specificity rates; moreover, it was developed in Britain and may require revisions for use with American parents.

The attempt to validate a screening instrument for detecting behavioral dysfunction in children immediately faces a number of fundamental problems. Despite the continuing refinement of standardized diagnostic systems such as the DSM-III[13] and the development of structured interviews based on these systems, there is still disagreement about the reliability and validity of adult[29] and child[30] psychiatric diagnosis.

One of the most common ways of obtaining a preliminary assessment of the validity of a screening instrument is to evaluate the extent of its agreement with another instrument that has already been validated for a similar purpose. Because the Achenbach Child Behavior Checklist appeared to be the instrument most thoroughly validated for general psychiatric screening purposes, this measure was selected for our first study to see whether the PSC identified the same types of children as being at risk within an outpatient pediatric practice.

The use by Achenbach and Edelbrock[14] of groups of subjects who were or were not in psychiatric treatment to validate the CBCL is a somewhat more powerful but still conceptually imprecise method of assessing a measure's validity. Individuals who are in treatment for psychiatric disorder are considered to be true cases without any further evaluation, simply by virtue of their being in treatment. Individuals who are not in treatment are considered to be noncases. The method is flawed because many individuals who are not in treatment should be, and probably a smaller number of individuals are in treatment

but do not need to be. Nevertheless, this method does offer a useful approach to validation of a screening instrument, and was used in study 2.

With regard to future research with the PSC, three basic questions require extensive further work:

1. Which children should a psychosocial screening instrument select? The studies reported used a score above the CBCL cutoff (study 1), and referral for psychiatric or psychologic evaluation with diagnostic information based on clinical interview (study 2) as the validation criteria. Although useful first steps, these criteria are too indirect to be considered definitive.

2. Does the PSC select the "appropriate" children from the waiting room population? Beyond an expectable rate of false negative and false positive results for any screening method, does the PSC miss subgroups who could benefit from further evaluation or treatment, or incorrectly identify as cases certain types of children who are really well?

3. How valid will the PSC be in practice sites that differ as to ethnicity, social class, geographic location, or organizational structure (private office vs prepaid)?

Studies in progress are attempting to address these three questions by (1) defining criteria for which children require further evaluation, (2) using a prospective design that evaluates children scoring above and below the PSC cutoff score, and (3) replicating studies in different practice settings.

Screening tests have a natural and important place in pediatric practice, and most, for example, the hematocrit or Denver Developmental Screening Test, have a somewhat easier task in defining an at risk category. The PSC is an attempt to apply the same screening principles to harder to define psychiatric syndromes and psychosocial disorders. Although psychosocial screening tests cannot attain the levels of accuracy possible with assays, given the current nature of pediatric practice, some method is needed to help practitioners focus available resources, preferably at an early point, on children at psychosocial risk. These initial studies of the PSC indicate that it is feasible to develop a psychosocial screening questionnaire that is practical for pediatric settings.

REFERENCES

1. Starfield B, Gross E, Wood M, et al. Psychosocial and psychosomatic diagnoses in primary care of children. Pediatrics 1980;66:159-167.
2. Kessel SJ, Haggerty RJ. General pediatrics: a study of practice in the mid-1960's. J PEDIATR 1968;73:271-279.
3. Goldberg ID, Regier DA, McInerny TK, et al. The role of the pediatrician in the delivery of mental health services to children. Pediatrics 1979;63:898-909.
4. Kanner L. The development and present status of psychiatry in pediatrics. J PEDIATR 1937;11:418-435.
5. Aldrich CA, Veeder BS. An outline of the pediatrist's relation to mental hygiene. J PEDIATR 1936;9:323-327.
6. Senn MJE. Relationship of pediatrics and psychiatry. Am J Dis Child 1946;71:537-549.
7. Gardner GE. Child psychiatric principles in pediatric training. Med Clin North Am 1967;51:1427-1438.
8. Task Force on Pediatric Education. The future of pediatric education. Evanston, Ill.: American Academy of Pediatrics, 1978.
9. Jellinek M. The present status of child psychiatry in pediatrics. N Engl J Med 1982;306:1227-1230.
10. Conners CK. Rating scales. In: Noshpitz JD, ed. Basic handbook of child psychiatry. New York: Basic Books, 979.
11. Wimberger RC, Gregory RJ. A behavior checklist for use in child psychiatry clinics. J Am Acad Child Psychiatry 1968;7:677-681.
12. Jellinek M, Evans N, Knight RB. Use of a behavior checklist on a pediatric inpatient unit. J PEDIATR 1979;94:156-158.
13. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 3rd ed. Washington, D.C.: The Association, 1980.
14. Achenbach TM, Edelbrock CS. Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. Monogr Soc Res Child Dev 1981;46(1, Serial No. 188).
15. Hollingshead AB. Four factor index of social status. New Haven, Conn. Yale University Department of Sociology, 1975.
16. Achenbach TM, Edelbrock CS. Manual for the Behavior Problem Checklist and Revised Behavior Profile. Burlington, Vt.: University Associates in Psychiatry, 1983.
17. Murphy JM, Jellinek MS. Development of a brief psychosocial screening instrument for pediatric practice. Unpublished manuscript, Massachusetts General Hospital. Boston: 1985. (Final Report to NIMH Contract 84M0213612.)
18. Cohen J. A measure of agreement for nominal scales. Educ Psychol 1960;20:37-46.
19. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977;33:159-174.
20. Humphreys LE, Ciminero AR. Parent report measures of child behavior: a review. J Clin Child Psychol 1979;56-63.
21. Goyette CH, Conners C, Ulrich RF. Normative data on revised Conners parent and teacher rating scales. J Abnorm Child Psychol 1978;6:221-226.
22. National Institute of Mental Health. Series AN No. 1. The assessment of psychopathology and behavioral problems in children: a review of scales suitable for epidemiological and clinical research (1967-1969). DHHS Publication No.

(ADM) 83-1037. Washington, D.C.: U.S. Government Printing Office, 1983.

23. Achenbach TM. The classification of children's psychiatric symptoms: a factor analytic study. Psychol Monogr 1966;80(7, No. 615).

24. Miller LC. Dimensions of psychopathology in middle childhood. Psychol Rep 1967;21:897-903.

25. Louisville Behavior Checklist manual. Los Angeles: Western Psychological Services, 1977.

26. Lessing EE, Beiser H, Krause MS, et al. Differentiating children's symptom checklist items on the basis of judged severity of psychopathology. Genet Psychol Monogr 1973;88:329-350.

27. Lessing EE, Clark CC. Reliability and validity of IJR Behavior Checklist Scores: number versus pathology level of symptoms. J Abnor Child Psychol 1982;10:337-362.

28. Quay HC, Peterson DR. Manual for the Behavior Problem Checklist. Unpublished manuscript. University of Miami, and Rutgers, University, 1979.

29. Rutter M, Tizard J, Whitmore K. Education, health and behaviour. London: Longmans, 1970.

30. Schnacht T. DSM-III and the politics of truth. Am Psychol 1985;40:513-521.