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Screening for Psychosocial Problems in 4–5-Year-Olds During Routine EPSDT Examinations: Validity and Reliability in a Mexican-American Sample

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Summary

The effectiveness of the Pediatric Symptom Checklist (PSC) as a psychosocial screening measure to meet Federal Medicaid/Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) requirements was examined in 117 low-income preschool (aged 4–5 years old) Hispanic children during well-child examinations in three clinics over an 8-month period. The PSC identified 7% of the sample as at risk for psychosocial problems. The PSC was significantly associated with parental ratings of the children's problems in functioning, with pediatric clinicians' decisions to make mental health referrals, with degrees of associations similar to those found between PSC scores, and with the same measures with school-aged children in the same clinics. Cronbach's alpha was high (r=.87) and virtually identical in English, Spanish, oral, and written formats. Although it identified a slightly lower rate of psychosocial problems in 4–5-year-olds than it had in school-aged children, the PSC appeared to provide an effective method of screening for psychosocial problems during EPSDT examinations.

Introduction

Screening for Psychosocial Problems in 4–5-Year-Olds

Before attempting to design a method that recognizes the psychosocial needs of young children in poor communities, it is necessary to understand the epidemiology of childhood psychiatric disorders, governmental approaches to screening children, and barriers to recognition of psychosocial problems.

Epidemiologic studies report childhood psychiatric disorder prevalence rates in the United States to be as high as 17–22% of all children, with more conservative but widely accepted sources estimating the median rate of child maladjustment to be about 12% of all children.[1–7] Of the approximately 7.5 million children with a diagnosable mental illness, only one fifth receive appropriate mental health treatment.[8–13] Untreated psychosocial disorders can lead to disruptions in school and family life[14] and can persist into adulthood.[15,16]

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The situation is worse for poor children. Rates of mental health problems in low-income and minority children range from 34 to 50%.[17–22] Two recent studies in low-income samples also show low rates of treatment for poor children with only a small percentage (11–25%) of the children with impaired functioning having ever received traditional mental health treatment.[21,22] Since 16 million of the nation's 77 million children are covered by Medicaid,[23,24] findings of high rates of psychosocial problems and low rates of treatment have major implications for governmental health budgets, especially newly evolving Medicaid Managed Care programs,[25] which are now being tried out in 44 states.[26]

Early and Periodic Screening, Diagnosis, and Treatment

The program for well-child pediatric care under Medicaid is known as Early and Periodic Screening, Diagnosis, and Treatment (EPSDT). The EPSDT program specifies 12 examinations for children during the first 5 years of life and one every other year for children aged six through 20. In 1992, EPSDT provided 9 million separate screening examinations to 7 million children, with almost 50% of these children under the age of 6.[27] EPSDT mandates periodic screening for a variety of conditions,[27,28] and since 1989, clarifications to the guidelines have stated that screening for psychosocial and developmental problems must be included as a part of the examinations,[29,30] although regulations leave the choice of how to screen to individual clinicians.

Unfortunately, most state EPSDT programs for mental health screening are either inadequate or virtually nonexistent.[31–39] A report on CHDP (the California implementation of EPSDT) screening in 1982 showed that the number of children who screened positive for developmental or mental health problems was less than one per 1000 children, far less than the rate of psychosocial problems expected in this population (120 per 1000 children).[40] Recent work by the authors has shown a slightly higher rate (0.5%, or approximately five per thousand) but one still far below the expected rate for referral for psychosocial problems in EPSDT examinations in one of California's better-served counties in the early 1990s.[41]

Barriers to Recognition and Treatment of Psychosocial Problems

Underrecognition of psychosocial disorders is compounded by a number of economic and cultural barriers. Medicaid budget cuts in the 1980s coupled with a growth in the number of poor children increased the disparity in services provided to middle-class versus poor children.[42] Even in middle-class samples, pediatricians do not receive adequate training concerning psychosocial problems, do not have time during office visits to address mental health needs, may have limited mental health care referral networks, and do not have brief, validated screening procedures for identifying children who have the greatest need for intervention.

In recent years, this last barrier at least has been removed with the development of the Pediatric Symptom Checklist (PSC). The PSC has proved to be useful and valid screening tool in general pediatric practice[43–47] as well as in a variety of school, outpatient, and subspecialty clinic pediatric settings.[48–52] Three studies have validated the PSC for use with low-income and minority children,[53–55] and recent work in California has demonstrated the reliability and validity of both Spanish and English versions of the PSC with school-aged, low-income Hispanic children in an EPSDT setting.[41]

Recognition of Psychosocial Problems in Preschool-Aged Children

The few studies that have examined the psychosocial needs of preschoolers have suggested that problems are about as common as, and services are probably even more limited than, those in older children.[56] Unfortunately, screening preschool-aged children for psychosocial problems presents a unique set of challenges: a shorter developmental history, a narrower

range of daily expectations, and more limited verbal skills make it more difficult to evaluate emotional and behavioral problems in preschoolers. Although the PSC has been used most often with school-aged children, preliminary work has shown it to be valid and reliable with 4–5-year-old children as well.[57] The present study examines the validity and reliability of the PSC for screening 4–5-year-old children during EPSDT examinations using Spanish as well as English versions of the form.

Methods

Sample

The current study was conducted in three pediatric outpatient clinics providing EPSDT screenings for Medicaid and other low-income children in Ventura and San Mateo counties in California. The child's parent or guardian was asked to fill out a one-page, two-sided form in the waiting room prior to the EPSDT visit. The first page included a brief description of the reason for the psychosocial screening study, a space to indicate consent, and the PSC items. On the other side of the page was a series of 13 questions ("Your Child's Behavior, Emotions, and Learning") concerning the child's functioning in the areas of conduct, relationships with parents and peers, health, and overall adjustment. Although the primary purpose of these questions was to provide additional data about functioning for pediatric clinicians so that they could further assess a child's need for referral in the event of a positive screen on the PSC, these questions also provided a means of estimating the validity of the PSC in this new (EPSDT, preschool aged, and primarily Spanish-speaking) population. Both Spanish and English versions of the forms were available for parents.

Two approaches to PSC administration were followed. In the first phase, the PSC was given to the parents in the standard paper-and-pencil format prior to the EPSDT visit without additional assistance from the clinic or study staff, unless the parent specifically requested it. Because a number of parents appeared to have trouble reading the forms, after about half of the questionnaires bad been collected, a research assistant from the study was assigned to the clinics and was present during clinic days to read the forms to parents and to record their answers.

Measures

The Pediatric Symptom Checklist (PSC)—The PSC is a one-page, 35-item questionnaire designed to be filled out by parents while in their pediatricians' offices. The parent indicates for each item whether it is "never," "sometimes," or "often" present, with scores of 0, 1, or 2 given for these answers. A total score is obtained by adding the scores for each of the items, with possible scores ranging from 0 to 70 for each child. For 4–5-year-old children, the four items that pertain to school ("has trouble with teacher," "less interested in school," "absent from school," and "school grades dropping") are excluded and scores are based on a smaller, 31-item set. As a result, the range of possible scores for 4–5-year-old children is slightly lower (0–62) and a score of 24 or greater (rather than the standard cutoff score of 28) is used to indicate a positive screening and the need for further evaluation.

Your Child's Behavior, Emotions, and Learning (YCBEL)—On the back of the standard PSC was a form entitled "Your Child's Behavior, Emotions, and Learning" (YCBEL). As noted earlier, the YCBEL consists of 13 questions about the child's current functioning, psychosocial service needs and utilization, and possible problems with learning, health, peers, parents, and conduct. The YCBEL also provides spaces for parents to describe their child's problem and/or need for services. Parents' responses to these questions in English and Spanish were coded and summarized for data analysis.

PM160—The official billing and initial referral form used for all EPSDT examinations in California is the PM160. This form records the child's age, ethnic group, date of birth, and the presence of mental or physical problems that were identified in the screening visit, as well as billing information. Of particular importance are the follow-up codes that indicate whether the child was referred to another clinician for further evaluation or treatment. The pediatric clinician's coding of these problems on the PM160 was the principal measure of referral in this study. The PM160 and the PSC/YCBEL were photocopied for the research team.

Chi-square tests were used to assess the degree of association between positive screening scores on the PSC and parental ratings of the children's problems in functioning, and with pediatric clinicians' decisions to make mental health referrals in the sample of 4–5-year-old children. The association between PSC scores and functioning in the sample of 4–5-year-olds was compared with those found between PSC scores and the same measures from the same clinic for older children.

Results

Sample

Parents of children aged 4–17 attending the three pediatric outpatient clinics for EPSDT screens during the study period were approached in the waiting room and asked to voluntarily fill out a PSC/YCBEL. Parents of 602 children completed the form over the 8-month period. Data on 435 of these children who were 6 years or older are presented elsewhere.[41] Of the remaining 167 children, 34 were below the age of 4 years, leaving 133 children between the ages of 4–5 years. Of these children, 16 were excluded because of incomplete data on the PSC (four or more items missing), leaving 117 children in the final sample.

The sample of 117 4–5-year-old children had a mean age of 4.9 years and was 51% (60/117) male. Ninety-seven percent (114/117) of the children were Mexican-American/Hispanic, 2% (2/117) were Caucasian, and 1 child (1 %) was from an "other" ethnic group. Ninety-one percent (107/117) of the respondents used the Spanish form. Fifty-one percent (N=60) of these children were screened with the written format and 49% (N=57) were screened with the oral format. Twenty-two percent (20/92) of children lived in single-parent households. One percent (1/105) of the children were currently receiving mental health services. Five percent (5/104) were currently receiving special education services. Three percent (3/117) of the children were referred by the EPSDT clinician for further mental health services as a result of their current examinations.

PSC Scores and Case Rates

The mean PSC score for this sample was 10.2 (SD=8.1; range=0–40) and 7% (8/117) of the sample had PSC scores of 24 or greater. This PSC case rate was only slightly lower than the rate (10%) found for school-aged children in the same communities,[41] although it was significantly lower than in the previous study of 4–5-year-old children where the case rate was 14%.[58] The PSC-positive rate for males was significantly higher than for females (12% vs 2%; x2=4.8, df=l, p <.05). All the PSC-positive scores were of Mexican/Hispanic children. The PSC-positive rate (7%; 4/57) was the same for oral and written formats. Ten percent (2/20) of single-parent households had PSC-positive children. None of the PSC-positive cases had ever received mental health services, and the one child who was currently receiving mental health services was PSC negative. None of the PSC-positive children were currently receiving special education services. None of these differences were statistically significant.

Of the three children who were referred for mental health services by the pediatric clinician, two (67%) were PSC positive, a significantly higher PSC-positive rate than in the nonreferred children (6/113:5%; x2=17.1, df=l, p <.0.001).

YCBEL Questions of Functioning

As shown in Table 1, 82% (82/100) of parents rated their children as functioning "very well" or "well," 17% (17/100) said "so so," and 1% (1/100) as "poorly." Sixteen percent (17/107) of parents stated that they thought their child had a problem with behavior, emotions, or learning for which the child needed help, and an additional 9 parents (8%) answered "maybe" to this question, a total of 24% of parents who rated their child as definitely or maybe needing help. When asked if they would like to have additional services for their child's behavior, emotional, or learning problems, 27% (28/102) of parents said "yes." Thirty-six percent (37/103) of parents thought that their child definitely *or* maybe had a problem *or* should receive additional help and 14% (15/109) of parents thought that their child definitely had a problem *and* should receive additional help. Nine percent (9/99) of parents stated that their child had a health limitation, 3% (3/105) stated that their child had a problem with parents, 11% (12/105) stated that their child had a problem with peers, and 11% (11/102) responded positively to their child having a conduct problem. When these four areas of health, parental and peer relationships, and conduct were summed, 77% (75/97) of the children had no problems, 13% (13/97) had one or two problems, and 9% (9/97) had three or more problems.

PSC Scores and YCBEL Questions of Functioning

As shown in Table 1, scores of 24 or greater on the PSC were significantly associated with parental ratings of overall functioning, assessment of whether their children had a problem or not, and their children's need for additional services. When parents who rated their children as functioning "poorly" were combined with parents who rated their children as "so so," 5 of the 18 (28%) were PSC positive, compared with 4% (3/82) of parents who rated their children as doing well or very well (x2=19.2, df=l, p <.000l). Children who were rated as definitely having problems were significantly more likely to be PSC positive than children rated as maybe or not having a problem (18% vs 11% vs 3%; x2=9.1, df=2, p <.05). Children who were rated as needing additional mental health services were significantly more likely to be PSC positive than other children in the sample (18% vs 3%; x2=7.3, df=l, p <.01).

Parents who felt that their child possibly or definitely needed help for problems *or* wanted additional services for their child were significantly more likely to be PSC positive than parents who responded negatively to both questions (14% vs 4%; x2=4.1, df=l, p <.05). Parents who felt that their child needed help for problems *and* wanted additional services for their child were significantly more likely to be PSC positive than parents who responded negatively (20% vs 4%; x2=5.3, df=l, p <.05).

Three YCBEL items about functioning (problems with parents, peers, and conduct) were significantly associated with PSC-positive scores, and the fourth YCBEL item (problem with health) was marginally significant. When these four areas of functioning were summed, children who were rated as having three or more problems were significantly more likely to be PSC positive than children with one to two problems or children with none of these problems (56% vs 8% vs 3%; x2=29.7, df=2, p <.00001.)

Types of Problems Reported by Parents

Twenty-six of the 37 parents who indicated a problem or wanted a service wrote a codable description of the problem in the space on the form. Fourteen percent (17/117) of the parents

in the sample described a problem that was primarily emotional or behavioral. Four percent (5/117) described problems that were primarily academic, and 3% (4/117) described problems that were both academic *and* emotional/behavioral. As shown in Table 1, the PSC-positive rate was highest for children in the latter group, second highest for children whose problems were primarily emotional/behavioral, and lowest for children whose parents reported only academic problems or no problems at all. These findings were statistically significant (x2=15.5,df=3, p <.000l).

PSC Rates in 4–5-Year Olds vs PSC Rates in 6–17-Year-Olds

As shown in Table 1, the relationships between these indicators of psychosocial functioning and PSC-positive scores for 4–5-year-olds were similar to those found with the same measures in 6–17-year-old children in the same clinics. (See Murphy et al, 1995, for complete description of this sample.[41]) For example, only 4% of the 4–5-year-old children who were functioning “very well” or “well” were PSC positive as compared with 3% of the 6–17-year-olds. Twenty-five percent of the children who were functioning “so so” were PSC positive in the 4–5-year-old sample, the same as in the 6–17-year-old sample. One hundred percent of children who were functioning “poorly” were PSC positive in the 4–5-year-old sample as compared with 47% of 6–17-year-olds who were functioning “poorly.” The degree of association between PSC-positive screening scores and overall functioning was actually significantly higher in the 4–5-year-old sample (phi=.44, p <.0001) than it was in the 6–17-year-old sample (phi=.41, p <.00001). Similarly, the association between PSC-positive scores and parents ratings of significant problems in their children was quite comparable (phi=.38, p <.0001) in the 4–5-year-old sample and (phi=.42, p <.00001) in the 6–17-year-old sample.

Item Analysis

The reliability of the 31-item PSC in this sample of 4–5-year-olds was similar to that reported for the 35-item PSC with 6–17-year-olds in the same communities (Cronbach’s alpha =.87 for 4–5-year-olds vs .91 for 6–17-year-olds.[41]) Alpha was virtually identical in Spanish (.85), English (.87), oral (.86), and written (.87) formats.

Discussion

The current study demonstrated the reliability and preliminary validity of the Pediatric Symptom Checklist for screening 4–5-year-olds for psychosocial problems during routine pediatric examinations under the Medicaid/EPSDT program. Positive screening scores on the PSC were significantly associated with parental ratings of problems in the children’s overall psychosocial functioning, presence of problems for which the children needed additional help or services, and functional problems in the areas of health, parental and peer relationships, and conduct. These associations between the scores and indicators of functioning were found with Spanish and English forms, for oral and written methods of administration. The internal reliability of the form was high and similar for both languages and both methods of administration.

The rate of positive screening scores of 4–5-year-olds on the PSC (7%) was similar to but slightly lower than the rate of positive screening for school-aged children in the same communities (10%), suggesting that psychosocial problems appear to be nearly as common in preschoolers. Epidemiologic studies on the prevalence of psychiatric disorders in this age group have not been done equally within a range of cultures, and DSM-IV symptom criteria are often oriented toward older children and adolescents. The lower prevalence rate of psychosocial problems in children below the age of 6 years may reflect the natural history of

disorders that may not manifest until a later age and that these children have had little or no experience with school settings.

The potential utility of the PSC is demonstrated since it found “new” cases and encouraged referral; none of the PSC-positive cases had ever received mental health services and two thirds of the referrals for mental health services made by pediatric clinicians were of PSC-positive children.

In summary, the PSC appears to provide a valid, reliable method of screening for psychosocial problems during EPSDT visits for 4–5-year-old as well as for 6–17-year-old children. The PSC screening process led to a significant and more realistic, but not over whelming, increase (3%) in the rate of referral for mental health services and appears to provide a method of identifying children who would benefit from services from early intervention and managed-care programs.

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Table 1

Association Between PSC-positive Scores and YCBEL Functioning Questions in Preschool-Aged and School-Aged Pediatric Outpatients

	Total 4–5 yrs. N (%) 117 (100%)	**PSC+ 4–5 yrs.[1] N (%) 8 (7%)**	**Total 6–17 yrs.[2] N (%) 388 (100%)**	**PSC+ 6–17 yrs.[3] N (%) 40 (10%)**
Overall functioning				
Very well/well	82 (82%)	3 (4%)	236 (67%)	6 (3%)
So-so	17 (17%)	4 (24%)	98 (28%)	24 (25%)
Poor	1 (1%)	1 (100%)***	17 (5%)	8 (47%)***
Emotion or behavior problem				
No problem	81 (76%)	2 (3%)	201 (59%)	3 (2%)
Maybe	9 (8%)	1 (11%)	31 (9%)	7 (23%)
Yes	17 (16%)	3 (18%)*	111 (32%)	26 (23%)***
Wants services				
No	74 (73%)	2 (3%)	199 (64%)	7 (4%)
Yes	28 (27%)	5 (18%)**	110 (36%)	24 (22%)***
Has problem *and* wants services				
No	94 (86%)	4 (4%)	292 (80%)	22 (8%)
Yes	15 (14%)	3 (20%)*	73 (20%)	18 (25%)***
YCBEL sum problem (health/parents/peers/conduct)				
0	75 (77%)	2 (3%)	270 (79%)	7 (3%)
1–2	13 (13%)	1 (8%)	57 (17%)	18 (32%)
3+	9 (9%)	5 (56%)***	12 (4%)	10 (83%)***
Type of problem/services:				
No problem	91 (78%)	3 (3%)	253 (65%)	13 (5%)
Behavior/emotional	17 (14%)	3 (18%)	49 (13%)	12 (25%)
Academic only	5 (4%)	0 (0%)	54 (14%)	4 (7%)
Academic & behavioral	4 (3%)	2 (50%)***	32 (8%)	11 (34%)***

* p <.05

** p <.01

*** p <.0001

[1] PSC+=PSC score > 24, age < 6 yrs.

[2] Data taken from Murphy et al. 1995.

[3] PSC+=PSC score > 27, age=6–18 yrs.