Use of the Pediatric Symptom Checklist in a Low-Income, Mexican American Population

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Objective: To evaluate the usefulness of the Pediatric Symptom Checklist (PSC) in identifying behavioral problems in low-income, Mexican American children.

Design: A cross-sectional study design was used to examine the PSC as a screening test, with the Child Behavior Checklist (CBCL) as the criterion standard.

Setting: The study was conducted at a health center in a diverse low-income community.

Patients: Eligible patients were children and adolescents, 4 to 16 years of age, who were seen for nonemergent, well-child care. Of 253 eligible children during a 9-month study period, 210 agreed to participate in the study. There was a 100% completion rate of the questionnaires. The average age of the children was 7.5 years, and 45% were female. Ninety-five percent of patients were of Hispanic descent (Mexican American); 86% of families spoke only Spanish. Socioeconomic status was low (more than three fourths of families earned <$20000 annually).

Results: The CBCL Total scale determined that 27 (13%) of the children had clinical levels of behavioral problems. With a cutoff score of 24, the PSC screened 2 (1%) of the 210 children as positive for behavioral problems. Using the CBCL as the criterion standard, the PSC sensitivity was 7.4%, and the specificity was 100%. Receiver operator characteristic analysis determined that a PSC cutoff score of 12 most correctly classified children with and without behavioral problems (sensitivity, 0.74; specificity, 0.94).

Conclusions: When using the PSC, a new cutoff score of 12 for clinical significance should be considered if screening low-income, Mexican American children for behavioral problems. Additional study is indicated to determine the causes of the PSC's apparently lower sensitivity in Mexican American populations.

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MORE THAN 25 years ago, the term new morbidity was coined to describe the increasing importance of childhood psychosocial morbidity among more easily recognized and increasingly curable pediatric ailments. Today, there is mounting evidence that childhood behavioral and psychosocial problems have reached staggering levels, with recent epidemiologic studies showing prevalence rates as high as 17% to 27% in US children. Several studies have shown that minority and low-income children experience even higher rates of mental health and behavioral problems, with prevalence rates in some high-risk populations approaching 30% to 50%.

There are numerous barriers to appropriate recognition of behavioral and psychosocial problems in children. Pediatricians do not receive sufficient training in behavioral problems of children, office visits are short, parents often do not bring up child or family mental health issues, and options for referral frequently are limited. In addition, when working with minority or immigrant families, clinicians are faced with language or cultural obstacles to obtaining the most accurate information on a child's well-being. These combined barriers result in pediatricians recognizing as few as 4% to 7% of children with significant behavioral problems or psychiatric disorders. Furthermore, as few as 11% to 25% of children who have their conditions recognized and diagnosed subsequently are referred to an appropriate mental health care practitioner.

A method to improve the primary care pediatrician's ability to recognize and appropriately refer children with behav-

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ioral or psychosocial problems is to systematically screen all children with a standardized instrument designed for this purpose.20,21 One such screening tool, developed by Jellinek and Murphy,22 is the 35-item Pediatric Symptom Checklist (PSC), designed specifically for use by the pediatrician to screen for mental health problems in children ages 4 to 16 years in the primary care setting. Due to its brevity and easy scoring, the PSC is more appropriate for use as a screener in a busy pediatric setting than are comprehensive, long, and complicated-to-score psychosocial questionnaires, such as the Child Behavior Checklist (CBCL). During the past several years, the PSC has seen widening use and was evaluated recently for use nationally.23 However, few studies have carefully evaluated the use of the PSC in low-income minorities,8,24 and even fewer have specifically examined the utility of the PSC in low—socioeconomic status (SES), Spanish-speaking, Hispanic populations.14,15

The purpose of the current study was to evaluate the use of the PSC in identifying behavioral problems specifically in a population of poor, Mexican American children seen in the setting of a primary care, community-based clinic. We used the CBCL as a standard measure of behavioral problems against which we evaluated the validity of the PSC. This comparison allowed us to calculate the sensitivity and specificity of the PSC in this population. In addition, we used receiver operator characteristic (ROC) curves to investigate whether there was an optimal cutoff score, with high sensitivity and specificity, for the PSC when used in this low-income, Spanish-speaking population.

METHODS

SETTING

The study was conducted in East Palo Alto, Calif (population, 28000), from March 1 through December 31, 2001. The city is composed of a diverse, middle- and low-income population with a large proportion of Mexican American immigrants. The clinic site is a small community health clinic that serves the local adult and pediatric population for both well and sick visits.

SAMPLE

Eligible children and adolescents included all those 4 to 16 years of age who were seen at the clinic for nonemergent, well-child care with a parent or guardian during the study period. Children seen for sick or acute care visits were not included. Each eligible child was enrolled only once.

PROCEDURES

A bilingual, bicultural, Mexican American research assistant approached eligible families while they registered in the clinic and obtained consent if they agreed to participate. Questionnaires were filled out while the family was waiting to be seen. All questionnaires were available in Spanish and English. Families were asked if they would like assistance, and in nearly all cases, the research assistant then administered the questionnaires verbally. Each family received a $10 telephone card for participating. An additional questionnaire was attached to the patient’s medical chart for completion by the physician after the appointment. The physician did not have access to the results of the parent-completed questionnaires. The study received the approval of the Stanford Human Studies Research Board.

MEASURES

Visit Characteristics

The research assistant noted on each visit whether the child was being seen for a well-child examination or for vaccinations only.

Patient Demographics

Each family completed a demographic questionnaire. Information gathered included child sex, race and ethnicity, maternal education, family history of mental illness or treatment, family income, insurance status, and household structure, including parental marital status, number of children, and total number of individuals living in the home. Information on immigration was obtained by asking whether the child, parent, or grandparent was born in the United States. If the child was born outside the United States, the family was asked how many years the child had been living in this country. Information on the primary language used in the home also was collected.

Questionnaires

The questionnaires given to each family were the CBCL26 and PSC.2 The physicians filled out the Physician Psychosocial Assessment Form (PPAF4), attached to each study patient’s medical chart.

Child Behavior Checklist

The CBCL is a parent-completed diagnostic tool that is available in 2 forms divided by age (1 1⁄2-5 years and 6-18 years). The CBCL has 118 items that describe specific behavioral and emotional problems, plus 2 open-ended items for reporting additional problems. Parents rate their children for how true each item is now or within the past 6 months using the following scale: 0, not true; 1, somewhat or sometimes true; 2, very true or often true. Raw scores for 3 broadband factors and 8 syndrome scales are generated from summed items; raw scores then are converted to normalized T scores. T scores of 60 or higher are within the clinical referral range; higher scores represent more deviant behavior.

The CBCL has been widely used and is well validated in a variety of languages and socioeconomic groups. Investigators have used it as the criterion for diagnosis of behavior disturbance against which to gauge the validity of both screening instruments27 and psychological interview measures.28 The published Spanish version of the CBCL used in this study has been found to have good internal consistency and concurrent validity in Spanish-speaking populations.29 The CBCL was chosen as the standard of comparison to avoid basing the calculation of PSC validity on a small subset of the data as done in previous studies using structured interviews as the standard.24,30-32 and because the CBCL has been widely used as the criterion standard in previous PSC research in both middle-class and low-income minority populations.8

Pediatric Symptom Checklist

The PSC is a 1-page, parent-completed questionnaire with 35 items that screens for childhood mental health problems. Parents rate the frequency of behaviors and symptoms listed as “never,” “sometimes,” or “often.” These responses are given 0, 1, or 2 points, respectively, with a range of possible scores from 0 to 70 points. A total score is calculated by adding the individual values for each item. This total score then is compared with an age-specific cutoff. The published cutoff for children


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aged 6 to 16 years is 28 points. In the preschool population, 4 items pertaining to school are excluded, and the cutoff for children aged 4 to 5 years is 24 points, with a possible range of 0 to 62 points. A score above the cutoff is considered positive and indicates a need for further assessment or referral. As part of the study, a translation of the PSC to Spanish was done, followed by a back-translation to English by a different person. No significant inconsistencies were found between the original and back-translated versions of the questionnaire.

**Physician Psychosocial Assessment Form**

The PPAPF is a 13-category checklist of developmental and psychosocial problems that is based on a World Health Organization–sponsored, primary care, child-oriented classification system. The categories include physical growth and development, sleep, cognitive/language, school, behavior, feelings, and parent-child relationships among others. Each category lists 3 to 8 specific problems. The number of items checked on each form was summed for a single total (with a maximum score of 32). The total score represents extent or numbers of behavioral problems (as opposed to clinical level of behavioral problems).

**DATA ANALYSIS**

Demographic characteristics of the study population were determined. Descriptive analyses were used to examine the association of demographic characteristics with high scores on the PSC and CBCL to determine if specific risk factors were correlated with increased behavioral problems in the study population.

Means and standard deviations for the PSC and CBCL and T scores for the CBCL Total, Internalizing, and Externalizing problems. The number of items checked on each form was summed for a single total (with a maximum score of 32). The total score represents extent or numbers of behavioral problems (as opposed to clinical level of behavioral problems).

**RECRUITMENT AND DATA COLLECTION**

During the study period, 253 eligible children aged 4 to 16 years attended the clinic for routine health care. The part-time research assistant was able to approach the parents of 214 (85%) of these eligible children, and 210 (98%) of those approached agreed to participate. There was a 100% completion rate of the questionnaires for a final sample of 210 children. The clinic practitioners filled out the PPAPF, with a completion rate of 92%.

**DEMOGRAPHICS**

The average age of the children in the study was 7.5 years (SD, 3.5 years), and 45% were female. Eighty-four percent of the children were seen for well-child physical examinations, whereas the remaining 16% were being seen for immunizations or other routine screening. Complete demographic information is listed in Table 1. Although this study used a convenience sample, 95% of the patients are of Hispanic descent (Mexican American), with 86% of the families speaking only Spanish in the home. More than one third (38%) of the children were born outside the United States. There is ample evidence of the low SES of these families with low maternal education (53% had a less than seventh grade education), low incomes (77.5% families earned <$20000 yearly), minimal insurance coverage (41% uninsured), and large numbers of individuals living together in the home. Although 32% of the children came from single-parent families (a known risk factor for childhood behavioral problems), only 9% of the mothers had never been married. Divorce, separation, or death of a parent accounted for most of these single-parent homes.
Table 2. Mean Scores on Behavior Problem Scales for All Children and Separated by Sex

<table>
<thead>
<tr>
<th>Scale</th>
<th>Total (N = 210)</th>
<th>Boys (n = 115)</th>
<th>Girls (n = 95)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC</td>
<td>7.3 ± 4.4 (0-26)</td>
<td>7.4 ± 3.9 (0-18)</td>
<td>7.1 ± 4.9 (0-26)</td>
</tr>
<tr>
<td>CBCL Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>49.7 ± 8.3 (26-73)</td>
<td>49.5 ± 8.2 (28-71)</td>
<td>49.9 ± 8.4 (26-73)</td>
</tr>
<tr>
<td>Externalizing</td>
<td>52.0 ± 8.5 (29-71)</td>
<td>52.4 ± 8.5 (29-71)</td>
<td>51.5 ± 8.6 (33-71)</td>
</tr>
<tr>
<td>PPAF</td>
<td>50.0 ± 7.8 (28-79)</td>
<td>49.4 ± 7.6 (28-69)</td>
<td>50.8 ± 7.9 (32-79)</td>
</tr>
<tr>
<td>PSC</td>
<td>0.8 ± 1.4 (0-8)</td>
<td>0.9 ± 1.3 (0-8)</td>
<td>0.6 ± 1.2 (0-7)</td>
</tr>
</tbody>
</table>

Abbreviations: CBCL, Child Behavior Checklist; PPAF, Physician Psychosocial Assessment Form; PSC, Pediatric Symptom Checklist.

Table 3. Number of Children Who Are Positive (as Measured by CBCL and PSC) for Clinically Significant Behavior Problems

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. (%) With Positive or Clinical Scores (n = 210)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL*</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27 (12.9)</td>
</tr>
<tr>
<td>Internalizing</td>
<td>42 (20.0)</td>
</tr>
<tr>
<td>Externalizing</td>
<td>18 (8.6)</td>
</tr>
<tr>
<td>PSC</td>
<td></td>
</tr>
<tr>
<td>Using established cutoff†</td>
<td>2 (0.95)</td>
</tr>
<tr>
<td>Using alternative cutoff‡</td>
<td>2 (0.95)</td>
</tr>
</tbody>
</table>

Abbreviations: CBCL, Child Behavior Checklist; PSC, Pediatric Symptom Checklist.

*The CBCL clinical score includes both borderline and clinical scores or a T score of 60 or higher.
†Established cutoff points31,34 are 24 or higher for children aged 4 to 5 and 28 or higher for children aged 6 to 16 years.
‡Alternative cutoff point for low–socioeconomic status minorities is 24 or higher for children aged 4 to 6 and 28 or higher for children aged 6 to 16 years."8

DESCRIPTIVE ANALYSIS

The range of scores with the mean and standard deviation for the PSC, CBCL Total, and CBCL Internalizing and Externalizing scales are presented in Table 2. Mean scores for the PSC, CBCL Total, as well as the CBCL Internalizing and Externalizing scales, were within the normal range for child behavioral problems. The PPAF scores also are provided in Table 2. When the data were examined for male and female children separately, we found no statistically significant differences in mean values of CBCL Total, CBCL Internalizing, CBCL Externalizing, PSC, or PPAF. The PSC scores were not significantly correlated with levels of maternal education (Kruskal-Wallis test, χ² = 6.74, P > .15) or level of family income (Kruskal-Wallis test, χ² = .02, P > .99). Therefore, all subsequent analyses treated the sample as a whole in regard to these variables.

Table 3 presents the positive scores for both the CBCL and the PSC. Using a cutoff score of 60 or higher, the CBCL Total scale determined that 13% of the children had borderline clinical or clinical levels of behavioral or psychosocial problems (with 20% and 9% on the Internalizing and Externalizing scales, respectively). The PSC screened 2 (1%) of the 210 children as positive. This conclusion results from using the cutoff points (≥24 for 4- to 5-year-olds, ≥28 for 6- to 16-year-olds) established by the authors of the PSC and published in several studies.31,34,39 If a lower cutoff point recently proposed by Simonian and Tarnowski40 for use in low-SES minorities is used (≥24 for both 4- to 5-year-olds and 6- to 16-year-olds), the results are the same (1%). This is because no child aged 6 to 16 years (n = 119) screened positive (either ≥24 or ≥28) on the PSC.

SENSITIVITY AND SPECIFICITY OF THE PSC

The CBCL previously has been used as a criterion standard in several studies that specifically evaluate the PSC.30,33,39,40 Thus, we also used the CBCL as a criterion standard and calculated the sensitivity and specificity of the PSC. When used in this population, the PSC had a sensitivity of 7.4% and specificity of 100%.

CONCURRENT VALIDITY OF THE PSC

Using the Spearman ρ correlations, we calculated the association between scores on the PSC to the PPAF, the CBCL Total, the CBCL Internalizing and Externalizing scales, and the specific CBCL syndrome subscale scores. We found a high correlation between the PSC and CBCL Total, Externalizing, and Internalizing scores (r = 0.71, 0.68, and 0.54, respectively, P < .01 for all). This held true for most of the CBCL syndrome subscale scores as well (r = 0.39-0.68, P < .01 for all, Table 4). The few exceptions were found for the 1½- to 5-year version of the CBCL, with no statistically significant correlations demonstrated between PSC scores and the Anxious/Depressed, Somatic Complaints, and Withdrawn subscale scores (r = 0.20, 0.20, and 0.15, respectively). The PSC scores also were significantly associated with PPAF scores (r = 0.25, P < .01). In addition, we found a correlation between the CBCL Total and PPAF scores (r = 0.33, P < .01). This correlation is similar to the PSC-PPAF correlation, underscoring the usefulness of the CBCL as a criterion standard.

ROC ANALYSIS

Our findings regarding the PSC (ie, low sensitivity and high specificity compared with the CBCL; high correlation with the CBCL) suggest that the PSC still could be an effective screener in this population, but the cutoff point might be too high. To evaluate this possibility and to determine if a
Table 4. Correlations Between PSC and Other Measures of Child Behavior Problems

<table>
<thead>
<tr>
<th>Scale</th>
<th>Correlation*</th>
<th>P Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSC score and PPAF score</td>
<td>0.253</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>PSC score and CBCL T scores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.712</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Internalizing</td>
<td>0.544</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Externalizing</td>
<td>0.681</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Syndrome scales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBCL 1½-5 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotionally reactive</td>
<td>0.511</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Anxious depressed</td>
<td>0.205</td>
<td>.13</td>
</tr>
<tr>
<td>Somatic complaints</td>
<td>0.195</td>
<td>.15</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>0.149</td>
<td>.27</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>0.525</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attention problems</td>
<td>0.395</td>
<td>.003</td>
</tr>
<tr>
<td>Aggressive behavior</td>
<td>0.436</td>
<td>.001</td>
</tr>
<tr>
<td>CBCL 4-16 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdrawn</td>
<td>0.492</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Somatic complaints</td>
<td>0.361</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Anxious or depressed</td>
<td>0.546</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Social problems</td>
<td>0.472</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Thought problems</td>
<td>0.485</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attention problems</td>
<td>0.631</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Delinquent behavior</td>
<td>0.428</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Aggressive behavior</td>
<td>0.683</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Abbreviations: CBCL, Child Behavior Checklist; PPAF, Physician Psychosocial Assessment Form; PSC, Pediatric Symptom Checklist.

*Two-tailed.

lower cutoff point could improve sensitivity while maintaining high specificity, we used ROC curves. Three ROC analyses, corresponding to the CBCL Total, Internalizing, and Externalizing scales, were undertaken using ROC4 software. These analyses computed the sensitivity and specificity of every value on the PSC to determine which value would optimally discriminate children with and without behavioral problems, as measured by the CBCL. Equal weighting was placed on sensitivity and specificity to obtain the most efficient PSC cut point. In addition to the PSC scores, child age, sex, and number of years living in the United States were entered into the analyses to explore whether these demographic variables also contributed to group differentiation.

Thirteen percent of the sample (n = 210) exhibited behavioral problems as measured by the CBCL Total scale. Of all variables entered into the analyses, including the PSC and demographic variables, the PSC at the cutoff point of 12 was the most efficient discriminator (χ² = 86.62, χ = 0.04, P < .001). Thus, of all possible values on the PSC, a cutoff of 12 most correctly classified children with and without behavioral problems (sensitivity, 0.74; specificity, 0.94; efficiency, 0.914). For children with a PSC score of 12 or higher, the proportion of value positive was 0.89 (n = 31). Within the subgroup of 31 children with PSC scores of 12 or higher, ROC indicated that age was an efficient classification variable at a cut point of 7 years or younger (χ² = 11.14, χ = 0.59, P < .001). For children older than 7 years, the proportion of value positive was 0.89 (n = 18). Child sex and number of years in the United States did not further discriminate the 2 groups (ie, PSC score <12, PSC score ≥12).

The purpose of this study was to establish the utility of the PSC for early identification of behavioral and psychosocial problems in a low-income, immigrant, Spanish-speaking population of children. Using established cutoff scores, the PSC identified 1% of these children as positive for behavioral problems. Meanwhile, the CBCL, given concurrently, determined that 13% of the children had scores in the borderline-clinical or clinical range. Using the CBCL as a criterion standard (as done in previous evaluations of the PSC), the PSC had a sensitivity of 7.4% and a specificity of 100% for behavioral and psychosocial problems in these low-income, predominately Mexican American children. ROC analyses suggested that an adjustment of the PSC cutoff score to 12 (down from 24 or 28, depending on age) yields increased sensitivity (74%) while preserving excellent specificity (94%) for effective screening for all ages in this specific population. With the adjusted cutoff score, 31 children (14.8%) would have screened positive on the PSC.

USE OF PSC IN HISPANIC POPULATIONS

A limited number of carefully validated studies of the PSC have been completed in Hispanic populations. On review of the literature, we found 3 studies that specifically addressed the use of the PSC in Hispanic children. Results of the first study were reported in 3 articles. Two articles reported on behavior problem rates as determined by the PSC in 2 age groups (4- to 5-year-olds and 6- to 16-year-olds) within a population of low-income, Spanish-speaking families in northern California. No measures of the validity of the PSC in these samples were reported. Notably, the authors remarked on the “substantially” lower...
rates of positive PSC scores in both age groups (7% in 4- to 5-year-olds; 10.6% in 6- to 16-year-olds) compared with previously reported rates of 22% in similarly low-income, black children. A third article addressed issues of validity and compared the PSC with an overall rating of child functioning. In that article, which represented 663 low-income, Hispanic, preschool-aged children, the PSC positive rate was reported to be 9%, the sensitivity of the PSC was 75%, and the specificity was 77%. Taking the 3 articles together, the lower rates of positive PSC scores and the lower sensitivity in these primarily Mexican American families are unlike reports of other minority groups.

In a second study conducted in a low-income, Boston, Mass, community, Navon and colleagues included a subsample of Spanish-speaking families. For the total sample, 23% of children younger than 6 years screened positive on the PSC, whereas 27% of the children aged 6 years and older screened positive. The PSC was validated in this population using clinical interviews with subsequent interviewer completion of the Child and Adolescent Functional Assessment Scale (CAFAS) for children at least 6 years old and the Preschool and Early Childhood Functional Assessment Scale (PECFAS) for children younger than 6 years. Using the CAFAS/PECFAS as a criterion standard, the PSC was found to have 91% sensitivity and 65% specificity for the total sample. Within the total sample, the lowest level of PSC accuracy was found for preschoolers in Spanish-speaking families, for whom the sensitivity and specificity were reported to be 75% and 53%, respectively. The percentage of Spanish-speaking families in the total sample is not reported in the article. Because of these results, the authors made changes in the Spanish translation of the questionnaire.

In a third study, the PSC was used in mixed-SES pediatric outpatients from a health maintenance organization in a northern California county. The authors found a PSC positive rate of 14% for Hispanic children (higher than 12% reported for whites and lower than 17% reported for blacks). The Hispanic families in this study were, presumably, not low income.

EFFECTS OF QUESTIONNAIRE LANGUAGE AND RESPONDENT CULTURE

Our current study and the 3 studies described herein suggest a great deal of variability in Hispanic samples with regard to the prevalence of positive PSC scores (range, 1%-23%), PSC sensitivity (range, 7.4%-75%), and PSC specificity (range, 53%-100%). Jellinek et al have pointed out the variability in prevalence of positive scores among different populations and specifically have remarked that underreporting by parents due to different native language or cultural expectations might contribute. Culturally, specific health perception could play a role in such findings. Rogler addressed this issue in his writings on pathological-clinical or clinical range on the CBCL).

If Mexican American, immigrant children have fewer behavioral problems, one intriguing explanation for the low prevalence of psychopathological conditions in this population is the idea of an epidemiological paradox, a term used to describe the unexpectedly good health outcomes in Hispanic mothers and children that seem to resist the usual association between poverty and poor health. Our findings of low rates of psychopathological conditions in a high-risk, low-SES, immigrant community give further credence to this idea of a paradox or the protective effect of Hispanic family, community, and culture in the behavioral development of their children.
One way to improve the primary care pediatrician’s ability to recognize and appropriately refer children with behavioral problems is to systematically screen all children with a standardized instrument designed for this purpose; the PSC is one such instrument. To date, however, there are few studies that examine the usefulness of the PSC in low-income Hispanic populations. This study of the PSC screener in a group of low-income, Mexican American children demonstrated that adjustments in the PSC cutoff score for significant levels of behavioral problems are indicated. The results also strengthen the evidence for expanded efforts to understand the possible protective effects, with regard to risk for psychosocial and behavioral difficulties, which may be conferred by Hispanic culture.

RELEVANCE AND NEXT STEPS

Several issues involving the use of the PSC in Hispanic patients have been raised. However, the PSC clearly is a tool that is much needed in the primary care office setting for which it is designed. We would argue that use of the PSC should be continued and that adjustments be made for its appropriate use in this population.

As a first step, we would recommend consideration of the new cutoff point determined by ROC curve analysis in our current study. This lowered cutoff score of 12 allows the current PSC to obtain a much higher sensitivity in this population while maintaining a high level of specificity. However, replication of our findings will be important, as our results are based on a single community health center. Further analysis to determine the causes of the PSC’s apparently low sensitivity in the Mexican American population also will be important. A large-scale analysis of PSC data collected in a Spanish-speaking population might reveal strengths and weaknesses in the current list of questions that are not suspected. This information also might guide a need for culturally sensitive rewording or addition of specific questions to increase the questionnaire’s overall sensitivity. Replication studies that use both structured psychiatric interviews and behavior checklists also would be useful, particularly if a strategy for administration can be developed that accounts for illiteracy in the participant population.

Improving the utility of the PSC in the Mexican American population is only part of the larger, more complicated issue of the evaluation of all children for behavioral and psychosocial problems. With increasing attention paid to the impact of language and culture, it becomes clear that the PSC, as well as other mental health questionnaires, must be carefully evaluated with other immigrant populations. This is obviously a daunting task that undoubtedly complicates every aspect of mental health evaluation. However, the better understanding of the wide variety of cultures also serves to enrich our understanding of human nature and potential for human development.

In addition, much work remains to be done within the Hispanic culture. As an increasingly important part of the fabric of our nation, it is imperative that we gain a more complete understanding of the effects of immigration, family, language, and culture on the functioning of Mexican American children who are in our care. Issues such as the epidemiological paradox, so well described with regard to Hispanic infant and perinatal health, may be just a hint of larger forces at work within immigrant families.

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