Brief Measures to Screen for Social Phobia in Primary Care Pediatrics

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Objective To evaluate the usefulness of screening measures to detect social phobia among youth in a primary care setting. Methods Families recruited from a pediatric primary care setting completed by mail the Social Anxiety Scale (SAS), the Social Worries Questionnaire (SWQ), and the social phobia subscale of the Screen for Child Related Anxiety Disorders (SCARED). Diagnoses were obtained from 190 parent interviews. Receiver operating characteristic (ROC) analyses were used to determine the utility of the measures as screening instruments. Results Most of the parent report measures, including the single item (“My child is shy”) from the SCARED, were at least moderately accurate screeners and performed best for the generalized subtype of social phobia. Conclusion The use of valid, brief screening instruments can significantly improve the feasibility of detecting social phobia among youth in primary care pediatric settings.

Key words anxiety; primary care; screening; social anxiety.

Children and adolescents with mental illness may be well served by screening for psychosocial problems in the pediatric primary healthcare setting. At present, detection rates of mental illness in pediatric primary care settings are low, ranging from 17 to 50% (Costello et al., 1988; Jellinek, 1999), and few children receive specialty services (Costello, 1986). Epidemiologic findings reveal that anxiety disorders are also remarkably common in this setting ranging from 1 to 10% (Briggs-Gowan, Horwitz, Schwab-Stone, Leventhal, & Leaf, 2000; Busch et al., 2002; Costello, 1989) but are mostly undetected and undertreated (Chavira, Stein, Bailey, & Stein, 2004; Wren, Scholle, Heo, & Comer, 2003). Social phobia in youth may be particularly under-recognized because its presentation may be regarded as mere shyness, or it may be misdiagnosed because of its symptom overlap with other anxiety disorders and depression (Bruce & Saeed, 1999).

The World Health Organization suggests that screening is well justified when a disorder poses a significant public health problem, has a recognizable early symptomatic stage, acceptable approaches to treatment, and suitable screening and diagnostic tests that are cost-effective (Derogatis & Lynn, 2000). These conditions appear to be satisfied in the case of social phobia. Rates of social phobia in youth range from .5–4.0% in community studies (Essau, Conradt, & Petermann, 1999; Wittchen, Nelson, & Lachner, 1998) and 3–6.8% in primary care settings (Busch et al., 2002; Chavira et al., 2004; Costello, 1989). The age of onset is usually in the early teens, and, typically, social phobia has a chronic and unremitting course without treatment (Davidson, Hughes, George, & Blazer, 1993). Most youth who present for treatment have the generalized subtype of the disorder (Beidel, Turner, & Morris, 1999), which is characterized by numerous social fears and is associated with a greater level of impairment than the nongeneralized form. Longitudinal studies with clinical and community samples suggest that social phobia during youth is associated with risk for later anxiety, major depression, substance abuse (Pine, Cohen, Gurley, Brook, & Ma, 1998; Stein, Fuetsch, Muller, Holler, Lieb, & Wittchen, 2001) as well as suicide attempts (Gould, 1998). Effective treatments, including pharmacotherapy (Birmaher...
et al., 2003; Research Unit on Pediatric Psychopharmacology (RUPP) Anxiety Study Group, 2001; Wagner et al., 2004) and psychotherapy (i.e., cognitive and behavior therapies) are available (Beidel, Turner, & Morris, 2000; Spence, Donovan, & Brechman-Toussaint, 2001).

Potential Screeners for Social Phobia in Youth

Numerous self-report and parent report questionnaires of child social anxiety exist. These include the Social Phobia and Anxiety Inventory for Children (SPAI–C; Beidel, Turner, & Morris, 1995), the Social Anxiety Scales (SAS) (i.e., Social Anxiety Scale for Children–Revised (SASC–R), the Social Anxiety Scale for Adolescents (SAS–A), and their corresponding parent versions (LaGreca, 1999)), and the Social Worries Questionnaire (SWQ; Spence, 1995). The SAS has been recommended over the SPAI–C as a screening tool because of its relative brevity (Epkins, 2002; Morris & Masia, 1998), an issue particularly relevant to the pediatric care setting. The SWQ may also represent a suitable alternative to the SPAI–C and SAS, though its psychometric properties have not been as extensively investigated.

There are also broader questionnaires that measure childhood emotional and behavioral symptoms where social anxiety is included as a subscale. One such example is the Screen for Child Anxiety-Related Disorders (SCARED; Birmaher et al., 1997, 1999), which has a 41-item version with a 7-item social phobia subscale as well as a 5-item version with only one item for social phobia. Findings from previous and current versions of the SCARED support its discriminative properties (Birmaher et al., 1997, 1999; Muris, Merckelback, Ollendick, King, & Bogie, 2002); however, receiver operating characteristic (ROC) analyses for the separate subscales that have not published. As summarized in Table I, existing data support the use of at least some of these measures as screeners, but the cutoff scores that yield the highest rates of clinical efficiency, maximizing sensitivity and specificity are undetermined.

Hypotheses of this Study

The principal hypothesis is that brief measures of social anxiety will be useful in detecting social phobia in a pediatric primary care setting. ROC analyses (Hanley & McNeil, 1982) will be used to determine “usefulness.” Specific indices from these analyses, including area under the curve (AUC), sensitivity, specificity, predictive values, and likelihood ratios (which, unlike predictive values, are not influenced by prevalence rates of disorders (Bennett, 2000)] will be examined. A screener that significantly discriminates youth with social phobia from youth without social phobia and has an AUC > .80 will be considered useful (Holmes, 1998). A secondary hypothesis is that the measures will perform best for the generalized form of social phobia because it is the most severe and disabling form of the disorder and its symptoms are more pervasive.

Method

Participants and Procedure

This study is part of a larger project where families with children between the ages of 8–17 were selected from among enrollees in a southern California university-affiliated pediatric primary care practice (Chavira et al., 2004). Questionnaires were mailed to 1,470 randomly selected families from the enrollment list of a pediatric primary care practice; this number was consonant with our financial resources to conduct the study. After 297 packets were returned as undeliverable or were from families outside of our age criteria, a resulting sample of 1,173 families received a questionnaire packet in the first phase. Of those families, 374 families with children (age 8–12) and 340 families with adolescents (age 13–17) returned the screening packets, resulting in a total evaluable sample of 714 families. Parent questionnaires in the first phase included the SASC–R/Parent or the SAS–A/Parent, the 7-item SCARED subscale, and the SWQ. Youth questionnaires in the first phase were the SASC–R or the SAS–A and the 7-item social phobia subscale of the SCARED.

Parents indicated whether they were willing to participate in a second phase of the study that included a telephone interview. All interested families (n = 359) were sent a second packet that included questionnaires and consent forms (i.e., parental consent and child or adolescent assent). Of these families, 99 parents of children and 91 parents of adolescents completed the questionnaires and the telephone diagnostic interview. Families received a $25 gift certificate to a bookstore for their participation in the second phase. The study was approved by the Human Research Protection Program at the University of California San Diego School of Medicine.

Assessments

Reliability and validity data for the screening instruments are presented in Table I.

Screening Instruments

The SAS assesses feelings of social anxiety in the context of peer relations. Each questionnaire consists of 18 statements
and 4 filler items. Factor analysis yields three distinct factors: Fear of Negative Evaluation (FNE); Social Avoidance and Distress–Specific to New Peers and New Situations (Sad–New) and General Social Avoidance and Distress (Sad–gen) (La Greca & Stone, 1993). Statements are answered on a 5-point Likert scale from 1, “not at all” to 5, “all the time.” Items from each of the three subscales, respectively, include: “I worry what other kids think of me,” “I get nervous when I meet new kids,” and “It’s hard for me to ask other kids to do things with me.” Total scores range from 18 to 90.

The SCARED was developed as a self-report and parent report screening tool to assess anxiety disorders in youth. The long (41-item) version of the SCARED has a social phobia subscale (SCARED/SP) with seven items, which was used in this study. For each item, severity of symptoms is rated using a 0- to 2-point scale, with 0, “not true or hardly ever true”; 1, “sometimes true”; and 2, “true or often true.” Sample items include: “My child feels nervous with people he doesn’t know well” and “My child is shy.” Scores range from 0 to 14. The single item, “My child is shy,” was also evaluated as a screener. This item was chosen because it is part of the SCARED’s 5-item version, which consists of items that loaded highest on each of the five factors in a discriminant function analysis of the longer version (Birmaher et al., 1999).

The SWQ assesses symptoms of social anxiety in youth ages 8–17. Specifically, each question asks the parent how much his or her child avoids or worries about particular social situations. Only the 10-item parent version of this questionnaire was completed. Items are answered on a 3-point scale: 0, “not true”; 1, “sometimes true”; and 2, “mostly true.” Sample items include: “My son or daughter avoids or worries about meeting new people” and “My son or daughter avoids or gets worried about standing up for him/herself with other kids.” Total scores range between 0 and 20 and 0 through 18.

### Telephone Diagnostic Interview

The Anxiety Disorders Interview Schedule for Children–Parent Version (ADIS–C/P; Silverman & Albano, 1996) is one of the most commonly used interviews for childhood anxiety disorders. It is based on DSM-IV criteria and allows for the assessment of anxiety, mood, and externalizing disorders in children between the ages of 6 and 18 years. For social phobia, all of the criteria for fear, anxiety, avoidance, interference with activities, and duration were required. At the end of each diagnostic module, the parent was asked to rate the level of interference caused by the specific disorder using a scale ranging from 0 to 8. An impairment rating of 4 or greater (e.g., 4, “some,” 6, “a lot,” and 8, “very very much”) was required for interference to be present. Although the ADIS–C/P does not provide an algorithm for distinguishing subtypes, a generalized social phobia diagnosis was considered when a child’s fear occurred in at least four situations, at least two of which were interactional (vs. performance).

The psychometric properties of the DSM-IV version of the ADIS have been studied (Silverman, Saavedra, & Pina, 2001). Test–retest kappas for the ADIS–C/P disorders

### Table I. Psychometric Properties of Potential Social Anxiety Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Author</th>
<th>Number of items</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Internal consistency</th>
<th>Test–retest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Phobia Anxiety Inventory for Children (SPAI–C)</td>
<td>Beidel et al. (1995)</td>
<td>26</td>
<td>63</td>
<td>71</td>
<td>.92–.95a</td>
<td>.86b</td>
</tr>
<tr>
<td>Social Anxiety Scale (SASC–R/SAS–A)</td>
<td>La Greca (1999)</td>
<td>22</td>
<td>44</td>
<td>71</td>
<td>.93b</td>
<td></td>
</tr>
<tr>
<td>Screen for Child Anxiety Related Emotional Disorders (SCARED)</td>
<td>Birmaher et al. (1997, 1999)</td>
<td>38 and 41 item versions</td>
<td>71</td>
<td>59</td>
<td>.74–.93</td>
<td>.70–.90</td>
</tr>
<tr>
<td>Social Worries Questionnaire (SWQ)</td>
<td>Spence (1995)</td>
<td>10</td>
<td>NA</td>
<td>NA</td>
<td>.84 NA</td>
<td></td>
</tr>
</tbody>
</table>

FNE, Social Anxiety Scale–fear of negative evaluation subscale; NA, not available; Sad–gen, Social Anxiety Scale–Social Avoidance and Distress in general situations; Sad–New, Social Anxiety Scale–Social Avoidance and Distress in new situations subscale.

are 0.88 for separation anxiety, 0.86 for social phobia, 0.65 for specific phobia, 0.72 for generalized anxiety disorder, and 1.00 for attention deficit hyperactivity disorder (ADHD). Test–retest reliability estimates for the anxiety symptom scales using intraclass correlation coefficients ranged from 0.81 to 0.96, indicating excellent reliability. The ADIS has also been validated against the Multidimensional Anxiety Scale for Children (Wood, Piacentini, Bergman, McCracken, & Barrios, 2002).

In this study, all telephone interviews were audio taped and reliability data were gathered on 42 interviews by having each of the two interviewers (a clinical psychologist and an advanced graduate student) rate the interview of the other. The interrater kappa coefficients were: specific phobia $\kappa = .77$, generalized anxiety disorder $\kappa = .90$, attention deficit hyperactivity disorder $\kappa = .93$, generalized social phobia $\kappa = 1.00$, nongeneralized social phobia $\kappa = 1.00$, and major depression $\kappa = 1.00$. Kappa coefficients were not obtained for the remaining disorders because the sample sizes were too small. Length of the interviews ranged from 45 min to 2 h.

Results

Responders Versus Nonresponders

Results are reported separately for children and adolescents given alternate forms of the screeners based on the child’s age. In the initial screening phase, there were no significant gender differences among children and adolescents who completed the screeners [\( \chi^2 (1, N = 586) = 1.98, p < .05 \); \( \chi^2 (1, N = 587) = 1.02, p < .05 \), respectively] and those who did not. Among children (i.e., age 8–12), there was no significant difference in age between those who completed the screeners and those who did not. Among adolescents (i.e., age 13–17), there was a small but statistically significant difference in age between those who completed the screeners and those who did not, \( F(1, 586) = 11.9, p < .01 \). Specifically, responders (\( M = 14.54 \) years old, \( SD = 1.27 \)) were younger than nonresponders (\( M = 14.92 \) years old, \( SD = 1.38 \)). Since the responders and nonresponders were similar on gender, and age differences, although significant, were very small, no adjustments were made in subsequent analyses. We also know that the families who responded (\( n = 714 \)) had mean social anxiety scores on the SAS that were similar to those reported in normative samples (La Greca & Lopez, 1998; La Greca & Stone, 1993). Specifically, in La Greca’s unselected school samples, the child mean score was 45.7 and the adolescent mean score was 39.1. The mean scores in our sample were \( M = 37.46 \) for children and \( M = 35.79 \) for adolescents. Scores were similar on the parent versions.

There were also no differences in child’s gender, education, level of education, child or parent reporting of child social anxiety or more general anxiety symptoms between the families who completed the second phase telephone interview (\( n = 190 \)) and those who did not (\( n = 524 \)) (Table II). Furthermore, the 190 families who participated in the second phase had children and adolescents with mean anxiety scores on the 41-item version of the SCARED (\( M = 16.08, SD = 11.11 \) and \( M = 15.76, SD = 10.46 \)), respectively, that were comparable to those from a normative sample of youth, age 12–18 (\( M = 16.1, SD = 12.6 \)) (Birmaher et al., 1997; Muris et al., 2002). These findings suggest that the anxiety scores of children in our final sample were comparable to those of community samples and that the social anxiety scores and demographic features were representative of the larger sample from which it was drawn.

Interviewed Sample

The mean age of the parents completing the questionnaire was 43.9 years (\( n = 190, SD = 6.0 \)) and the majority were college educated (75%) and Caucasian American (71%). The non-Caucasian parents were Latinos/Hispanic Americans (8%), African Americans (6%), Filipino/Asian Americans (7%), and individuals who identified as multicultural (9%). There were a similar number of boys (49%) and girls (51%); 53% of the child participants

| Table II. Demographic Variables and Social Anxiety Scores Among Responders and Nonresponders (\( N = 714 \)) |
|-------------------------------------------------|-------------------------------------------------|-----------------|-----------------|
| Gender                                          | Responders (\( n = 190 \)) | Nonresponders (\( n = 524 \)) | Statistical test | \( p \) Value |
| Boys                                            | 51%                           | 49%                          | \( \chi^2 = 0.08 \)  | .78            |
| Girls                                           | 49%                           | 51%                          | \( \chi^2 = 0.04 \)  | .84            |
| Education                                       |                                |                              | \( \chi^2 = 3.04 \)  | .08            |
| College                                         | 74%                           | 79%                          | \( \chi^2 = 0.00 \)  | .99            |
| No college                                      | 26%                           | 23%                          | \( \chi^2 = 1.59 \)  | .21            |
| Ethnicity                                       |                                |                              | \( \chi^2 = 0.48 \)  | .49            |
| Caucasian                                       | 66%                           | 73%                          | \( \chi^2 = 0.00 \)  | .99            |
| Not Caucasian                                   | 34%                           | 27%                          | \( \chi^2 = 0.00 \)  | .99            |
| SAS–Parent                                      | 40.02 (12.31)                 | 40.03 (11.51)                | \( F = 0.00 \)       | .99            |
| SCARED–Parent                                   | 1.44 (1.65)                   | 1.53 (1.67)                  | \( F = 0.48 \)       | .49            |
| SASC–R–Child                                    | 37.12 (12.36)                 | 35.98 (11.18)                | \( F = 1.59 \)       | .21            |
| SCARED–Child                                    | 1.64 (1.72)                   | 1.66 (1.65)                  | \( F = 0.02 \)       | .99            |

were between the ages of 8–12 and 47% were between the ages of 13–17 years. Nineteen children (19.2%) and 17 adolescents (18.7%) were diagnosed with social phobia, with varying levels of severity. Of these, 9 children and 12 adolescents were diagnosed with generalized social phobia.

Results from ROC Analyses

We initially examined the sensitivity (i.e., the likelihood of having positive results among individuals with a diagnosis) and specificity (i.e., the likelihood of having negative results among individuals without the diagnosis) of the measures. Tables III and IV summarize that (a) Cutoff scores were selected to provide the best balance between sensitivity and specificity for each measure (Tables III and IV). (b) The AUC, yielded by ROC analysis, incorporates both sensitivity and specificity to estimate the probability that a scale will correctly classify individuals (Hanley & McNeil, 1982; Kraemer, 1992). Values greater than .50 indicate better than chance classification and an AUC of .80 or higher suggests that the screener is useful (Holmes, 1998). (c) Overall accuracy calculated by adding the number of individuals who screen positive and have the disorder (i.e., true positives) with the number of individuals who screen negative and do not have the disorder (i.e., true negatives), divided by all possible cases.

Other indices of test usefulness (also included in Tables III and IV) include positive predictive value (PPV), negative predictive value (NPV), positive likelihood ratio (LR), and negative likelihood ratio (Hanley & McNeil, 1982). PPV is the probability that a patient who is screened has the disorder when his or her score on the screen is at or above the chosen cutoff. NPV is the probability the patient does not have the disorder when his score on the screen is below the chosen cutoff. A positive likelihood ratio is calculated by dividing the true positives (sensitivity) by the false positives (specificity). A negative likelihood ratio is calculated by dividing the false negatives (specificity) by the true negatives (specificity). Likelihood ratios are not affected by the prevalence of the disorder (unlike accuracy and predictive values) and therefore are an informative complementary measure of a scale’s usefulness outside of the immediate epidemiologic context in which it was evaluated.

Parent Measures for Children and Adolescents

As summarized in Tables III and IV, most of the parent measures had good discriminative properties and many had AUCs greater than .80. Of particular interest, the 1-item parent version of the SCARED “shy” question had an AUC greater than .80 and overall accuracy of 74% for identifying adolescents with generalized social phobia.

Comparison Among AUCs for Different Measures

Using a method presented by Hanley & McNeil (1983), we were able to examine whether the AUCs for specific scales were significantly different from each other. This approach utilized a critical $z$ ratio to assess whether the difference in the areas under two ROC curves derived

| Table III. Parent Screeners for Social Anxiety Disorder in Children: ROC Analyses |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| **Measure** | **Number of items** | **AUC (SE)** | **Cutoff** | **Sensitivity** | **Specificity** | **Overall accuracy** | **+PV** | **–PV** | **+LR** | **–LR** |
| SAS | 22 | 0.83 (0.05) | 42 | 0.79 (0.06) | 0.78 (0.06) | 0.66 (0.07) | 0.74 | 0.69 (0.03) | 0.75 | 35.7 (2.9) | 23.3 (3.4) | 2.33 (0.05) | 3.04 (0.03) | 0.32 (0.03) | 0.30 (0.03) |
| FNE | 8 | 0.73 (0.07) | 20 | 0.68 (0.07) | 0.67 (0.10) | 0.68 (0.07) | 0.74 | 0.68 (0.09) | 0.74 | 33.3 (2.6) | 20.7 (2.6) | 2.10 (0.07) | 2.61 (0.07) | 0.47 (0.07) | 0.45 (0.07) |
| Sad–New | 6 | 0.83 (0.05) | 17 | 0.68 (0.05) | 0.78 (0.10) | 0.78 (0.05) | 0.83 | 0.77 (0.07) | 0.83 | 43.7 (2.9) | 31.8 (2.9) | 2.90 (0.05) | 4.65 (0.05) | 0.41 (0.05) | 0.27 (0.05) |
| Sad–gen | 4 | 0.84 (0.06) | 8 | 0.79 (0.05) | 0.89 (0.07) | 0.76 (0.07) | 0.71 | 0.77 (0.05) | 0.73 | 44.1 (2.7) | 23.5 (2.7) | 3.32 (0.05) | 3.08 (0.05) | 0.28 (0.05) | 0.15 (0.05) |
| SWQ | 10 | 0.86 (0.05) | 5 | 0.79 (0.05) | 0.67 (0.08) | 0.74 (0.05) | 0.94 | 0.75 (0.06) | 0.92 | 41.6 (1.9) | 54.5 (1.9) | 2.90 (0.06) | 11.9 (0.06) | 0.28 (0.06) | 0.35 (0.06) |
| SCARED | 7 | 0.81 (0.05) | 5 | 0.74 (0.05) | 0.78 (0.06) | 0.73 (0.06) | 0.69 | 0.74 (0.06) | 0.69 | 40.0 (2.7) | 20.0 (2.7) | 2.7 (0.05) | 2.52 (0.05) | 0.37 (0.05) | 0.32 (0.05) |
| “Shy” | 1 | 0.72 (0.06) | 1 | 0.74 (0.07) | 0.78 (0.07) | 0.67 (0.07) | 0.63 | 0.69 (0.07) | 0.65 | 35.0 (1.7) | 17.5 (1.7) | 2.28 (0.07) | 2.11 (0.07) | 0.40 (0.07) | 0.35 (0.07) |

FNE, Social Anxiety Scale–fear of negative evaluation subscale; gsp, generalized social phobia; –LR, negative likelihood ratio; LR, positive likelihood ratio; –PV, negative predictive value; +PV, positive predictive value; Sad–gen, Social Anxiety Scale–Social Avoidance and Distress in general situations; Sad–New, Social Anxiety Scale–Social Avoidance and Distress in new situations subscale; SAS, Social Anxiety Scale total score; SCARED, SCARED social phobia subscale; shy, “My child is shy” from the SCARED. sp, social phobia; SWQ, Social Worries Questionnaire. All area under the curves (AUC) in bold are significant $p < .05$; SE, standard error.
The formula for this comparison was

\[ z = \frac{A_1 - A_2}{\sqrt{SE_1^2 + SE_2^2 - 2rSE_1SE_2}} \]

where \( A_1 \) and \( SE_1 \) are the AUC and the associated standard error for measure 1; \( A_2 \) and \( SE_2 \) are the observed AUC and standard error for measure 2; and \( r \) is the estimated correlation between \( A_1 \) and \( A_2 \) (for a full description, see Hanley & McNeil, 1983). Using normal distribution tables, and a \( p \) value of .05, \( z \) scores greater than or equal to 1.96 would be considered significant, implying that the ROC areas were different. Using this formula, we conducted comparisons that included the minimum and maximum AUCs for the social anxiety scales that had an AUC of at least .80. None of the AUCs significantly differed from one another. Of particular interest, the 1-item shy AUC (.82) was not significantly different from the 7-item SCARED AUC (.89), \( z = 1.30 \).

### Child and Adolescent Measures

None of the child or adolescent self-report measures had an AUC greater than .80, an indicator of usefulness (Holmes, 1998), and therefore other indices for the measures were not assessed.

### Discriminant Validity

To demonstrate that these screeners had utility specific to social phobia and not general psychiatric problems, ROC analyses were performed with ADHD as the target group. As expected, none of the AUC estimates identified useful screeners when children and adolescents with ADHD were considered as the target group (Table V).

### Discussion

Pediatricians have the primary obligation to detect mental health problems in youth in our current health care system. They tend to be the first professionals that parents confide in regarding their children's behavior and development (Evers-Szostak, 2000). Most children, particularly those children between 7 and 11 years of age, visit a pediatric clinic at least once a year (Costello et al., 1988). But time constraints, combined with parents' reluctance to raise psychosocial concerns, decrease the ability to identify problems (Costello, 1986; Stancin & Palermo, 1997). The use of brief screening questions increases discussion between health care providers and parents about children's emotional issues (Applegate, Kelley, Applegate, Jayasinghe, & Venters, 2003) and may substantially facilitate detection.

This study demonstrates that the SAS, the Sad–New, the SWQ, and the 7-item SCARED subscale, when administered to parents, are all useful (AUC > .80) screeners for social phobia among children and adolescents in a pediatric primary care sample. As predicted, findings also suggest that these screeners are most accurate when detecting the generalized form of social phobia. Furthermore,
the 1-item SCARED was useful for identifying generalized social phobia in adolescents (but not younger children) and the AUC for this item was not significantly different from that of the longer instruments. It may be that a question about “shyness” becomes more salient during adolescence, given that shyness during childhood may be perceived as more common and developmentally appropriate.

The accuracy of the screeners in this study varied depending on the person providing the information (i.e., parent or child/adolescent). Research shows that when parents and children are independently assessed, reports are frequently discrepant (Silverman & Eisen, 1992; Verhulst, van der Ende, Ferdin, & Kasius, 1997). Still, Grills & Ollendick (2003) found that when consensus diagnoses were derived from clinical team conferences using a variety of assessments from parent, child, teachers, and medical staff, parent agreement with the consensus was higher than that for children. Also, the use of parent report for social phobia is important given findings that socially anxious children report fewer symptoms and less distress than their parents regarding their behavior (Beidel & Turner, 1998). This is likely due to the salience of self-presentation concerns that are an inherent part of social phobia and may make children/adolescent less than reliable reporters of this condition (DiBartolo, Albano, Barlow, & Heimberg, 1998). Nevertheless, it is possible that ROC estimates for child self-report would have been better had child interviews been included as the criterion measure.

Ideal cutoff scores will vary depending on the purpose of the screen. For example, if it were imperative that we identify all individuals with a social phobia diagnosis, then a cutoff with high sensitivity would be necessary. On the other hand, if we wanted to minimize the presence of false positives and missing some individuals with social phobia would be acceptable, then a cutoff score with high specificity would be ideal. In this context, in the primary care setting, we sought to strike a balance between these indices, given that that the main goal at this stage would be identifying those deserving additional assessment rather than screening out all those individuals who definitely did not have social phobia.

**Clinical Implications for Pediatric Primary Care**

Our results suggest that pediatricians could use very brief screening inventories to detect youth with social phobia. In fact, the single parent-reported item “My child is shy,” may be sufficient to signal the need for further assessment. If a child scores above recommended cutoffs on a given scale, a second stage screening package could be sent home and would include parent, teacher, and child questionnaires. Parallel strategies are already being implemented for children with ADHD (Leslie, Wackerly, Plemmons, Landsverk, & Eastman, 2004). Social phobia, although not as obviously disruptive as externalizing disorders, is nonetheless associated with significant short- and long-term impairment and warrants efforts to improve identification. Rather than assessing for all childhood disorders, primary care settings may be advised to attempt to identify those disorders that are relatively common, particularly problematic, and associated with long-term sequelae and costs (e.g., ADHD; social anxiety disorder). Selecting very brief measures to screen for these disorders would enhance one of the barriers to their implementation.

**Limitations**

The presence of informant variance is a limitation of this study. As previously mentioned, child measures were not useful in detecting social phobia possibly because parent report was the criterion measure. This limitation may have overestimated the accuracy of parent screeners.

<table>
<thead>
<tr>
<th>Anxiety scale</th>
<th>Parent report on children (n = 17)</th>
<th>Parent report on adolescents (n = 12)</th>
<th>Child report (n = 17)</th>
<th>Adolescent-report (n = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS</td>
<td>0.50</td>
<td>0.52</td>
<td>0.69</td>
<td>0.41</td>
</tr>
<tr>
<td>FNE</td>
<td>0.58</td>
<td>0.58</td>
<td>0.52</td>
<td>0.41</td>
</tr>
<tr>
<td>Sad–New</td>
<td>0.43</td>
<td>0.59</td>
<td>0.64</td>
<td>0.51</td>
</tr>
<tr>
<td>Sad–gen</td>
<td>0.46</td>
<td>0.41</td>
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<td>0.37</td>
</tr>
<tr>
<td>SWQ</td>
<td>0.53</td>
<td>0.58</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>SCARED</td>
<td>0.37</td>
<td>0.44</td>
<td>0.59</td>
<td>0.50</td>
</tr>
<tr>
<td>“Shy”</td>
<td>0.34</td>
<td>0.50</td>
<td>0.50</td>
<td>0.44</td>
</tr>
</tbody>
</table>

FNE, Social Anxiety Scale–fear of negative evaluation subscale; NA, not applicable (measure was not given to children or adolescents); Sad–gen, Social Anxiety Scale–Social Avoidance and Distress in general situations; Sad–New, Social Anxiety Scale–Social Avoidance and Distress in new situations subscale; SAS, Social Anxiety Scale total score; SCARED, SCARED social phobia subscale; shy, “My child is shy” from the SCARED; sp, social phobia; SWQ, Social Worries Questionnaire.
relative to child screeners. Future research using multiple informants and different settings (e.g., school) is needed. Although we drew randomly from a complete roster of primary care pediatric patients and were able to demonstrate that responders and nonresponders were not dissimilar on a number of attributes, the external validity (i.e., generalizability) of this study to other practice settings and patient populations is nonetheless uncertain.

Conclusions

The identification of useful screeners for social phobia in youth will guide both researchers and pediatricians in detecting those with the disorder. This study provides data supporting the discriminative validity of several existing social anxiety scales as potential screeners. Since there are effective treatment options currently available, efforts to improve early detection within the primary care setting and treatment implementation when necessary should be strongly considered.

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References


