

A New Inventory to Assess Childhood Social Anxiety and Phobia: The Social Phobia and Anxiety Inventory for Children

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The development, reliability, and validity of a new instrument, the Social Phobia and Anxiety Inventory for Children (SPAI-C), is described. The results indicate that the SPAI-C has high test-retest reliability and internal consistency. In addition, an assessment of concurrent and external validity indicates statistically significant correlations with commonly used self-report measures of general anxiety and fears and parental reports of children's anxiety and social competence. The results of a factor analysis indicate that the scale consists of three factors: Assertiveness/General Conversation, Traditional Social Encounters, and Public Performance. Finally, scores on the SPAI-C successfully differentiate socially anxious and non-socially-anxious children. The instrument appears to be a reliable and valid measure for childhood social anxiety and fear and may prove useful for improving clinical assessment and documenting treatment outcome.

Social phobia is a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others (American Psychiatric Association, 1994). Among children, epidemiological data suggest that the prevalence rate is between 1% and 2% (Anderson, Williams, McGee, & Silva, 1987; Kashani & Orvaschel, 1990). On the basis of adult retrospective reports, the average age of onset is midadolescence. Among child and adolescent samples, Strauss and Last (1993) reported a mean age of onset of 12.3 years, and children as young as 8 years of age have been diagnosed with this disorder (Beidel & Turner, 1988). Therefore, although some individuals will not develop social phobia until midadolescence or later, many younger children suffer from the condition.

During the past decade, understanding of the clinical manifestations of social phobia in adult populations has increased dramatically. However, empirical data on the course and treatment of social phobia in children are limited. In one of the few extant studies, Beidel (1991) reported that children with social phobia had higher trait anxiety scores, had significantly poorer perceptions of their cognitive and academic abilities, and reported significantly more anxiety when taking an age-appropriate vocabulary test or reading aloud in front of a small audience. In addition to its clinical correlates, the detrimental effects of childhood social phobia are beginning to emerge. For example, some "school refusers" do so because of social fears (Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991). Clark (1993) re-

ported that a substantial percentage of adolescents who abuse alcohol meet criteria for social phobia, and Davidson (1993) found that onset of social phobia prior to age 11 years was predictive of a chronic disorder in adulthood. Thus, evidence is accumulating that social phobia in children is associated with significant negative behaviors.

Despite the emerging interest, there has been a paucity of methodologically sound investigations, and many basic research questions remain. One limitation is that the several well-known instruments that assess anxiety and fears in young children assess general levels of anxiety rather than a specific anxiety disorder. For example, the Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1978) assesses general anxiety and arousal. The State-Trait Anxiety Inventory for Children (STAIC; Spielberger, 1973) consists of two subscales. The State Anxiety subscale assesses the child's general distress at the time the inventory is completed. The Trait Anxiety subscale measures anxiety proneness or the child's tendency to respond to a variety of stressful events in an anxious fashion. In contrast to the assessment of general anxiety, the Fear Survey Schedule for Children—Revised (FSSC-R; Ollendick, 1983) measures distress when encountering 80 different situations. However, only five items on the FSSC-R assess distress in social settings. In summary, although these three instruments may reflect accurately the child's general distress or specific fears, they provide little to no information about distress in social encounters.

The only instrument that appears to measure social fears in children is the Social Anxiety Scale for Children—Revised (SASC-R; LaGreca & Stone, 1993). The SASC-R assesses social avoidance, social distress, and fear of negative evaluation. The scale was adapted from the adult versions of the Social Avoidance and Distress Scale and the Fear of Negative Evaluation Scale (Watson & Friend, 1969). However, neither the SASC-R nor its adult counterparts were developed to assess the specific construct of social phobia. To date, there are few data assessing the performance on the SASC-R of socially phobic

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This research was supported in part by National Institute of Mental Health Grant 43252.

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children diagnosed according to the *Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV; American Psychiatric Association [APA], 1994)* or *Diagnostic and Statistical Manual of Mental Disorders—Third Edition—Revised (DSM-III-R; APA, 1987)*. Furthermore, psychometric studies on the adult version of the SASC-R reveal that, despite the name, the instruments assess only general negative distress (Turner, McCanna, & Beidel, 1987). It is unclear whether the SASC-R has the same limitation.

In summary, childhood social phobia is a significant problem in need of further investigation. As noted, one impediment to conducting further extensive investigations of psychopathology and treatment outcome has been the absence of a reliable and valid self-report inventory developed specifically to assess social phobia and social anxiety in children and adolescents. Although the SASC-R may assess social anxiety, it was not developed as a specific measure of social phobia and thus does not assess the range of situations known to be distressful to social phobics. This article describes the development and initial psychometric characteristics of an empirically derived self-report measure of child social phobia and anxiety: the Social Phobia and Anxiety Inventory for Children (SPAI-C).

Study 1: Development of the SPAI-C

Method

Participants. Construction of the SPAI-C was based on the behavioral-analytic model outlined by Goldfried and D'Zurilla (1969). That is, items were generated empirically and subjected to a two-stage construction strategy. The initial item pool was generated on the basis of data obtained from three different sources. First, information obtained from clinical and structured interviews with 20 socially phobic children was reviewed to identify characteristics of the syndrome as expressed by young children. The mean age of the sample of 20 socially phobic children was 10.6 years. The sample was 40% male and 60% female. Sixty percent of the sample was European American and 40% was African American. These 20 children and their mothers were part of a larger study examining test anxiety and *DSM-III-R* anxiety disorders (Beidel & Turner, 1994) and participated in a structured diagnostic interview (the Anxiety Disorders Interview Schedule for Children; Silverman & Nelles, 1988). Interrater agreement (based on a review of the audiotaped interview by a second clinician unaware of the first clinician's diagnosis) was $k = 0.86$. The interview schedules were reviewed by Deborah C. Beidel and Samuel M. Turner, and items were generated on the basis of the children's positive responses to the questions included in the social phobia and avoidant disorder of childhood sections. As a second source of item generation, the daily diaries of these 20 socially phobic children were also reviewed. The daily diary (Beidel, Neal, & Lederer, 1991) presents the children with a list of potentially anxiety-producing situations. In addition, there is a space for the children to fill in any items that are not on the preprinted list. Deborah C. Beidel reviewed the daily diary responses of these 20 socially phobic children and wrote items that reflected the content of the diaries. As a third strategy, items found in the adult version of the instrument, the Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989), were reviewed. Items listed on the adult inventory that had not been generated by either of the first two methods were included if they were considered developmentally appropriate (e.g., the item on the adult version *I feel anxious when typing in front of others* was not considered appropriate for young children). The initial item pool was reviewed again to ensure that attention was given to the physical, cognitive, and

behavioral components of social phobia and that the range of situations that are stressful for socially phobic children were addressed. Because so little work has been conducted on the phenomenology of social phobia in children, there was no attempt to group the initial items within conceptually based factors.

Procedure. After the initial item pool was generated, it was reviewed by six individuals with expertise in childhood anxiety disorders who suggested minor wording changes. The initial version of the instrument contained 32 items. Eighteen of these items called for multiple responses. For example, some items asked the children to differentiate the extent of their distress on the basis of their familiarity with the other individuals in the social encounter (i.e., *boys and girls I know; boys and girls I don't know; adults*). These multiple responses were developed because the *DSM-IV* criteria for childhood social phobia specifies that the distress must occur with peers, not just adults. Furthermore, because individuals with social phobia often report differential distress with familiar people in comparison with unfamiliar people, peer ratings were divided into two categories. Each statement was rated on the following 3-point scale: 0 = *never or hardly ever*, 1 = *sometimes*, and 2 = *almost always or always*.

Study 2: Item Reduction Phase

Method

Participants. Children with a *DSM-III-R* diagnosis of social phobia ($n = 18$), overanxious disorder ($n = 14$), social phobia and overanxious disorder ($n = 4$), and avoidant disorder of childhood ($n = 1$) and those whose normal control status was confirmed by the structured interview ($n = 33$) completed the initial version of the SPAI-C. The children with social phobia who participated in this study were different from those who constituted the initial item generation pool. Because these three anxiety disorders (social phobia, overanxious disorder, and avoidant disorder) contain criteria that are social-evaluative in nature (Beidel, 1991; Werry, 1991), children diagnosed with social phobia, overanxious disorder, or avoidant disorder were grouped together under the term *socially anxious* ($n = 37$) for the purposes of this investigation. Such a classification is consistent with the *DSM-IV* revision of these diagnostic categories (see Discussion). Diagnostic and interrater reliability interviews were conducted in a fashion identical to that described in Study 1. Interrater reliability (κ) for diagnostic classification was .87 for social phobia and .83 for overanxious disorder. Avoidant disorder of childhood was diagnosed too infrequently to permit interrater reliability calculation. The mean age of the socially anxious sample was 11.5 years (range = 8–17 years). The sample was 51% female and 49% male. Seventy-three percent of the children were European American, 16% were African American, and 10% were classified as other. The normal control sample had a mean age of 10.1 years (range = 8–15 years) and was 67% male and 33% female. Seventy-nine percent of the sample was European American, 12% was African American, and 9% was classified as other.

Procedure. Each child completed the SPAI-C within 2 weeks of the diagnostic interview. The initial data-analytic strategy consisted of an analysis to identify those individual items that successfully differentiated socially anxious children from normal controls. Using an a priori decision rule, scores on the item had to be significantly different ($p < .05$) between socially anxious and normal control children for the item to be retained in the final version of the inventory.

Results

Hotellings T^2 was used to examine the socially anxious and normal control children's scores on the individual SPAI-C items as well as the total score ($M = 22.5$ vs. $M = 11.4$). Although

there was an overall significant difference in total score ($p < .001$), there were no significant differences between the two groups on 6 of the 32 items. Because these 6 items failed to differentiate socially anxious children from normal controls ($p > .05$), they were deleted from the final version of the inventory. Results reported in the remainder of this article are based on the 26-item (final) version of the SPAI-C.

Results: Scoring the SPAI-C

Although an examination of distress across different populations may have clinical utility, the primary purpose of the inventory is to assess average distress across a range of situations. Therefore, the 18 items requiring multiple responses are addressed first. Scores for the three ratings (*familiar peers, unfamiliar peers, adults*) are summed, and a mean rating is calculated for each item. The SPAI-C Total Score is then calculated by summing each of the 26 items. The maximum score on the SPAI-C is 52.

Study 3: Replication Sample

Method

To confirm the ability of the SPAI-C to differentiate socially anxious children from normal controls, a different sample of socially anxious and normal control children ($n = 15$ and 25 , respectively) completed the SPAI-C (replication sample). All children in this sample were recruited from ongoing research studies at the Anxiety Prevention and Treatment Research Center in Charleston. The sample was 58% male and 42% female, with an average age of 10.25 years (range = 8–13 years). The sample was 60% European American and 40% African American. There were no significant differences in demographic data between the two groups. Diagnostic procedures were identical to those in Study 1.

Results

A t test comparing the socially anxious and normal groups indicated a significant difference in total score, $M = 21.8$, $SD = 8.4$ vs. $M = 13.74$, $SD = 8.5$; $t = 2.92$, $p < .005$, thereby replicating the findings from the first sample.

Study 4: Initial Normative Data

Method

To provide some initial normative data for the SPAI-C, participants from Studies 2 and 3 were combined to create a larger sample. Thus, there were 52 socially anxious and 48 normal control children in this initial normative sample.

Results

Among the normal control group, 47% had SPAI-C scores of less than 10, whereas only 24% scored above 20. In contrast, only 8% of children in the socially anxious group had scores less than 10, and 50% had scores higher than 20. Table 1 provides data regarding the ability of various scores to identify children with significant social anxiety. Specifically, if a cutoff score of 18 was chosen to identify these children, only 37% of socially phobic children would be incorrectly classified as normal controls

Table 1
SPAI-C Cutoff Scores and Identification of
Socially Anxious Children

SPAI-C cutoff score	False negatives (%)	False positives (%)
10	5	40
13	16	39
15	22	36
18	30	26
20	46	21
23	57	12
25	68	6
29	84	0

Note. SPAI-C = Social Phobia and Anxiety Inventory for Children.

(false negatives). Alternatively, using the cutoff score of 18, 29% of normal controls would be incorrectly identified as socially anxious (false positives). As depicted in Table 1, by increasing the cutoff score, the percentage of false negatives increases while the percentage of false positives decreases. Various cutoff scores may be selected depending on whether the primary purpose is to identify children who might meet criteria for social phobia or to exclude those who are unlikely to have the disorder.

Study 5: Reliability, Internal Consistency, and Concurrent Validity

Method

Participants. The sample included 154 children who were participants in ongoing investigations in Pittsburgh or Charleston. The sample ranged in age from 8 to 17 years ($M = 11.5$); 53% were female and 47% were male; 83% were European American, 14% were African American, 2% were Asian American, and 1% were Native American. One hundred and twenty-two of these 154 children (including the 70 children who participated in Study 2) were interviewed as described in Studies 1 and 2. Diagnostic categories were as follows: social phobia ($n = 18$), avoidant disorder ($n = 1$), overanxious disorder ($n = 14$), social phobia and overanxious disorder ($n = 4$), simple phobia ($n = 12$), separation anxiety ($n = 7$), obsessive-compulsive disorder ($n = 2$), panic disorder ($n = 1$), overanxious and separation anxiety ($n = 2$), subthreshold social phobia ($n = 4$), subthreshold overanxious disorder ($n = 1$), mixed-affective and anxiety disorder ($n = 16$), schizophrenia ($n = 1$), dysthymia ($n = 1$), oppositional defiant disorder/attention deficit hyperactivity disorder (ADHD; $n = 4$), and normal (no diagnosis; $n = 33$). The remaining 32 children had been previous participants in a study of test anxiety. They were invited to participate in the current study and completed the SPAI-C by mail. Thus, diagnostic status was unavailable for these children. However, because a correlational strategy was to be used, all children who completed the particular instruments, irrespective of diagnostic status, were included in the analyses.

Measures. The STAIC and the FSSC-R were completed by the children. As noted in the introduction, the STAIC assesses state and trait anxiety. State anxiety refers to the child's general level of arousal when the inventory is completed. The Trait subscale assesses anxiety proneness (i.e., the tendency to respond to the stressful events in an anxious fashion). Both the State and the Trait subscales assess general, not social, anxiety. On the basis of prior research documenting a relationship between social fears and general anxiety (Beidel, 1991), it was expected that the SPAI-C would be correlated moderately with the STAIC Trait subscale but not the State subscale. The FSSC-R assesses a broad range

Table 2
Factor Analysis

Item content	Factor loading
Factor 1—Assertiveness/General Conversation (48%)	
—something said that is wrong or bad	.47
—an embarrassing situation	.72
—asked to do something that I don't want to do	.72
—ignored or made fun of by others	.71
—someone starts arguing	.68
—I start to talk to someone	.68
—when with others, I think "scary" thoughts	.59
—before going places, I think about what might go wrong	.53
—ask questions in class	.52
—school cafeteria	.51
—I have to talk for longer than a few minutes	.51
—avoid social situations	.48
—become the center of attention	.47
Factor 2—Traditional Social Encounters (6%)	
—in a social situation, I feel (somatic symptoms)	.79
—before going someplace, I feel (somatic symptoms)	.77
—parties, dances, school or any interaction and go home early	.71
—leave social situations	.63
—avoid social situations (parties, school, playing with others)	.56
—school play, choir, music or dance recital	.53
—before going someplace, I think about what might go wrong	.52
—when with others, I think "scary" thoughts	.50
—school cafeteria	.48
Factor 3—Public Performance Factor (5%)	
—speaking or reading aloud in front of a group	.75
—speaking in front of the class	.70
—others watch me do something	.69
—answering questions in class	.60
—in a school play, choir, music or dance recital	.55
—with others and become the center of attention	.48
—joining a large group	.47

Note. The entire factor loading table is available on request from Deborah C. Beidel.

of situations that children may find anxiety producing. One of the factor scales is Fear of Failure and Criticism. Although only some of the items in this scale actually reflect the factor's title, it was hypothesized that SPAI-C scores would be correlated more highly with this factor than with the other factors included in the FSSC-R, but that all of the correlations would be of moderate strength.

Mothers completed the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). The CBCL is one of the most widely used parental assessments of child psychopathology. The instrument has two broad-band scales. The Internalizing scale consists of anxious and depressed behaviors, whereas the Externalizing scale consists of "acting-out behaviors" such as ADHD, oppositional behavior, and conduct disorders. In addition, there is a Social Competence scale that provides an assessment of the child's involvement in social activities. It was hypothesized that the SPAI-C would be moderately correlated with the Internalizing and Social Competence scales, but not the Externalizing scale.

Because children were participants in other investigations, not all of the children (or mothers) completed all of the inventories. The specific sample size for each inventory is given below.

Results

Reliability of the SPAI-C. As a measure of internal consistency, Cronbach's alpha was calculated using all 154 partici-

pants who completed an SPAI-C. The resulting alpha coefficient was .95. Two weeks after the initial assessment, the SPAI-C was readministered to 62 of the 154 children. This subsample was not significantly different from the larger sample of 154 children on any demographic variable, including ratio of children with a diagnosis to normal controls included in the subsample. Using the Pearson product-moment correlation, the 2-week test-retest reliability coefficient was $r = .86, p < .001$. Finally, 19 children (not different from the sample as a whole) completed the SPAI-C on a third occasion, 10 months following the initial assessment. The resultant coefficient was $r = .63, p < .01$.

Concurrent validity. Thirty-eight children, not different from the reliability sample of 154 children in terms of demographic characteristics ($ps > .05$), completed the STAIC as well as the SPAI-C. The results indicated a significant relationship between the SPAI-C and the STAIC Trait, $r = .50, p < .001$, but not the STAIC State, $r = .13, p > .05$, subscale.

Fifty-nine children completed the SPAI-C and the FSSC-R and, again, the subsample was not different from the entire sample on any demographic characteristic ($ps > .05$). As predicted, the SPAI-C was correlated significantly with each of the five subscales of the FSSC-R, but differences among the coefficients

were not significant. The SPAI-C was moderately correlated with the Failure and Criticism subscale, $r = .53$, $p < .001$. This was expected because social phobia is characterized by fear of negative evaluation, which in turn is reflected by some items on this subscale. However, correlations between the SPAI-C and the other FSSC-R subscales (Fear of the Unknown, $r = .45$; Fear of Injury and Small Animals, $r = .45$; Fear of Danger and Death, $r = .43$; and Medical Fears, $r = .41$; all $ps < .001$) were also of moderate strength.

Scores on the SPAI-C also were correlated with parental perceptions of fears and social competence using a subsample of 74 children whose mothers completed a CBCL. Again, demographic characteristics were not different from the entire sample of 154 children. The SPAI-C score was correlated significantly with the CBCL Internalizing scale, $r = .45$, $p < .001$, but not the Externalizing scale, $r = .18$, $p > .05$. In addition, a significant inverse relationship was found between the SPAI-C and the CBCL Social Competence scale, $r = -.33$, $p < .01$, indicating that as social anxiety increases, participation in social activities decreases.

Study 6: Factor Analysis

Method

The sample consisted of all 154 children who participated in Study 5. A principal-components factor analysis of the SPAI-C items with a varimax rotation was computed.

Results

Using a best-fit solution, the factor analysis identified three factors with eigenvalues greater than one, which together accounted for 60% of the variance (see Table 2). Individual items with factor loadings of .45 or greater were retained for inclusion in each factor. The items and their specific factor loadings are listed in Table 2. Six items loaded on two factors with similar factor loadings. The first factor, Assertiveness/General Conversation, accounted for 48% of the variance. The majority of items that loaded on this factor consisted of those requiring negative assertion and general conversational skill. The second factor, Traditional Social Encounters, accounted for 6% of the variance and included fears of particular situations such as parties, dances, and scout meetings, among others. In addition, items assessing avoidance or escape from social encounters were among those with the highest factor loadings. The final factor, Public Performance, includes those performance situations such as public speaking, reading aloud in front of the class, and performing in recitals and accounted for 5% of the variance. Factor scores for the socially anxious sample ($n = 33$) and the normal control sample ($n = 37$) as well as for the entire sample ($N = 154$) are presented in Table 3.

As depicted, factor scores for the socially anxious and normal control groups were significantly different on all three factors: Factor 1, $t(69) = 5.13$, $p < .001$; Factor 2, $t(69) = 4.65$, $p < .001$; Factor 3, $t(69) = 5.64$, $p < .001$. In addition, the test-retest reliability for the factor scores was assessed using the sample of 62 children who completed the SPAI-C on two occasions during a 2-week interval. The reliability coefficients were as fol-

Table 3
Factor Scores for the Total Sample, the Socially Anxious Group, and the Normal Control Group

Score	Total sample		SA group		Normal group	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Factor 1	8.72	5.28	11.16	3.59	5.83	4.46
Factor 2	5.09	3.59	6.96	3.44	3.38	3.05
Factor 3	5.66	3.16	7.33	2.76	3.72	2.63

Note. Socially anxious and normal groups differ significantly on all factor scores (all $ps < .001$). SA = socially anxious.

lows: Factor 1, $r = .72$; Factor 2, $r = .91$; Factor 3, $r = .73$, all $ps < .001$.

Discussion

This article describes the development and initial psychometric characteristics of a new instrument designed to assess social phobia and anxiety in children. The SPAI-C has excellent internal consistency and high test-retest reliability across 2-week and 10-month intervals. The latter two coefficients suggest that the scale is reliable even for children as young as 8 years of age.

The expected pattern of moderate correlations between the SPAI-C and other well-known measures of general anxiety, fears, and social competence provides initial support for the validity of the inventory. First, the moderate correlation between the SPAI-C and the Trait subscale of the STAIC is consistent with the established relationship between social phobia (in children and adults) and more general anxiety complaints. Specifically, 33% of adults and 59% of children with social phobia also have comorbid generalized anxiety disorder (Turner, Beidel, Borden, Stanley, & Jacob, 1991) or overanxious disorder (Francis et al., 1992), suggesting a substantial but imperfect overlap among these conditions. Therefore, the correlation between these two instruments reflects the current clinical relationship among these diagnostic conditions but suggests that these instruments are not assessing the same construct.

The FSSC-R often is used as a validity criterion for the development of new anxiety instruments for children. In this particular study, there was a moderate correlation between the SPAI-C and the FSSC-R Fear of Failure and Criticism factor score. This correlation is consistent with the correlation found between this factor scale and the adult version of the SPAI-C, the SPAI, when the latter was administered to a sample of adolescents (Clark et al., 1994). Despite what might appear to be a substantial overlap in the constructs assessed by these scales, one reason that the magnitude of the correlation is not larger can be found by examining the particular items included in the Fear of Failure and Criticism subscale. As noted by Clark et al. (1994), although 5 items on the factor scale describe social situations, 13 items appear to have little or no relationship to social phobia (e.g., *having to eat foods I don't like* and *having my parents argue*). Given the particular structure of this FSSC-R factor scale, it is unlikely that the correlation with the SPAI-C could have been of a higher magnitude.

Consistent with this limitation, the magnitude of the correla-

tion between the SPAI-C and the Fear of Failure and Criticism subscale was only slightly higher than the correlations between the SPAI-C and all of the other FSSC-R factor scales, and not significantly so. Similarly, the FSSC-R factor scores were unable to differentiate among children with separation anxiety disorder, overanxious disorder, and simple phobias (Last, Francis, & Strauss, 1989). One interpretation for the lack of such differentiation is that the FSSC-R was not developed specifically to assess *DSM-III-R* or *DSM-IV* conditions. However, a second interpretation is that children's fears may not be as distinct or clear-cut as the diagnostic conditions imply (Beidel, 1991; Francis et al., 1992; Werry, 1991). Thus, given the substantial overlap among disorders and reported fears, the correlational pattern of results found in this investigation is not surprising.

As a measure of external validity, scores on the SPAI-C were correlated with parental observations of fear and social activity. The results indicated a significant correlation with the CBCL Internalizing subscale. Because the Internalizing subscale is a broad measure of anxious and depressive behavior, it would be unreasonable to expect that correlation to be more than moderate in magnitude. In addition, the lack of a significant correlation between the SPAI-C and the Externalizing dimension provides a foundation for the SPAI-C's discriminative validity, demonstrating that the correlations were specific to anxiety and not just overall psychopathology. Furthermore, there was a significant inverse relationship between the SPAI-C and the CBCL Social Competence subscale; the latter assesses the children's engagement in peer-oriented social activities. Thus, higher scores on the SPAI-C were associated with fewer social activities.

The factor analysis resulted in the identification of three factors accounting for just under 60% of the variance. Furthermore, the factor scores appear to be reliable. Interestingly, these three factors reflect recent attempts to subtype social phobia. The factor accounting for the majority of the variance consisted of negative assertion and general conversational items, situations that are characteristic of the generalized subtype. The second factor consisted of social encounters such as parties or dances, situations often distressful to many social phobics. Heimberg, Holt, Schneier, Spitzer, and Liebowitz (1993) suggested that there is a group of social phobics (limited interaction subtype) who do not experience a pervasive pattern of social distress (such as in general conversation) but who do have anxiety in a limited number of social encounters. However, the existence of this subtype has yet to be confirmed empirically. Finally, the third factor consisted of public performance situations such as speaking, reading, or performing in front of others. This is consistent with the situations often considered to characterize the specific subtype. In addition to breaking down along clearly identifiable classes of social encounters, the loadings for these three factors are consistent with the findings of Beidel (1991), who found that, among 8- to 12-year-old socially phobic children, the most commonly encountered distressful situations were unstructured interactions with other children. Thus, these data further confirm that, among children, distress in general conversational and negative assertion encounters is an important aspect of the disorder.

Finally, a comparison of the SPAI-C scores of socially anxious children and normal controls revealed a significant difference

between the two groups, a difference that was replicated with a second sample. Furthermore, a cutoff score of 18 appears to discriminate well between socially anxious and normal control children. Although the SPAI-C should not be used as a diagnostic instrument, it could be useful in screening children for further evaluation of social fears, for determining the specifics of social-evaluative complaints, or for evaluating treatment outcome. In addition, the structure of the SPAI-C allows the inventory to be used qualitatively as well as quantitatively. Item responses can be examined to determine the specific characteristics of a child's fear that, in turn, might be useful in the development of a treatment strategy. For example, a child may report fears related to negative evaluation by same-age peers but not such fear relating to adults. Such information would aid in target behavior selection and documentation of treatment outcome.

This study did not examine the performance of children with social phobia separately from those with other social-evaluative based diagnoses (i.e., avoidant disorder of childhood and adolescence or overanxious disorder), although the majority of children in the group had a diagnosis of social phobia. The diagnostic criteria with respect to social fears has undergone significant revision with the publication of the *DSM-IV*. Avoidant disorder of childhood and adolescence has been deleted and the criteria for this condition merged with social phobia. Overanxious disorder has been eliminated as a separate childhood disorder. Generalized anxiety disorder has been expanded to include the term *overanxious disorder in children*. However, unlike the *DSM-III-R* diagnostic criteria for overanxious disorder, the revision excludes many of the social-evaluative criteria that made differential diagnosis of social phobia and overanxious disorder so difficult (Beidel & Morris, 1993). Thus, although the categorization of socially anxious children used in the current study cut across several different diagnostic categories, the combination of all children into a single group reflects the changes that have occurred with the publication of the new diagnostic criteria.

The lack of differences between male and female participants in SPAI-C scores is consistent with what is known about the prevalence of social phobia. Unlike simple phobias, agoraphobia, or panic disorder, which occur more frequently among women, social phobia occurs approximately equally as often in men and women. Thus, the outcome of this study is consistent with the established social phobia literature. Similarly, with respect to age, scores on the SPAI-C were not different between children (12 years of age and under) or adolescents (13 years of age and older). Likewise, validity coefficients were not different when these two groups were examined separately. Clark et al. (1994) have provided validity data on adolescents for the adult SPAI. Given that the SPAI-C has a 3rd-grade reading level, the adult SPAI is considered to be a more appropriate choice for older adolescents.

The current study is limited by the sample size of the other anxiety diagnostic groups that preclude discriminant validity studies at this time. Furthermore, the factor analysis requires replication with a second sample, and appropriate validity studies are needed to address the construct validity of the factor scores. Such studies are in progress and, until they are completed, it is recommended that only the SPAI-C total score be

used in research investigations. Nonetheless, the results of this initial investigation support the reliability and validity of the SPAI-C in assessing social anxiety and phobia in children.

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Received April 22, 1994

Revision received September 20, 1994

Accepted September 27, 1994 ■