

Behavioral Treatment of Childhood Social Phobia

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Sixty-seven children (ages 8 and 12) with social phobia were randomized to either a behavioral treatment program designed to enhance social skills and decrease social anxiety (Social Effectiveness Therapy for Children, SET-C) or an active, but nonspecific intervention (Testbusters). Children treated with SET-C were significantly more improved across multiple dimensions, including enhanced social skill, reduced social fear and anxiety, decreased associated psychopathology, and increased social interaction. Furthermore, 67% of the SET-C group participants did not meet diagnostic criteria for social phobia at posttreatment compared with 5% of those in the Testbusters group. Treatment gains were maintained at 6-month follow-up. The results are discussed in terms of treatment of preadolescent children with social phobia and the durability of treatment effects.

Although social phobia had been considered an early onset disorder beginning in middle to late adolescence (e.g., Turner, Beidel, Dancu, & Keys, 1986), the syndrome has been diagnosed in children as early as age 8 (Beidel & Turner, 1988). The *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) included developmentally sensitive descriptors of social phobia in children for the first time.

Extant data reveal that the syndrome in children is very similar to that found in adults (Beidel & Turner, 1998). For example, youth with social phobia fear speaking, reading, eating, or writing in public; going to parties; using public restrooms; speaking to authority figures; and interactions in informal social situations (Beidel, Turner, & Morris, 1999). Unstructured peer interactions (e.g., playing games with other children, joining in activities at recess, or riding bicycles with a friend) are the most frequent distressing events, occurring as often as every other day (Beidel, Turner, & Morris, 1999). Emotional reactions can be quite severe and include headaches or stomach aches, occasional panic attacks, crying, and behavioral avoidance. Children with social phobia also suffer from higher levels of general anxiety, dysphoria, and depression. They report loneliness, few friends, a very restricted range of social relationships, and demonstrate deficient social skills (Beidel, Turner, & Morris, 1999). Sometimes oppositional and school refusal behaviors can occur, and in adolescents, alcohol and other substance abuse have been reported (Clark, 1993). Thus,

even in childhood, social phobia can have a significant impact on emotional, social, and academic functioning.

Although the clinical presentation and detrimental effects of social phobia in childhood are becoming clearer, to date there have been only six studies that have addressed the treatment of this disorder in children. However, in five of those studies, children with social fears were included among larger samples of children with various anxiety disorders (Barrett, Dadds, Rapee, & Ryan, 1996; Kendall, 1994; Kendall et al., 1997; Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999). Additionally, several of these studies used the *DSM-III-R* (3rd ed., rev.; American Psychiatric Association, 1987) diagnosis of avoidant disorder of childhood, which, with the publication of the *DSM-IV*, has been subsumed under social phobia. In the first reported study (Kendall, 1994), a group receiving cognitive-behavior therapy (CBT) was compared with a wait-list control group. A few children who had avoidant disorder were included in the sample of children with anxiety disorders. At posttreatment, those who received CBT had significantly lower general anxiety and enhanced coping abilities. Parents' ratings of anxiety/depression and social competence also improved, but teacher ratings did not change. Finally, a total behavioral observational score differentiated the treatment and control groups. A replication study (Kendall et al., 1997) reported a similar outcome for children with various anxiety disorders, again including some with avoidant disorder. Fifty-three percent of all treated children no longer met diagnostic criteria at posttreatment compared with 6% of the wait-list control group. Treatment outcome did not differ by diagnostic group. Barrett et al. (1996) reported a positive treatment outcome for a very similar CBT program for Australian youth with various anxiety disorders, including 27% with social phobia. Silverman, Kurtines, Ginsburg, Weems, Lumpkin, and Carmichael (1999) reported that a group cognitive-behavioral treatment for children with social phobia, overanxious disorder, or generalized anxiety disorder was more effective than a wait-list control condition. However, Silverman, Kurtines, Ginsburg, Weems, Rabian, and Serafini (1999) did not find posttreatment differences among a contingency management

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program, a self-control program, or an educational support group for children with various types of phobias, among which were a few children with social phobia.

Although children with avoidant disorder or social phobia were reported as improved in these studies, for several reasons, the results must be considered preliminary. First, only 18–19% of the samples (Kendall, 1994; Kendall et al., 1997) had avoidant disorder. Neither sample included children with clearly documented social phobia. Even with substantial overlap between avoidant disorder and social phobia, the small number of subjects precludes drawing strong conclusions regarding the treatment's specific efficacy for avoidant disorder or, by extrapolation, social phobia. Second, the active treatment was compared with a wait-list control group, a less stringent comparison than an attention-placebo or nonspecific treatment group. Similar concerns exist with the Barrett et al. (1996) study. Specifically, although 27% of the children in the Barrett et al. study had social phobia, the outcome was not reported separately by diagnostic group (although there was a general statement that the treatment appeared equally efficacious across diagnoses). Silverman and colleagues (Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999) also included mixed diagnostic groups. Finally, none of these studies included specific measures that assessed social anxiety or phobia. Thus, although the findings reported to date have implications for the treatment of social phobia, there is a need for studies that address childhood social phobia specifically.

Only one study has reported the results of a treatment program specifically for social phobia patients who were not adults. The intervention, cognitive-behavior group therapy for adolescents (CBGT-A), consisted of psychoeducation, cognitive restructuring, skill building, and exposure (Albano, DiBartolo, Heimberg, & Barlow, 1995). Five adolescents were treated over a 3-month period using a single-case design. At posttreatment, social phobia had decreased to subclinical levels in 4 of 5 adolescents, and at 1-year follow-up, 4 adolescents did not meet criteria for social phobia. A recent, randomized, controlled trial of 27 adolescents treated with either CBGT or CBGT plus four sessions of parental involvement did not reveal any significant differences at posttreatment (Tracy et al., 1998). However, this initial report did not address the outcome of the third cell included in the randomized trial, which was a wait-list control group (A. M. Albano, personal communication, January 30, 2000). Thus, whether the improvement in these two groups was significantly greater than a no-treatment control group has yet to be determined.

In summary, although several studies have included children with social fears or social phobia in their sample, to date there is only one reported controlled trial of psychosocial treatment with nonadult social phobics (adolescents) with *DSM-IV* social phobia. All of these studies have used cognitive restructuring and more traditional behavioral procedures such as exposure. However, a recent study of the psychopathology of social phobia in children indicates that they suffer social skill deficits (Beidel, Turner, & Morris, 1999), suggesting a need to address skill deficits in this population. Furthermore, because social phobia can be diagnosed at least as early as age 8, interventions designed for preadolescent children are needed. This study reports the results of a multifaceted behavioral treatment for childhood social phobia.

Method

Subjects

One hundred two children between the ages of 8 and 12 were screened for the study at the Anxiety Prevention and Treatment Center of the Medical University of South Carolina. Participants were drawn from those seeking treatment in the clinic, referrals from other professionals, referrals from the schools, and responders to advertisements indicating the availability of a treatment program for "shy" children. Parents and children were interviewed (together for younger children and separately for older children) with the Anxiety Disorders Interview Schedule for Children (ADIS-C; Silverman & Albano, 1997) by either Deborah C. Beidel or Samuel M. Turner. When children were interviewed separately from their parents, data were combined from the interviews to derive a final diagnosis. The ADIS-C is a semistructured interview designed to assist the clinician in the determination of *DSM-IV* Axis I diagnoses. Twenty-five percent of the interviews were videotaped and independently rated by a second clinician. Interrater reliability for a diagnosis of social phobia was $\kappa = .85$. Other diagnoses were made too infrequently for the calculation of kappa coefficients.

Among those interviewed, 24 (24%) did not meet study inclusion criteria. That is, they did not have a primary diagnosis of social phobia or their social fears were at a subclinical level. An additional 11 (11%) were excluded for administrative reasons (i.e., did not return to complete pre-treatment assessment). Thus, 67 (66% of those referred) were admitted to the protocol. All children who were randomized met criteria for a primary diagnosis of social phobia. All children expressed fears of interpersonal interactions as well as fears in public performance situations. Thus, all children would be classified as the *generalized subtype*. In addition, 41% had a comorbid diagnosis, most of which were other anxiety disorders. Comorbid diagnoses included panic disorder ($n = 1$), generalized anxiety disorder ($n = 5$), specific phobia ($n = 3$), obsessive-compulsive disorder ($n = 2$), separation anxiety disorder ($n = 4$), adjustment disorder with depressed mood ($n = 1$), selective mutism ($n = 4$), and attention deficit hyperactivity disorder ($n = 8$).

Thirty-six children were randomly assigned to Social Effectiveness Therapy for Children (SET-C) and 31 to the nonspecific treatment control group (Testbusters). Children with additional comorbid disorders were equally distributed across the two groups. Treatment groups were started when 4 to 6 children within the specified age ranges (8–10 or 10–12) were admitted to the study. Assignment to treatment condition (i.e., SET-C or Testbusters) for each cohort was accomplished by a predetermined randomization schedule. Seven subjects (6 assigned to Testbusters and 1 to SET-C) did not attend the first session, citing an inability to adhere to the treatment protocol. However, parents and children did not know to which group they had been assigned until after the first session. Thus, this differential entry rate does not appear to be the result of a difference in treatment credibility. Ten subjects (16%) dropped out of treatment (5 from SET-C and 5 from Testbusters, all citing inability to commit to twice-per-week appointments). Demographic data for those children who completed the study are depicted in Table 1.

An analysis of demographic and pretreatment variables indicated that there were no significant differences between the dropouts and completers with the exception of age and scores on the Loneliness Scale (LS; Asher & Wheeler, 1985). Those who dropped out were younger, $M = 9.5$ years ($SD = 1.8$) versus $M = 10.5$ years ($SD = 1.5$), $t(60) = 2.06$, $p < .05$, and had lower scores (were less lonely) on the LS, $M = 35.1$ ($SD = 10.1$) versus $M = 43.0$ ($SD = 11.6$), $t(60) = 2.09$, $p < .05$. Among the 50 participants who completed the study, 30 completed the SET-C protocol, and 20 completed the Testbusters protocol (75% of those beginning treatment completed the study). In Table 2, mean scores and standard deviations on demographic and pretreatment variables are presented for the dropouts and completers.

Table 1
Demographic Characteristics of Study Completers

Characteristic	SET-C (n = 30)	Testbusters (n = 20)	Entire sample (n = 50)
Age (years) ^a	10.5 (1.6)	10.6 (1.4)	10.5 (1.5)
Race ^b			
White	18 (60%)	17 (85%)	35 (70%)
African American	8 (27%)	3 (15%)	11 (22%)
Hispanic	3 (7%)	0 (0%)	2 (4%)
Biracial	2 (7%)	0 (0%)	2 (4%)
Gender ^b			
Boys	14 (47%)	6 (30%)	20 (40%)
Girls	16 (53%)	14 (70%)	30 (60%)
IQ score ^a	105.1 (15.9)	106.6 (18.4)	105.7 (16.7)
Clinical severity ^a	5.5 (0.9)	5.6 (1.3)	5.6 (1.1)

Note. SET-C = Social Effectiveness Therapy for Children.

^a Values are means (and standard deviations). ^b Values are frequencies (and percentages).

Measures

The assessment strategy, administered at pretreatment, posttreatment, and 6-month follow-up, included self-report inventories, parent ratings, independent evaluator ratings, daily diary ratings, and ratings of skill and anxiety in two behavioral tasks: role-play scenes and reading aloud before a group.

Self-Report Inventories

These included the Children's Depression Inventory (CDI; Kovacs, 1985), Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1968), LS (Asher & Wheeler, 1985), Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995), and the State-Trait Anxiety Inventory for Children (STAI-C; Spielberger, 1973).

Parental Report

Parents completed the Child Behavior Checklist (CBCL; Achenbach, 1991). The Internalizing scale was used in the analysis.

Independent Evaluator Ratings

At pretreatment, the clinician administering the ADIS-C also completed the Children's Global Assessment Scale (K-GAS; Shaffer et al., 1983). The K-GAS is a 10-item rating scale used to assess children's academic, social, or occupational functioning. At posttreatment and follow-up, a PhD-level clinician unaware of the child's treatment group completed the ADIS-C and the K-GAS. Interrater reliability for the K-GAS was $r = .85$.

Behavioral Assessment of Social Phobia

Each child participated in two tasks to measure social skill and anxiety. Independent observers who were unaware of the child's group assignment used Likert scales to make ratings of skill and anxiety. Effectiveness was rated on a 5-point scale where 1 = *completely ineffective* and 5 = *very effective*. Ratings of anxiety were made with a 4-point scale where 1 = *very relaxed* and 4 = *very nervous*. In addition, children rated their anxiety by using a 5-point pictorial Likert scale where 1 = *very relaxed* and 5 = *very anxious or distressed*. Twenty-five percent of all assessments were rated independently by a second rater to determine interrater reliability (Pearson's r). Interrater reliability was $r = .89$ for skill and $r = .87$ for anxiety. The order of task presentation was determined randomly. The specific tasks are described below.

Social skills assessment. Children were aware of the evaluative nature of the task and were given standard behavioral assertiveness test instructions (e.g., to respond as if the scene were really happening). Prior to the initiation of the task, the children completed a practice scene to make sure that they understood the instructions. Children engaged in five role-plays with a same-age peer trained to respond in a friendly, but neutral, fashion. Role-play scene content included starting a conversation with an unfamiliar child, offering to help another child, giving a compliment, receiving a compliment, and responding assertively to the inappropriate behavior of another child.

Read-aloud task. Children read aloud the story of Jack and the Beanstalk in front of a small group (at least 1 of whom was a same-age peer) for 10 min.

Daily Diary

The daily diary was used to assess the frequency of engagement in various social situations. In addition, children recorded their response to the situation, which was categorized by an independent evaluator as positive ("I told myself not to be nervous, it would be OK"), negative ("I refused to go to the party"), or neutral ("I did what I was told"). Interrater reliability was $\kappa = .97$. In addition, children rated their distress in each particular social encounter with the 5-point rating scale described above. Children completed the diary for a 2-week period at pretreatment, posttreatment, and 6-month follow-up. Although instructed to complete the diary every day, the mean number of recorded days was 11.4. Because of some variability in number of days recorded, frequency of events and frequency of coping responses were calculated as percentages (number of events divided by number of days recorded). Ratings of distress were averaged across all situations recorded.

Table 2
Frequencies or Means (and Standard Deviations) for Dropouts and Completers

Variable	Completers (n = 50)	Dropouts (n = 10)	p
Demographic			
Age	10.5 (1.5)	9.5 (1.8)	.05
Gender (% female)	60%	42%	
Race (% Caucasian)	70%	58%	
Comorbidity (% with comorbid diagnosis)	46%	29%	
IQ score	105.7 (16.7)	100 (12.8)	
Pretreatment			
CBCL Internalizing scale	69.0 (7.1)	64.4 (9.1)	
Children's Depression Inventory	10.7 (7.0)	11.2 (10.8)	
EPI Extraversion	11.9 (4.9)	12.8 (5.7)	
EPI Neuroticism	10.1 (5.2)	9.5 (5.5)	
Children's Global Assessment Scale	5.7 (0.8)	5.6 (0.5)	
Loneliness Scale	43.0 (11.6)	35.1 (10.1)	.05
STAI-C State	32.2 (8.7)	33.8 (10.1)	
STAI-C Trait	38.1 (7.5)	35.5 (9.2)	
Reading anxiety	2.7 (1.0)	2.5 (0.7)	
Reading effectiveness	2.8 (1.2)	2.2 (1.0)	
Reading self-rating	3.3 (1.4)	3.3 (1.5)	
Speech latency	4.2 (3.1)	3.3 (3.1)	
Social skills anxiety	3.0 (0.9)	2.5 (0.7)	
Social skills effectiveness	2.1 (1.1)	2.2 (1.1)	
Social skills self-rating	3.2 (1.4)	3.6 (1.4)	

Note. CBCL = Child Behavior Checklist; EPI = Eysenck Personality Inventory; STAI-C = State-Trait Anxiety Inventory for Children.

Treatment

SET-C

SET-C (Beidel, Turner, & Morris, 1998) is a multifaceted behavioral treatment modeled after a successful program used for adult social phobics (Turner, Beidel, & Cooley-Quille, 1997). SET-C is comprehensive and structured to address various dimensions of the syndrome as it exists in young children, including reduction of social anxiety and fear, improvement in social skill and interpersonal functioning, and increase in participation in social activities. The components include Child and Parent Education, Social Skills Training and Peer Generalization Experiences, and In Vivo Exposure. The last three components are conducted simultaneously. A component of the child program (SET-C) not included in the adult program is the Peer Generalization component (see below). Social Skills Training was conducted in small groups of 4 to 6 children with sessions lasting approximately 60 min. Peer Generalization sessions were 90 min. In Vivo Exposure was conducted in individual sessions averaging 60 min in length. Treatment was provided twice weekly (one group session and one individual session) over a 12-week period of time.

Educational session. The one-session Educational component included providing information about social phobia in children, the specifics of the SET-C treatment, and an opportunity for parents and children to ask questions.

Social Skills Training. As noted in the introduction, children with social phobia exhibit substantial social skills deficits (Beidel, Turner, & Morris, 1999). Thus, a Social Skills Training component was considered necessary as part of the treatment package. The content of the Social Skills Training sessions included greetings and introductions, starting conversations, maintaining conversations, listening and remembering skills, skills for joining groups, positive assertion, negative assertion, and telephone skills. One skill was taught each week by using instruction, modeling, behavioral rehearsal, and corrective feedback. Children were assigned homework based on that week's content.

Peer Generalization session. Because prior Social Skills Training programs for socially isolated children indicated that generalization to naturalistic settings did not occur spontaneously (see Beidel & Turner, 1998, for a review), specific Peer Generalization programming was included. Thus, immediately following each Social Skills Training session, the children joined a group of nonanxious peers in a 90-min group activity. Examples of group activities included bowling, pizza parties, flying kites, or in-line skating. A different activity occurred each week and always included lunch. The Peer Generalization sessions provided an opportunity to practice acquired social skills in a natural setting and with children who did not have social phobia. Activities were unstructured to mimic children's usual interactions. Peers were recruited through newspaper advertisements. Although a formal diagnostic interview was not conducted, children were interviewed clinically by either Deborah C. Beidel or Samuel M. Turner and did not evidence any Axis I disorders. In addition, they had to demonstrate good social skills (i.e., they completed the social skills assessment with no difficulty) and have a desire to work with shy children. Finally, they had to score in the nonanxious range on the SPAI-C and have a parental rating below 70 on the CBCL Internalizing scale. Different peers were used throughout the 12-week program to ensure opportunities to interact with a variety of different children. The number of peers used in each session matched the number of peers in the group (i.e., if there were 5 children in the group, 5 peers were included in the Peer Generalization session).

In Vivo Exposure. In addition to the skills training, children participated in a once per week individual exposure session using activities specifically constructed to address their unique pattern of social fears. Among adult populations, exposure-based interventions have been documented to be the most effective for the treatment of social phobia. Examples of exposure activities included reading in front of a group, playing a game with peers, acting out plays in front of an audience, or taking tests at

the blackboard while being observed by others. One item was presented each week. The child participated in the activity until elicited anxiety dissipated, with session length averaging 60 min (range = 45–75 min). Sessions were longer in the initial phase of treatment and shorter at the end. Children were able to participate fully in all tasks presented to them.

Testbusters

Testbusters (Beidel, Turner, & Taylor-Ferreira, 1999) is a study-skills and test-taking strategy program designed specifically for children between the ages of 8 and 12. Testbusters has face validity as a control condition inasmuch as anxiety during test taking is a common complaint of children with social phobia (Beidel, Turner, & Taylor-Ferreira, 1999) and the children in this study. Skills addressed in the Testbusters program include establishing good study habits, the development of a study contract, instruction in the Survey, Question, Read, Review, and Recite (SQ3R) method of study skills (Carmen & Adams, 1972), test-taking preparation, and specific instructions in how to answer multiple-choice, matching, and fill-in-the-blank questions. Reviewing test-taking mistakes is also part of the program. In this study, Testbusters was conducted twice weekly with one individual and one group session (to parallel the SET-C program). Skills were introduced in the group session where children were required to read aloud in front of the group from the Testbusters manual and discuss their experiences with the topic being addressed during that session. Children were provided with opportunities to practice the skill in the group setting by using standardized materials appropriate for their age. In the individual session, children met with the therapist who reviewed the skills presented in the group session and provided the children with additional opportunities to practice using their own academic materials. In addition, they had to practice the skills everyday for 30 min by means of a study contract.

The structure of Testbusters mimicked many crucial elements of the SET-C program, and over 80% of the children in this study reported at least moderate anxiety in testing situations. Children received two sessions per week (one group and one individual session) as did the SET-C group. Testbusters did not have a peer generalization component, but both groups had homework assignments. Finally, children in Testbusters were required to perform in front of the other children in the group (reading aloud and answering questions). Because well-validated measures of treatment credibility for children did not exist at the start of the study, credibility ratings were not used in this study. However, dropout rates were equivalent across the two groups, suggesting equal credibility. Thus, the Testbusters program provided a strong test of the efficacy of SET-C by equivalent amounts of therapist attention, and the group sessions required the children to participate in performance and social interactions, although not in the programmatic fashion found in the SET-C group.

Results

There were no differences on demographic (age, IQ, comorbidity status, race, or gender) or clinical severity (K-GAS scores or ADIS-C clinical severity ratings) variables at pretreatment. Treatment outcome was analyzed with repeated measures multivariate analyses of variance (MANOVAs) where time represented the within-subject factor. Because of a few instances of missing data, there is a slight variation in the number of subjects included in the analysis. Measures were grouped according to the following dependent variable classifications: those assessing social phobia, those assessing other aspects of psychopathology, those assessing social skill and performance, and those assessing self-reported distress in social interactions. Significant multivariate effects were followed by repeated measures univariate tests where time was the

repeated measure. Pre- and posttreatment means and standard deviations are presented in Table 3.

Social Phobia

Included in this analysis was the EPI Extroversion scale, the SPAI-C, and clinician ratings (K-GAS and ADIS-C severity rating). The intercorrelations among the various measures ranged from $r = .426$ to $.846$. All were statistically significant at $p < .01$. The results of the MANOVA indicated that there was a significant multivariate Time \times Group interaction, $F(7, 36) = 7.89, p < .005$. Follow-up univariate analyses indicated significant Group \times Time interactions for all of these variables: EPI Extraversion scale, $F(1, 45) = 6.41, p < .01$; SPAI-C total score, $F(1, 45) = 13.89, p < .001$; K-GAS severity score, $F(1, 45) = 47.51, p < .0005$; and ADIS-C severity rating, $F(1, 45) = 15.25, p < .0005$. In each case, significant improvement occurred in the group treated with SET-C.

Other Aspects of Psychopathology

Included in this analysis were the CBCL Internalizing scale, CDI, LS, EPI Neuroticism scale, and the STAI-C State and Trait subscales. Intercorrelations among the self-report measures included in this category ranged from $r = .21$ to $.55$. All were statistically significant at the .05 level or higher. The correlations between the CBCL Internalizing scale and the child's self-report measures were lower ($r = .06$ -.24). These lower correlations might be expected given that the information is coming from two

different sources. Nevertheless, the CBCL Internalizing scale was included in this analysis as it assesses a broad range of psychopathology. The overall MANOVA was significant, $F(11, 33) = 2.10, p < .05$. With respect to the univariate tests, there were significant Time \times Group interactions on the EPI Neuroticism scale, $F(1, 45) = 7.37, p < .01$, and the CBCL Internalizing scale, $F(1, 45) = 4.36, p < .01$. In each case, greater improvement was noted in the group that received SET-C. In addition, there were significant effects for time on the LS, $F(1, 45) = 10.63, p < .005$; the STAI-C State subscale, $F(1, 45) = 4.07, p < .05$; and the STAI-C Trait subscale, $F(1, 45) = 20.22, p < .0005$; indicating significant pre- to posttreatment improvement. There were no significant main or interaction effects for the CDI, although there was a trend toward a Time \times Group interaction ($p < .07$).

Observer Assessment of Social Skill and Performance

Included in this analysis were the independent observers' ratings of skill and anxiety during the role-play and read-aloud tasks. Intercorrelations among the variables ranged from $r = .486$ to $.781$, and all were significant at $p < .01$. The overall repeated measures MANOVA revealed a significant Time \times Group interaction, $F(7, 35) = 2.52, p < .05$. There was also a significant univariate Time \times Group interaction for the observer rating of skill during the role-play task, $F(1, 45) = 15.77, p < .0005$, indicating that those treated with SET-C were judged to be significantly more skilled at posttreatment. There was a similar trend for

Table 3
Pre- and Posttreatment Means (and Standard Deviations) for the SET-C and Testbusters Groups

Variable	SET-C (n = 30)		Testbusters (n = 20)		Effect
	Pre	Post	Pre	Post	
Social phobia					
EPI Extroversion	11.4 (4.9)	14.6 (5.2)	11.8 (6.4)	11.2 (5.2)*	T \times G
K-GAS	6.0 (0.7)	7.5 (1.2)	5.5 (1.1)	5.9 (0.9)***	T \times G
ADIS-C severity rating	5.5 (1.0)	1.3 (1.9)	5.6 (1.2)	5.1 (1.8)***	T \times G
SPAI-C	26.8 (8.8)	16.0 (9.1)	25.9 (10.2)	24.2 (8.9)***	T \times G
Other aspects of psychopathology					
CBCL Internalizing	68.4 (7.2)	60.2 (8.1)	70.3 (8.3)	67.0 (6.9)*	T \times G
CDI	9.5 (8.4)	6.3 (6.5)	11.1 (13.8)	12.6 (7.2)	
EPI Neuroticism	10.2 (5.5)	7.7 (4.0)	9.5 (5.5)	11.1 (4.9)**	T \times G
Loneliness Scale	42.0 (11.5)	35.3 (10.5)	44.6 (12.2)	41.5 (12.7)**	T
STAI-C State	29.6 (10.3)	28.4 (6.2)	31.1 (7.8)	28.5 (7.3)***	T
STAI-C Trait	30.3 (8.4)	30.1 (5.8)	35.6 (7.4)	34.7 (8.0)***	T
Social and performance skill					
Role-play effectiveness ^a	2.0 (1.1)	2.8 (1.1)	2.5 (1.2)	2.5 (1.0)***	T \times G
Role-play anxiety ^b	2.9 (0.9)	2.5 (0.7)	2.9 (0.9)	2.9 (0.9)*	T
Read-aloud effectiveness	3.0 (1.3)	3.7 (1.3)	2.9 (1.2)	3.1 (1.2)**	T
Read-aloud anxiety	2.5 (1.0)	2.1 (0.9)	2.7 (1.0)	2.6 (1.0)	
Self-ratings of frequency and distress in social interactions					
Stressful events (% of days)	0.8 (0.3)	0.3 (0.4)	0.7 (0.4)	0.5 (0.6)	T \times G
Negative coping (% of events)	0.7 (0.2)	0.3 (0.2)	0.8 (0.3)	0.4 (0.2)	
Self-report of anxiety	3.3 (1.1)	2.6 (0.9)	3.2 (1.2)	3.0 (1.0)	
Role-play self-rating ^c	3.4 (1.3)	4.0 (1.1)	3.1 (1.4)	3.6 (1.0)	
Read-aloud self-rating ^c	3.7 (1.4)	4.2 (1.0)	3.2 (1.2)	4.1 (1.3)	

Note. SET-C = Social Effectiveness Therapy for Children; EPI = Eysenck Personality Inventory; K-GAS = Children's Global Assessment Scale; ADIS-C = Anxiety Disorders Interview Schedule for Children; SPAI-C = Social Phobia and Anxiety Inventory for Children; CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; STAI-C = State-Trait Anxiety Inventory for Children; T = time; G = group.

^a Higher scores indicate more skill. ^b Lower scores indicate less anxiety. ^c Higher scores indicate less anxiety.

* $p < .01$. ** $p < .005$. *** $p < .001$.

the read-aloud effectiveness score ($p < .07$). In addition, there was a significant main effect for time for effectiveness during the read-aloud task, $F(1, 45) = 8.17, p < .01$, and observer rating of anxiety during the role-play task, $F(1, 45) = 4.16, p < .05$. In each case, posttreatment ratings were lower (better) than at pretreatment. There were no main effects for the observer ratings of anxiety during the read-aloud task.

Self-Assessment of Interaction and Distress During Social Interactions

Included in this analysis were the percentage of days that a stressful event occurred, the percentage of negative coping behaviors, ratings of distress when stressful events occurred, and self-ratings of distress during the role-play and read-aloud tasks. Intercorrelations among the variables ranged from $r = .23$ to $.63$. With the exception of $r = .23$ (percentage of negative coping strategies and rating of distress on the diary), all were significant at $p < .05$. The repeated measures MANOVA did not reveal a significant Time \times Group interaction. Therefore, no further analyses were conducted.

Effect Sizes

Effect sizes (d) were calculated for all variables used in this study and are presented in Table 4. As depicted, effect sizes were calculated for both groups for 19 variables. With the exception of the STAI-C State and Trait Anxiety subscales and two self-ratings

Table 4
Effect Sizes for All Dependent Variables

Variable	SET-C	Testbusters
Social phobia		
EPI Extroversion	0.59	0.13
K-GAS	1.31	0.49
ADIS-C severity rating	2.30	0.30
SPAI-C	1.24	0.22
Other aspects of psychopathology		
CBCL Internalizing	1.12	0.44
CDI	0.49	0.11
EPI Neuroticism	0.54	0.27
Loneliness Scale	0.69	0.29
STAI-C State	0.30	0.33
STAI-C Trait	0.65	0.73
Social and performance skill		
Role-play effectiveness	0.54	0.00
Role-play anxiety	1.02	0.21
Read-aloud effectiveness	0.76	0.14
Read-aloud anxiety	0.38	0.11
Self-ratings of frequency and distress in social interactions		
Stressful events (% of days)	0.54	0.37
Negative coping (% of events)	0.39	0.11
Self-report of anxiety	0.20	0.27
Role-play self-rating	0.55	0.40
Read-aloud self-rating	0.52	0.78

Note. SET-C = Social Effectiveness Therapy for Children; EPI = Eysenck Personality Inventory; K-GAS = Children's Global Assessment Scale; ADIS-C = Anxiety Disorders Interview Schedule for Children; SPAI-C = Social Phobia and Anxiety Inventory for Children; CBCL = Children's Behavior Checklist; CDI = Children's Depression Inventory; STAI-C = State-Trait Anxiety Inventory for Children.

of anxiety, effect sizes were larger for the SET-C group than for the Testbusters group. In most instances, effect sizes for the SET-C group were in the moderate to large range, whereas the effect sizes for the Testbusters group were in the small to moderate ranges.

Clinical Significance and Responder Status

The clinical significance of these changes was determined by examining the percentage of subjects in each group who no longer met DSM-IV criteria for social phobia. Among the SET-C group, 67% no longer met criteria compared with 5% for the Testbusters group, $\chi^2(1, N = 44) = 17.34, p < .0001$. Similarly, responder status was defined a priori as those children who at posttreatment scored less than 18 on the SPAI-C (a score previously established as the cutoff for social phobia) and a rating by the independent evaluator of 8 or 9 on the K-GAS (indicating very minimal or no functional impairment). Only children who met both of these criteria were considered to be responders. When the conservative responder criteria were applied at posttreatment, 53% of the SET-C group met criteria compared with 5% for the Testbusters group, $\chi^2(1, N = 44) = 10.41, p < .001$.

Another way of determining clinical significance is to compare outcome data on treated individuals with data from a normative sample. For this particular investigation, we determined the percentage of children treated with SET-C whose posttreatment and follow-up scores fell below a score of 18. This value had been previously determined as a valid cutoff score for the diagnosis of social phobia (Beidel et al., 1995). At posttreatment, 63% of children in the treated group had SPAI-C scores that were less than 18. At follow-up, 82% of those children treated with SET-C had SPAI-C scores below 18.

Relationship of Demographic Variables to Outcome

Data were analyzed to determine whether there were differential treatment effects based on race, gender, age (<10 years or ≥ 10 years) or presence or absence of a comorbid diagnosis. The results were analyzed with independent sample t tests with a Bonferroni correction to control for experimentwise error rate (.05/19 comparisons equals $p < .0026$). The results indicated that treatment outcome for SET-C did not differ on the basis of any of these three variables.

6-Month Follow-Up

Only 1 child treated with Testbusters was considered to be a responder at posttreatment. Therefore, the children treated with Testbusters were removed from the protocol and were not available for follow-up analysis. Twenty-two children (73%) originally treated with SET-C completed the 6-month follow-up. Three dropped out during follow-up, and the relocation of the research program to the University of Maryland precluded follow-up on the last 5 completers. Results were analyzed with a one-way repeated measures analysis of variance, with time (pretreatment, posttreatment, and 6-month follow-up) as the repeated measure. The pretreatment, posttreatment, and 6-month follow-up means are presented in Table 5.

Overall, the results indicated that significant improvement occurred from pretreatment to posttreatment and that this improve-

Table 5
Analysis of Posttreatment to 6-Month Follow-Up for SET-C Means (and Standard Deviations)

Variable	Pre	Post	6-month follow-up	Effect
Social phobia				
K-GAS	5.8 (0.7)	8.0 (1.2)	8.3* ^a (0.7)	Pre vs. post
ADIS-C severity rating	5.6 (1.1)	1.1 (1.8)	0.6* (1.1)	Pre vs. post
EPI Extroversion	11.3 (4.3)	14.8 (4.8)	17.6* ^a (3.4)	Pre vs. post
Social Phobia and Anxiety Inventory	28.2 (8.3)	15.8 (8.0)	12.1* (8.0)	Pre vs. post
Other aspects of psychopathology				
CBCL Internalizing	68.1 (7.3)	60.4 (7.9)	58.4** (9.6)	Pre vs. post
CDI	11.1 (5.3)	6.4 (6.1)	3.0* (3.5)	Pre vs. follow-up
EPI Neuroticism	10.6 (5.0)	7.3 (3.2)	7.0* (4.7)	Pre vs. post
Loneliness Scale	42.1 (12.0)	34.8 (10.8)	30.5 (11.2)	
STAI-C State	32.5 (5.4)	28.0 (6.3)	28.2* (5.3)	Pre vs. post
STAI-C Trait	37.1 (7.5)	35.7 (5.8)	32.0* (5.8)	Pre vs. follow-up
Social skills and performance				
Social skills task				
Effectiveness	2.0 (1.0)	2.8 (1.1)	2.7* (1.0)	Pre vs. post
Anxiety	2.9 (0.8)	2.4 (0.7)	2.5 (0.6)	
Speech latency	4.0 (3.1)	2.8 (1.9)	2.6* (1.5)	Pre vs. follow-up
Self-rating of anxiety	3.3 (1.3)	4.1 (0.7)	4.6* (0.7)	Pre vs. follow-up
Read-aloud task				
Effectiveness	2.8 (1.1)	3.7 (1.1)	3.7* (1.0)	Pre vs. post
Anxiety	2.6 (0.9)	2.2 (0.7)	2.3 (0.9)	
Self-rating of anxiety	3.4 (0.9)	4.2 (0.7)	4.4* (1.3)	Pre vs. follow-up
Daily diary ratings				
Stressful events (% of days)	0.6 (0.2)	0.3 (0.3)	0.4* (0.2)	Pre vs. post
Negative coping (% of days)	0.8 (0.4)	0.3 (0.2)	0.3 (0.2)	
Self-report of anxiety	3.9 (2.4)	2.6 (2.1)	2.0* (1.5)	Pre vs. follow-up

Note. SET = C = Social Effectiveness Therapy for Children; K-GAS = Children's Global Assessment Scale; ADIS-C = Anxiety Disorders Interview Schedule for Children; EPI = Eysenck Personality Inventory; CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; STAI-C = State-Trait Anxiety Inventory for Children.

^a Higher scores on these measures represent improvement.

* $p < .01$.

ment was maintained at 6-month follow-up. In particular, SPAI-C scores at follow-up not only were below the cutoff for social phobia but were also not significantly different from scores of normal children (see Beidel et al., 1995, for SPAI-C norms). Among treatment responders, only 1 child showed evidence of relapse (a 6% relapse rate) at the 6-month follow-up, and in fact, 2 children who did not meet responder criteria at posttreatment did so at the 6-month follow-up. Of those who completed the 6-month follow-up, the percentage who no longer met diagnostic criteria following treatment rose to 85%.

Discussion

The study reported here is the first to date to report the results of a controlled trial of behavioral treatment for social phobia in preadolescent children. Previous studies included children and adolescents with social phobia among a larger sample of children with a range of anxiety disorders. The treatment, SET-C, which combines social skills training, peer generalization experiences, and exposure, produced significant improvement across various domains of functioning. Specifically, statistically significant improvement was noted in social phobic fear, general anxiety and distress, social skill and performance, and functioning in daily social encounters. Thus, the children were less anxious in social situations, showed less avoidance, were more skillful in their social interactions, and engaged in more social discourse. This

improvement was evident not only to the child but also to the parent and independent evaluators who either rated the child's clinical status or skill in social encounters.

The outcome was clinically as well as statistically significant. First, the group mean for SPAI-C scores of the SET-C group at posttreatment was below the cutoff previously established as indicative for social phobia (Beidel et al., 1995), effectively moving 63% of the children into the range reported by children who do not meet diagnostic criteria for social phobia. Second, 67% of the SET-C treated group no longer met diagnostic criteria, and 52% were judged to be treatment responders (compared with 5% and 5%, respectively, of those treated with Testbusters). Third, the effect sizes for the SET-C group were large for each domain examined, illustrating that the treatment has a broad impact on the clinical syndrome of social phobia. Finally, at follow-up, SPAI-C scores were even lower, suggesting that children continued to make improvements during this 6-month period.

In a previous study (Beidel, Turner, & Morris, 1999), we reported that there were no differences in the clinical presentation of social phobia with respect to gender or race (African American vs. Caucasian). In this study, treatment response within the SET-C group, based on these variables, was examined along with the additional variables of age (<10 years vs. 10–12 years) and comorbid conditions. No differences were found for race, gender, age, or presence or absence of comorbid conditions. It might be

argued that the smaller sample sizes resulting from parsing the SET-C group in this fashion may have reduced power such that it would be impossible to detect differences. However, mean scores for these subgroups were equivalent across the various measures, suggesting that power might not be an issue. In any event, the data suggest that SET-C treatment is equally efficacious for African American and Caucasian children and that it is efficacious whether or not comorbid conditions are present. Nevertheless, these issues will need to be addressed with larger samples.

Treatment gains were maintained over a 6-month follow-up period. Although 6 months is a relatively short period of time to examine the durability of treatment effects, careful perusal of the data indicate that there appeared to be continued improvement during this period. Although it is impossible to determine from the design of this study why this might have happened, one reason might be that the children had acquired a set of skills and could continue to use those skills even after the active treatment had ended. Furthermore, interviews with parents and children at the follow-up assessment indicated that children were engaging in social activities such as running for student council, joining athletic teams, and playing with "friends." Thus, there appeared to be qualitative as well as quantitative improvement. Obviously, further long-term follow-up is needed to better gauge the durability of this intervention, and it would be particularly interesting and informative to follow preadolescent children through the age of greatest risk for the onset of the disorder (i.e., mid-adolescence). A study of this type using this sample is currently underway.

The findings reported here are particularly encouraging because the experimental treatment (SET-C) was compared with an active, but nonspecific, control treatment. This is an important issue because a previous treatment when compared with attention-placebo control groups did not show significant differences (Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999). On the other hand, treatments compared with wait-list control groups have shown differences (Kendall, 1994; Kendall et al., 1997; Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999).

In addressing the state of the literature regarding psychosocial treatment of anxiety disorders in children, Turner and Heiser (1999) reported that there were nine randomized controlled trials, seven of which used a form of cognitive-behavior therapy. Some of these studies (Barrett et al., 1996; Kendall, 1994; Kendall et al., 1997; King et al., 1998; Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999) compared active interventions with a wait-list control group. In each case, the active intervention worked better than nothing at all. Another group (Last, Hansen, & Franco, 1998; Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999) compared their interventions with an attention-placebo control group. In each of these cases, there was no difference between the active intervention and the attention-placebo control group.

A more recent report that was not included in the Turner and Heiser (1999) review, Tracey et al. (1998), compared a psychosocial intervention (CBGT-A) for adolescent social phobia to CBGT-A plus four sessions of parental involvement. There was no difference favoring the addition of parent involvement. One limitation of this report is that the comparison with a third cell in the study, a wait-list control group, was not reported. Therefore, it is unclear whether the reported within-treatment differences were

superior to no treatment. However, the data reported in this investigation clearly indicate that the treatment used in this study (SET-C) was statistically superior to the active, nonspecific comparison group (Testbusters). Although children receiving Testbusters also were (a) seen twice per week for 12 weeks, (b) were assigned daily homework assignments, and (c) engaged in group activities that were very similar to the exposure sessions for those treated with SET-C (reading in front of a group, writing on the blackboard, and reciting aloud), they did not show significant improvement. There was no peer generalization component in the Testbusters condition, but it is unlikely that this one particular difference could explain the results of this study. That Testbusters indeed is a potent intervention is attested to by the fact that approximately 20% of the children with social phobia who were treated with Testbusters achieved honor roll status for the first time after completing the Testbusters program. Thus, this is the first study, to our knowledge, to report a difference in treatment outcome between an active treatment group and a control condition (other than a wait-list control) for childhood anxiety disorders and, more specifically, for social phobia.

The assessments conducted in this study included some by those unaware of the child's treatment assignment (e.g., independent raters unaware of group membership) or even treatment status (e.g., pretreatment or posttreatment independent evaluator ratings). An additional strategy often used in the assessment of child psychopathology is the use of teacher ratings, which provide another source of independent information. We attempted to include teacher ratings in this study, but compliance was only about 50%. Furthermore, some children completed the treatment program during the summer, and teachers were not available to complete the ratings. However, the use of independent evaluators to make clinical ratings as well as behavioral raters unaware of treatment condition or phase of the assessment makes up for this potential limitation.

Some may view the lack of follow-up data for the Testbusters condition as a significant limitation of this study. Although there might be some scientific advantage to following children "untreated" for an additional 6 months, it is our opinion that this is outweighed by the ethics of not providing a promising treatment for children with a severe and chronic disorder (Beidel, Turner, & Morris, 1999; Davidson, 1993). Finally, SET-C consists of several components, and we are unable to state definitively if any individual aspect of the program was particularly effective or ineffective. Furthermore, because of the limited age range used in this study, it is unclear whether the particular combination of social skills training, peer generalization, and individualized exposure would be equally suited for adolescents. For example, exposure might be conducted differently depending on the patient's age, and, clearly, the content of social skills training would be different for younger and older children. However, the treatment from which SET-C is derived (SET) was developed for adults. This suggests that similar treatments are useful for the treatment of social phobia across various age groups. After reviewing the extant literature, Beidel and Turner (1998) concluded that a program encompassing exposure and social skills training was most efficacious for adult social phobics, and this appears to apply to young children as well.

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