

Transitory shyness is particularly common among very young children and a large segment of the population will experience symptoms of social anxiety at some point across the lifespan. Fortunately, such episodes pass without major incident for most individuals. For others, the experience of social anxiety is pervasive and leads to substantive distress and impairment. Social anxiety disorder (also known as social phobia) is defined as 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, 2000, p. 456). The classic symptom constellation includes heightened physiologic reactivity (e.g., increased heart rate and muscle tension), cognitions reflecting negative evaluation (e.g., “Everyone is looking at how stupid I am”), and overt escape and avoidance and avoidance behaviors (e.g., school refusal, reticence to speak), although primary response modes vary considerably across individuals. As school is children’s primary social venue, it is not surprising that the school context is a significant source of distress for children and adolescents with social anxiety disorder (Essau, Conradt, & Petermann, 1999; Strauss & Last, 1993). As children often do not have the freedom to avoid school and other

feared social situations, parents and teachers may misinterpret clinging and crying as oppositional behavior rather than as a symptom of social anxiety, and as such appropriate intervention is delayed or denied. For those for whom more covert cognitive or physiologic modes predominate, parents may be unaware of their child’s distress until the condition becomes quite severe and comorbid conditions such as depression and substance abuse begin to wreak havoc.

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## Epidemiology

Lifetime prevalence estimates for social anxiety disorder range have ranged from 2.4 to 13.3% depending on the sampling procedures and methods of assessment employed (Chavira, Stein, Bailey, & Stein, 2004; Kessler et al., 1994; Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992). Within community samples, higher rates of social anxiety symptoms have been found for girls (Epkins, 2002; Morris & Masia, 1998), but distribution of social anxiety across men and women in clinic samples has been reported as approximately equal (Last, Perrin, Hersen, & Kazdin, 1992; Turner & Beidel, 1989).

Early work in the area of social phobia frequently cited the mean age of onset as early- to mid-adolescence (Öst, 1987; Turner, Beidel, Dancu, & Keys, 1986), despite common reports from adults seeking treatment that they had experienced for as long as they could remember. It is possible that the increased social demands and

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capacity for self-awareness that occur during adolescence may result in symptoms of shyness crossing the threshold into social anxiety disorder during this developmental stage. It also may be the case that ages of onset estimates have not been entirely accurate due to the relatively limited research on the expression of social anxiety in young children, which in turn may be due to the paucity of developmentally appropriate assessment measures (see Morris, Hirshfeld-Becker, Henin, & Storch, 2004).

Social anxiety disorder is frequently comorbid with other psychiatric conditions, particularly generalized anxiety disorder and depression (Beidel, Turner, & Morris, 1999; Chavira et al., 2004; Schneier et al., 1992). Children and adolescents who experience extreme levels of social anxiety have lower levels of peer group acceptance and fewer close friendships (Greco & Morris, 2005; La Greca & Lopez, 1998; Morris, 2001), which may help set the stage for a downward spiral leading to depression. Adolescents may turn to alcohol and other substances in attempt to self-medicate and feel less inhibited in social situations – and their subsequently more socially gregarious behavior is reinforced by peers which in turn leads to increased substance use (see Essau et al., 1999; Kushner, Sher, & Beitman, 1990). Social anxiety disorder is likely to be a chronic condition in the absence of direct intervention (Yonkers, Dyck, & Keller, 2001).

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## Causal Factors

As with most psychiatric disorders, no single causal path has been identified for social anxiety disorder. Rather, multiple authors have provided explanatory models for the development of social anxiety in which the interaction of multiple factors is paramount (e.g., Morris, 2001; Rapee, 2001). Primary proposed risk factors include genetic predisposition, physiologic reactivity, parenting style, and peer socialization. High familial loadings have been found for social anxiety disorder (Fyer, Mannuzza, Chapman, Liebowitz, & Klein, 1993). Behavioral inhibition (a tendency to approach new situations with restraint, avoidance, and distress) is thought to have an inherited

biological component and higher rates of social anxiety disorder have been found among children previously classified as behaviorally inhibited (see Hirshfeld-Becker et al., 2008, for review).

A growing literature base has implicated the role of parenting in the development and maintenance of anxiety disorders in general, and social anxiety disorder in particular (see Hudson & Rapee, 2001, and Masia & Morris, 1998, for more extended discussion). Children and adults with social anxiety have described their parents as engaging in overcontrolling behavior and restricting social interaction (Anhalt & Morris, 2008; Greco & Morris, 2002; Rapee & Melville, 1997). Laboratory investigations have found parents of socially anxious children to demonstrate more controlling and rejecting behavior toward their children during joint interaction tasks than parents of nonanxious children (Greco & Morris, 2002; Hummel & Gross, 2001; Rork & Morris, 2009). Parents of anxious children have been found to model threat interpretations to ambiguous cues and to provide and reinforce avoidant solutions in response to hypothetical social scenarios (Barrett, Rapee, Dadds, & Ryan, 1996; Barrett, Shortt, & Healy, 2002; Dadds, Barrett, & Rapee, 1996).

Outside the home, the quality of children's peer relationships has been found to be associated with social anxiety, though it is often difficult to ascertain whether lowered peer acceptance is a cause or consequence of anxiety-related behavior (Erath, Flanagan, & Bierman, 2007; Greco & Morris, 2005; La Greca et al., 1988; La Greca & Lopez, 1998; Morris, 2001; Storch, Masia-Warner, Crisp, & Klein, 2005). Some research has suggested that children and adolescents who are socially anxious underestimate their own level of social skill, and focus – to their detriment – on perceived errors in social behavior (Chansky & Kendall, 1997; Higa & Daleiden, 2008; Inderbitzen-Nolan, Anderson, & Johnson, 2007; Vasey, Daleiden, Williams, & Brown, 1995).

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## Assessment of Social Anxiety in Children and Adolescents

Proper assessment is necessary not only for purposes of diagnostic classification but in order to generate useful targets of change for inclusion

in treatment plans – and to adequately evaluate treatment outcome. When evaluating children and adolescents, it is important to obtain information from multiple sources. Due to the covert nature of many aspects of social anxiety, parents should not be considered the gold standard for all information about their children. Consideration must be given to the context in which behaviors occur. For instance, teachers and peers may be the most appropriate sources of information regarding a child's performance in school and interactions with peers. As a multi-contextual assessment strategy will help guide case conceptualization and treatment planning, the most commonly employed methods for the assessment of social anxiety in children and adolescents are presented briefly below.

*Anxiety Disorders Interview Schedule for DSM-IV Child Version (ADIS-C/P; Silverman & Albano, 1996).* The ADIS-C/P provides thorough coverage of anxiety disorder symptom clusters and also screens for the presence of affective and disruptive behavior disorders. The social phobia section of the ADIS-C/P asks the child (and parents – who are interviewed separately from the child) to provide fear, avoidance, and interference ratings across 13 social and performance situations. Intensity ratings are included to assess the extent to which social fears interfere with daily functioning.

*Self-report measures:* Self-report questionnaires are integral to the assessment of children over 8 years of age. The most extensively validated and widely used self-report measures of social anxiety are the Social Anxiety Scale for Children-Revised, the Social Anxiety Scale for Adolescents, and the Social Phobia and Anxiety Inventory for Children (SPAI-C).

The Social Anxiety Scale for Children-Revised (SASC-R; La Greca & Stone, 1993) is a 22-item measure comprised of three factors: fear of negative evaluation, social avoidance and distress with new or unfamiliar peers, and more generalized social avoidance and distress. The Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998) parallels that of the SASC-R. Scores on the SASC-R and SAS-A have been found to correlate with peer sociometric data

and measures of self-esteem. Recent research conducted by Reijntjes, Dekovic, and Telch (2007) found SASC-R scores were predictive of negative response biases and lower approach behavior among children playing a videogame task with peer confederates.

The SPAI-C (Beidel, Turner, & Morris, 1995) consists of 26 multi-part items assessing overt behavior, thoughts, and physiologic responses across a range of potentially fear-inducing situations. Beidel, Turner, Hamlin, and Morris (2000) have provided data on the external and discriminative validity of the measure. The SPAI-C has been shown to correlate with independent observer ratings of anxiety and effectiveness during behavioral performance tasks, as well as with children's ratings of their own anxiety and distress. Importantly, the measure has been able to successfully discriminate children with social anxiety disorder from normal controls and those with other anxiety disorders. Psychometric properties of the SPAI-C also have been established with cross-cultural samples (e.g., Aune, Stiles, & Svarva, 2008).

Several investigations have examined the association of the SPAI-C and SASC-R and have found that the measures appear to assess overlapping, but not identical constructs (Epkins, 2002; Morris & Masia, 1998). General findings have been that the SPAI-C has greater specificity and selectivity for diagnoses of social anxiety disorder. However, as the SASC-R typically takes less time to administer than the SPAI-C, the SASC-R may be preferable in large-scale screening investigations.

*Behavioral observation and performance tasks:* Direct observation of behavior is a critical component of the assessment of social anxiety and associated social skills. Observation of children in the natural setting (e.g., school classroom or on the playground during recess) may be particularly enlightening if one is able to move beyond clinic walls. However, relevant analog or role-play tasks may readily be conducted within office confines.

*Peer report:* Peer nominations or ratings of social status may be particularly useful in gauging generalization of treatment effects. Classic sociometric nomination procedures categorize children along two dimensions: social preference (how much a

child is liked or disliked by his or her peers) and social impact (the child's visibility within the peer group; see Coie, Dodge, & Coppotelli, 1982). Due to the effort required to obtain peer reports within school settings, such data typically are included only in the context of extended research investigations and seldom systematically collected by clinicians engaged in routine treatment.

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## Psychological Treatment of Social Anxiety

### Theoretical Models Underlying Behavioral and Cognitive Behavioral Treatment

Current empirically supported treatments for social anxiety have their roots in the historical work on classical conditioning and operant learning conducted by John Watson and B.F. Skinner. Watson's case study of "Little Albert" (Watson & Rayner, 1920) illustrated how fear and anxiety may develop through the pairing of aversive and neutral stimuli, which may then rapidly extend to other associated stimuli. Accordingly, the classical conditioning paradigm has been put forth as one explanation for the acquisition and generalization of the heightened physiological arousal experienced by children with anxiety disorders.

In his work on operant conditioning, Skinner emphasized that behavior is learned as a function of its consequences (Skinner, 1953). Anxiety-related responding (e.g., avoidance) will increase if followed by a pleasurable event (positive reinforcement) or the removal of an aversive stimulus (negative reinforcement). All children experience normal, developmentally appropriate fears which are relatively limited and decrease over time (King, Muris, & Ollendick, 2005). Young children may whine, cry, or engage in oppositional behavior in attempt to escape or avoid a feared stimulus or situation. In an attempt to comfort their distressed child, parents may inadvertently reinforce inappropriate fearful or avoidant behavior, which may then lead to more persistent expression of fear and anxiety. In the case of social anxiety, parents who allow their child to

refuse to participate in social activities with same-age peers, or to stay home from school in order to avoid the distress of an oral spelling bee, are strengthening the child's avoidance behavior and limiting contact with contingencies that ultimately will serve to reduce the anxiety response.

Clearly, both classical and respondent approaches have a place in furthering our understanding of anxiety. Mowrer (1947, 1960) proposed a two-factor learning theory that serves to integrate the two paradigms. To summarize, upon exposure to an aversive event the child responds with increased physiological reactivity and subjective distress. This uncomfortable physiological arousal then becomes associated with previously neutral stimuli present at the time (including external environmental stimuli and internal cognitive cues that may serve as reminders of the aversive event). As this state of heightened physiological arousal is aversive for the child, escape from associated stimuli is negatively reinforced through reduction of arousal – increasing the likelihood of subsequent avoidance behavior. In a vicious cycle, extended avoidance further reduces the likelihood that the child will develop the necessary skills to manage arousal and anxiety in the future.

Following the early behavioral work on conditioning and learning, later theorists such as Albert Ellis and Aaron Beck sought to provide more focus on cognitive factors underlying anxiety. The basic premise of most cognitive models is that anxiety stems from a response bias in which an individual overestimates the probability of threat in their environment and underestimates their ability to cope with the situation (Beck, 1976; Ellis & Harper, 1975). Children with social anxiety may engage in self-talk emphasizing negative evaluation and embarrassment (e.g., "What if I mess and they all laugh at me?").

While at first glance behavioral and cognitive perspectives on the development and maintenance of anxiety disorders may appear in conflict, many contemporary theorists have noted that it is not necessary to treat cognitions as a distinct class in that the same principles of learning apply to cognitions as to physiological and overt behavioral responding. The more relevant question really lies with which approach to treatment will

be most effective for which individuals. As such, it is important to more carefully consider the therapeutic mechanisms by which the components of various psychological treatments for social anxiety exert their effects.

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## Behavioral and Cognitive Behavioral Treatment Components

Behavioral and cognitive behavioral approaches to the treatment of social anxiety in children and adolescents have received strong empirical support. As most treatment programs have included one or more of the following components, these frequently implemented techniques will be covered briefly before the research findings from specific treatment packages are reviewed.

*Exposure therapy:* Ample empirical evidence suggests that exposure may be the key component in the successful treatment of anxiety disorders. Exposure-based treatments are based on the extinction paradigm within classical conditioning. Essentially this involves having the child face the feared stimulus or situation for a sufficient period of time for anxious physiological arousal to diminish. Through repeated presentation of feared stimuli in the absence of any real adverse consequence, the child comes to master their own anxiety.

Exposure-based techniques include flooding, graduated exposure, and systematic desensitization. Flooding involves sustained exposure to fear stimuli (in vivo or imaginally), whereas graduated exposure refers to progressive in vivo exposure to feared stimuli. While flooding has been used with particular success in the treatment of adult PTSD, it is less frequently employed in the treatment of social anxiety in children and adolescents – in part due to the generalized complexity of social stimuli central to social anxiety and to the perception that graduated exposure is less stressful for child clients. Due to its efficacy and relative ease of administration, graduated exposure has become a standard component of many treatment protocols for social anxiety.

In contrast to flooding and graduated exposure techniques, systematic desensitization requires

that the child first masters relaxation training. Once the child is in a relaxed state, the therapist presents items from the child's fear hierarchy. There is no strong empirical evidence to suggest that the inclusion of relaxation training yields any incremental gain to the success of exposure in the treatment of social anxiety, and some theorists would contend that use of relaxation or distraction strategies actually may impede the process of extinction. However, some therapists may find that the process of relaxation training may help establish rapport which in turn may foster cooperation among extremely fearful children during subsequent exposure sessions.

*Contingency management:* Contingency management entails the provision of specific consequences for the child engaging in specific target behaviors. This typically involves working closely with the child's parents (and possibly teachers) to develop contracts outlining the manner in which reinforcement will be delivered for the performance of specific behaviors. Contracts often include a response cost in which points or privileges may be lost for failure to meet a specified goal. For example, a contract targeting social interaction may state: "If Alex joins a group activity with his peers during recess on three of five school days, the family will go to a movie of his choice on Saturday afternoon. In addition, if Alex tries to avoid attending school on any day, he will forfeit his allotted television time for two days." Contingency management contracts can be particularly useful in providing a system of reinforcement for the completion of between-session homework assignments employed in conjunction with graduated exposure treatment plans.

*Social skills training (SST):* Social skills deficits commonly have been implicated in the presentation of social anxiety in children and adolescents (Beidel et al., 1999; Spence, Donovan, & Brechman-Toussaint, 1999). Children who manifest extreme shyness and social avoidance from a very early age may miss out on opportunities to learn age appropriate social skills. Real or perceived social skills deficits may then lead to heightened anxiety in social situations. SST programs



generally include coaching, modeling, and social problem-solving components. Common skills covered in such programs include peer group entry and exit strategies, conversational skills, assertiveness, and developing and maintaining friendships. SST components have been included in several of the empirically supported treatments for social anxiety discussed later in this chapter.

*Peer modeling and peer-pairing:* Peer relationships are central to social and emotional development. Interaction with peers provides a crucial context for the learning of social skills and emotion regulation. Children who are isolated from their peers are at increased risk for chronic social anxiety and other forms of psychopathology. Consequently, the incorporation of peers in the treatment of social anxiety may be of important benefit. Peer-helper interventions involve the selection and training of socially skilled peers who model desired social behavior and administer reinforcement to the target child. In contrast, peer-pairing interventions merely provide strategic opportunities for the target child to engage in joint activities with a more socially skilled peer (with no formal training required of the peer). One advantage of peer-pairing is that it is relatively easy to implement within activities occurring in the child's natural environment, thus allowing for enhanced generalization. Notably, simple peer-pairing interventions have been shown to increase positive social interaction and sociometric status among peers (e.g., Morris, Messer, & Gross, 1995).

tied to fear of negative evaluation ("I'm nobody. I want to ask Erika to the prom but I know she will say no ... then everyone will make fun of me ... and no one will ever go out with me").

Cognitive restructuring typically is combined with modeling and reinforced practice, and as such is rarely implemented as a purely cognitive procedure. Empirical findings have been mixed regarding the incremental utility of using exposure and cognitive restructuring in combination. With respect to treatment outcome, the benefits of cognitive restructuring tend to be more pronounced for self-report data than for direct measures of behavioral change (e.g., observation and behavioral performance tasks). In related research, Parr and Cartwright-Hatton (2009) conducted a study of 36 adolescents with social anxiety in which one group was provided video feedback following a speech task and the other group was not. Individuals in both groups were then required to engage in second speech task and re-rate their own performance. Two same-aged peers also independently watched the speech videos and rated the performances. Adolescents who received video feedback reappraised their performance more positively, reported less anticipatory anxiety prior to the second speech, and greater expectations for success prior to the second speech than those who did not receive video feedback. However, there was no change in peer ratings of performance from the first speech to the second speech for either group.

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## Cognitive Restructuring

The term cognitive restructuring encompasses a variety of techniques intended to alter maladaptive thinking patterns, increase the frequency of positive self-talk, and enhance self-concept. Cognitive restructuring techniques require that the client have sufficient metacognitive and logical reasoning skills to engage in formal problem solving. As such, cognitive restructuring techniques are not likely to be effective with very young children. In the treatment of adolescents with social anxiety, cognitive restructuring often is employed to target irrational self-statements

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## Multi-Component Programs for the Treatment of Social Anxiety

*Cognitive behavioral group treatment for adolescents (CGBT-A):* CGBT-A initially was designed as a 16-week treatment program consisting of psychoeducation, skill building, cognitive restructuring, and exposure to socially distressing or fearful situations. In an uncontrolled pilot investigation, Albano, Marten, Holt, Heimberg, and Barlow (1995) reported 3- and 12-month follow-up data for five adolescents diagnosed with social phobia, four of whom were reported as diagnosis free at both follow-up evaluations. In a subsequent investigation by Hayward et al. (2000),

35 adolescent girls were assigned to CGBT-A or waitlist control conditions. Significantly fewer adolescents in the treatment condition met diagnostic criteria for social phobia following intervention. However, no differences between groups were found at 1-year follow-up.

More recently Herbert et al. (2009) have reported results from a randomized controlled trial comparing three forms of treatment: (a) a 12-week group treatment program (G-CBT) reported as similar to that of CGBT-A, (b) individual CBT, and (c) group psychoeducational supportive therapy. Large effect sizes were yielded for all three treatments. Treatment condition was not related to symptom reduction as measured by self-reports (SPAI-C, SAS-C) or clinician severity ratings (CGI-S). At treatment completion, there were no significant group differences on treatment responder criteria (with recovery rates of 16–29%). However, at the 3-month follow-up assessment, greater treatment response (54%) was observed for adolescents who completed the course of G-CBT. Significant limitations of the study include the relatively small initial sample size (23–26 per group), a 29% treatment drop-out rate, and further attrition of 27% for the final assessment (follow-up data were obtained for only 13 adolescents in the G-CBT group).

*Social effectiveness therapy for children (SET-C):* Beidel, Turner, and Morris (2000) published the first randomized controlled trial of behavioral treatment for social phobia in pre-adolescent children. In contrast to “cognitive behavioral” treatment programs such as CGBT-A, SET-C does not include a cognitive restructuring component. SET-C is a 12-week behavioral intervention that incorporates parent education, group SST, peer generalization, and individual graduated in vivo exposure components. Instruction, modeling, behavior rehearsal, feedback, and social reinforcement are used to teach and reinforce appropriate social behavior. A unique and essential component of SET-C is the use of peer interaction experiences (age-appropriate group recreational activities with peer facilitators) to assist in the generalization of social skills to situations outside the clinic. Sixty-seven children (aged 8–12 years) were randomized to SET-C or an active treatment

for improving test taking and study skills. Children in the SET-C group demonstrated statistically and clinically significant improvements across multiple domains (including self-reported anxiety, independently observed social skills, and adaptive functioning in daily situations) and gains were maintained 6 months posttreatment. Notably, 67% of children who participated in the SET-C program no longer met diagnostic criteria for social phobia following treatment compared to only 5% of those receiving the active control treatment.

Extensive follow-up data have been reported for SET-C. Beidel, Turner, Young, and Paulson (2005) provided results of a 3-year follow-up assessment that included 90% of children who completed the original controlled trial of SET-C. Seventy-two percent of these children (now aged 11–18 years) no longer met criteria for social anxiety disorder, a significant increase from the 62% who were diagnosis free at the end of treatment. No participants had sought additional intervention following the completion of SET-C, thereby supporting the durability of treatment gains. At 5-year follow-up, 25 SET-C completers (now aged 13–20) were reassessed and compared to a matched nonclinical sample to determine long-term treatment effects (Beidel, Turner, & Young, 2006). None of the individuals had sought pharmacological or psychological treatment after completing SET-C, yet 80% no longer met criteria for social anxiety disorder (a recovery rate that continued to climb from posttreatment through extended follow-up). Comparing treatment responders to the matched nonclinical controls, there were no differences in self-report, parent report, or observation of social skill – thus demonstrating meaningful and lasting change for these formerly socially anxious children.

Baer and Garland (2005) conducted a pilot investigation in which they substantially modified the SET-C protocol to create a simplified treatment for use in community psychiatric clinics. Twelve adolescents with social phobia were assigned to treatment or wait-list control groups. Active treatment consisted of 12 sessions led by three co-therapists. The 90-min sessions were split into two parts: (a) social skills and (b) behavioral exposures. In contrast to SET-C, the program did not include peer generalization sessions, did

not make use of a behavioral reward system, and implemented behavioral exposures in a group format rather than the individual therapist directed exposure component of SET-C. In further contrast, one session included cognitive restructuring strategies. Participants were encouraged to find peer or family “coaches” who could help with exposure practice in the natural environment, but this aspect was not structured with the therapists. Peer volunteers from a local high school assisted in a limited number of in-session group exposure activities. Following intervention, 36% of adolescents in the treatment group no longer qualified for a diagnosis of social phobia, while no members of the waitlist group demonstrated such improvement. Although reported effect sizes were smaller than those obtained with the SET-C, the authors note that this modified treatment may be more easily transported to community settings.

*School-based intervention:* Masia et al. (2005) reported results for 42 adolescents with social anxiety disorder who were randomized within their schools to Skills for Academic and Social Success (SASS) or a wait-list control condition. SASS, based in part on the SET-C and CGBT-A programs, consisted of 12 in-school sessions including psychoeducation, cognitive restructuring, SST, exposure, and relapse prevention; two individual problem-solving meetings; four unstructured social events; two psychoeducational parent meetings; and two brief psychoeducational teacher meetings. At treatment completion, 67% of adolescents completing SASS no longer met criteria for social anxiety disorder, compared with only 6% in the wait-list control condition.

In further work with the SASS (Masia-Warner, Fisher, Shrout, Rathor, & Klein, 2007), 36 adolescents diagnosed with social anxiety disorder were randomized to 12 weeks of SASS or an attention control condition termed Educational Supportive Group Function (ESGF). ESGF included psychoeducation and general relaxation skills, but did not include SST, cognitive restructuring, exposure, or peer generalization components. SASS proved superior to ESGF (59 vs. 0% diagnosis free) with symptom improvement maintained at 6-month follow-up.

*Cognitive behavioral treatment plus parental involvement:* Given the mounting evidence that parents may play a role in the development and maintenance of anxious behavior, including parents in the treatment process may be prudent. Spence, Donovan, and Brechman-Toussaint (2000) investigated the effectiveness of a cognitive behavioral treatment (CBT) program with or without parental involvement. Fifty children diagnosed with social phobia (aged 7–14 years) were randomly assigned to CBT, CBT plus parental involvement (CBT-PI), or a wait-list control condition. CBT components included SST, relaxation, cognitive restructuring, and graduated exposure. The parent involvement component was designed to help parents model and reinforce the social skills taught in CBT, ignore anxious and avoidant behavior, encourage their child’s participation in social activities, and provide contingencies for homework completion. Parents participated in a 30-min weekly training session and also observed the children’s group sessions behind a one-way mirror. The CBT and CBT-PI interventions both included 12 weekly group sessions and two booster sessions (at 3- and 6-month posttreatment). Based on parent report, children in both active treatment groups demonstrated improvement in social skills. However, significant differences were not found for either treatment with respect to children’s total number of peer interactions or independent observer ratings of assertiveness. While CBT and CBT-PI both resulted in a decrease in social anxiety symptoms, neither yielded significant change in social behavior, thus perhaps providing support for the inclusion of peers in effort to enhance generalization to the child’s natural social environment.

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## Pharmacological Treatment of Social Anxiety

At present, the most widely prescribed pharmacologic agents for the treatment of social anxiety in children and adolescents are the class of drugs known as selective serotonin reuptake inhibitors (SSRIs). Several open-label or uncontrolled have been conducted in recent years. Isolan et al.



(2007) treated twenty children and adolescents (aged 10–17) with escitalopram (Lexapro). After 12 weeks of treatment, 65% of the intent-to-treat sample met treatment response criteria and showed significant improvement on self-report and parent-report measures. Mrakotsky and colleagues (2008) conducted an open-label pilot trial of mirtazapine (Remeron) with 18 children and adolescents diagnosed with social anxiety disorder (aged 8–17 years). A significant decrease in social anxiety symptom severity and impairment was observed after 8 weeks of treatment. Notable weight gain was observed ( $M=3.27$  kg) and four participants experienced additional side-effects (e.g., moderate sleepiness, moderate headaches, and increased depressive symptoms).

Wagner et al. (2004) conducted a large multi-center randomized placebo-controlled trial of paroxetine (Paxil) among 322 children and adolescents with social anxiety disorder (aged 8–17 years). Following 16 weeks of treatment, clinician-rated improvement was significantly greater for paroxetine (48%) than placebo (15%). Adverse side-effects were relatively infrequent and included insomnia (14.1 vs. 5.8%), decreased appetite (8.0 vs. 3.2%), and vomiting (6.7 vs. 1.9%).

March, Entusah, Rynn, Albano, and Tourian (2007) conducted a randomized controlled trial of venlafaxine (Effexor) versus placebo among 293 children and adolescents with social anxiety disorder (aged 8–17 years) who were treated across 48 academic and community clinics. Drop-out rate was 35% for venlafaxine versus 27% for placebo control. After 16 weeks, treatment response to venlafaxine was significantly larger than placebo as determined by self-report (SAS-C/A) and clinician ratings (CGI-Improvement). Notably, there were three reported cases of treatment-emergent suicidal ideation in the venlafaxine condition, with none occurring in the placebo condition.

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## Comparison of CBT and Pharmacologic Treatments

Segool and Carlson (2008) present the results of a meta-analysis in which they reviewed seven CBT trials and seven SSRI trials conducted between

1994 and 2004 for children and adolescents (aged 6–19 years) with social anxiety disorder. All evaluated CBT studies included cognitive restructuring and exposure, and the majority included psychoeducation and social skill training components. It should be noted that the authors excluded results from SET-C trials on the basis that SET-C is a behavioral intervention that does not include cognitive restructuring. Studies ranged in duration from 3 to 16 weeks. All CBT and SSRI treatments yielded moderate to large effect sizes (0.59–2.92) for reduction of social anxiety symptoms and overall impairment, with slightly larger effects for SSRIs. Gains in social competence were somewhat (but not significantly) higher for CBT than SSRI. The authors noted major limitations in drawing conclusions across studies, in part due to the lack of universally applied assessment measures.

As the Segool and Carlson meta-analysis excluded SET-C, it is important to note the findings of recent research directly comparing SET-C with SSRI treatment (Beidel et al., 2007). Children and adolescents with social anxiety disorder (aged 7–17 years) were randomized to 12 weeks of pill placebo, fluoxetine (Prozac), or SET-C. Participants in the placebo and fluoxetine conditions attended a 60-min weekly medication management and supportive counseling session by a psychiatrist. Following treatment, significantly more participants (79%) in the SET-C condition met treatment responder criteria and no longer carried a diagnosis of social anxiety disorder than those in the fluoxetine or placebo conditions (36.4 and 6.3%, respectively). With respect to improvement in social skills, SET-C resulted in significantly greater gains than either fluoxetine or placebo, which did not differ significantly from one another. Treatment gains were maintained at 1-year follow-up.

Although the empirical research base primarily has investigated the use of psychological or pharmacologic treatments in isolation from one another, clinicians and health care providers have long stressed the notion that pharmacologic treatments will be enhanced if behavioral or cognitive behavioral treatments are implemented in conjunction (see Chavira & Stein, 2002). Although not

specific to social anxiety disorder, a randomized control trial of sertraline, cognitive behavior therapy, or combined treatment (sertraline + cognitive behavior therapy) conducted with 488 children (aged 7–17 years) diagnosed with generalized anxiety disorder, separation anxiety disorder, or social anxiety disorder, found that while both sertraline and cognitive behavior therapy were superior to placebo, response rates were highest for the combined treatment (Walkup et al., 2008). Medication may reduce the physiological arousal that accompanies anxiety in relatively short order, but behavioral and cognitive behavioral interventions are more likely to result in acquisition of skills (e.g., social competence) that will generalize across settings, leading to greater maintenance and enhancement of treatment gains over the long term. More research is needed on potential differential efficacy by response modality. Another area in need of further study is that of the potential benefit of sequentially phased treatment – for instance, might initial medication be helpful in lowering arousal in severe cases to the point at which the child may be more receptive to subsequent exposure and skills-based treatments? Anecdotal reports of such strategies abound, but at present there is scant empirical data to support or refute such a practice.

## Summary

Strong empirical support is available for several multi-component programs for the treatment of social anxiety disorder in children and adolescents. Several SSRIs also have proved useful in ameliorating the condition, although the one study, which directly compared an SSRI (fluoxetine) with behavioral treatment (SET-C), demonstrated differential superiority for the behavioral intervention. More research is needed on the use of combined behavioral and pharmacologic treatment. The literature is rapidly expanding with respect to our knowledge of potential risk factors in the development of anxiety (particularly in terms of parenting) and this information is furthering the development of treatment targets and applications. The inclusion of parents and peers

in the provision of treatment is an especially exciting trend as it reflects increasing developmental sensitivity to social world of children and adolescents. As social anxiety is a relatively early onset and chronic condition, future efforts should be directed toward early intervention studies and dissemination of treatments beyond specialized academic centers. No doubt, front line clinicians will have much to offer as we work toward cost-effective treatments that may be delivered through school, home, and clinic settings to the large numbers of children and adolescents who are currently underserved.

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