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Social Anxiety Disorder in Childhood and Adolescence: Current Status and Future Directions

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This paper reviews the current status of research on the phenomenology, etiology, maintenance, assessment, and treatment of childhood and adolescent social anxiety disorder (SAD). Despite being one of the most prevalent disorders of childhood and adolescence, SAD paradoxically stands as one of the least recognized, researched, and treated pediatric disorders. The small treatment outcome literature provides preliminary support to the effectiveness of various forms of cognitive behavior therapy. The majority of studies to date, however, are limited by inadequate control conditions. Other findings include some support for the utility of parental involvement in treatment, significant advancements in outcome measures (e.g., normative comparisons, indices of naturalistic social functioning), and impressive durability of gains for the majority of treatments. Future directions are suggested, including experimental and naturalistic studies of developmental pathways and maintenance factors, the incorporation of "positive psychology" constructs (e.g., positive emotions, hope, self-control) in treatment and prevention, and the continued delineation of differences between child, adolescent, and adult manifestations of SAD.

KEY WORDS: social anxiety; social phobia; children; adolescence; cognitive behavior treatment; positive psychology.

Social anxiety disorder (SAD), also known as social phobia, is a common anxiety disorder characterized by intense fear of embarrassment, humiliation, and negative evaluation by others in social situations, and a tendency to avoid feared situations. The terms social phobia and SAD are both listed in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, (*DSM-IV*; American Psychiatric Association [APA], 1994), but a trend is underway in favor of the SAD designation (Liebowitz, Heimberg, Fresco, Travers, & Stein, 2000). The term social phobia may implicitly categorize SAD as a form of specific phobia, thereby risking trivialization of the chronic course and severe impairment associated with SAD (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992). According to Liebowitz and colleagues (2000), when SAD was originally classified as a distinct diagnostic entity in the third edition of the *DSM* "it was described as infrequent and rarely associated with meaningful impairment" (p. 191). Our more recent appreciation of the significant prevalence and impairment associated with child and adolescent SAD warrants differentiation from specific phobias. We have chosen to continue this initiative by using the term SAD throughout this paper.

Although SAD is quite common among children and especially adolescents, the vast majority of research on the disorder has focused on adult samples. The present review provides an overview of the nature of childhood and adolescent SAD, with particular emphasis on the status of empirically supported interventions. The high prevalence, seriousness, and early onset of SAD make a review of the literature on childhood and adolescent SAD timely.

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PHENOMENOLOGY

Epidemiological studies have found SAD to be the most common anxiety disorder and the third most prevalent psychiatric condition in the United States, affecting up to 13% of individuals at some point during their lifetime (Kessler et al., 1994; Last, Perrin, Hersen, & Kazdin, 1992). In contrast to most other anxiety and mood disorders, there is considerable evidence that the onset of SAD occurs at a relatively early age, with a mean onset of 15.5 years (Schneier *et al.*, 1992), and children diagnosed as young as age 8 (Beidel & Turner, 1988). Using a retrospective design, Bourdon et al. (1988) found that the majority of adults with SAD failed to recall a period when social anxiety was not present in their lives. There is some evidence that the prevalence of the generalized subtype of SAD appears to be increasing in the United States, especially among White, married, middle-class persons (Heimberg, Stein, Hiripi, & Kessler, 2000).

Recent research suggests that SAD is quite common among adolescents, with lifetime prevalence rates of between 5 to 15% of adolescents in the United States (Heimberg et al., 2000; Lewinsohn, Hops, Roberts, Selley, & Andrews, 1993) and in Germany (Wittchen, Stein, & Kessler, 1999). In a psychometric study of the NIMH Diagnostic Interview Schedule for Children (self-report version 2.3), 7.6% of children and 3.7% of adolescents met *DSM-III-R* criteria for SAD (Shaffer et al., 1996). Because the Shaffer et al. (1996) sample was not designed to be representative of the population, there is still a need to ascertain separate child and adolescent SAD prevalence rates using the evolved *DSM-IV* criteria.

Because social situations occur on a quotidian basis throughout the lifespan and are necessary to achieve goals that are both social (e.g., development of relationships) and nonsocial (e.g., job interview, participating in classes or meetings), it is not surprising that SAD leads to significant distress and impairment (Lecrubier et al., 2000). Adult SAD is associated with significantly lower levels of attainment in work, education, romantic relationships (Davidson, Hughes, George, & Blazer, 1994; Schneier et al., 1994) and subjective well being (Safren, Heimberg, Brown, & Holle, 1996/1997) compared to that in normal controls. Although there is less research available, child and adolescent SAD is associated with lower perceived social support and close relationships (La Greca & Lopez, 1998), higher levels of negative affect (NA; Beidel, 1991; Inderbitzen-Nolan & Walters, 2000), social pessimism (Albano, DiBartolo, Heimberg, & Barlow, 1995; Spence, Donovan, & Brechman-Toussaint, 1999), and rates of alcohol abuse (DeWit, MacDonald, & Offord, 1999) than in comparative control samples. Moreover, SAD follows a chronic, unremitting course without treatment (Beidel, Flink, & Turner, 1996; Juster & Heimberg, 1995).

Although current research is confined largely to adult populations and retrospective accounts of childhood, there is widespread agreement on at least two SAD subtypes. The first, nongeneralized or discrete SAD, describes individuals who fear and/or avoid a single performance situation such as giving a speech in front of an audience (Mattick & Clarke, 1998; Schneier et al., 1992). The second more extreme subtype, generalized SAD, is assigned to individuals who fear and avoid a number of commonly occurring social situations such as conversations, meeting new people, dating, or attending social gatherings (Turner, Beidel, & Townsley, 1992; Mattick & Clarke, 1998). Although no definitive relationship exists between the number of feared social situations and subtype, nongeneralized SAD tends to be associated with more confined fears, less overall impairment and distress, and lower comorbidity rates (Bruch & Heimberg, 1994; Herbert, Hope, & Bellack, 1992; Turner *et al.*, 1992). Physiological studies have found that nongeneralized SAD exhibits significantly lower cardiovascular reactivity to experimental social tasks than generalized SAD do (Heimberg, Hope, Dodge, & Becker, 1990; Levin *et al.*, 1993). Retrospective studies have found that adults with generalized SAD rate themselves as being more shy and anxious as children, and their parents as being more controlling and emotionally distant than those with nongeneralized SAD (e.g., Bruch & Heimberg, 1994). Two other adult retrospective studies support a subtype distinction in youth, as adults with generalized SAD report an earlier age of onset (preadolescence) compared to the nongeneralized subtype (around 17-years-old; Heimberg *et al.*, 2000; Mannuzza *et al.*, 1995). Despite the widespread use of these subtypes, it is quite possible that they represent arbitrary categorical distinctions of a phenomenon that is actually continuous in nature. As noted by Rapee (1995), "trying to distinguish subtypes may simply reflect arbitrary cutoffs along a continuum" (p. 45).

There are currently insufficient data on which to draw conclusions regarding SAD subtypes in childhood and adolescence. Potentially fruitful factors to be examined in evaluating subtypes for youth include symptoms, course, degree of impairment, social skill

deficits, rejection sensitivity, and the quantity and motivation for school absenteeism. Unlike adult populations who have more volition in daily life and career decisions (e.g., computer analyst vs. social worker), youth are somewhat bound by compulsory education and its inherent social environment. Class participation, public speaking tasks, the ability to ask for help when needed (i.e., assertiveness), and group athletic activities are integral to schooling. Given these interpersonal and performance situations, differences between SAD subtypes may be attenuated in childhood. As adolescents gain more personal autonomy over decisions, generalized SAD may mirror the more pervasive disruption found in adults.

Although data support the validity of SAD as a distinct clinical entity in youth (Beidel, 1991; Strauss & Last, 1993), the vast majority of children and adolescents with SAD go unrecognized by both parents and professionals, including school personnel. By definition, individuals with SAD are highly concerned about others' perceptions of them, and therefore tend not to "act out" in ways that would draw attention to themselves. Children and adolescents with SAD tend to be "invisible" and neglected in the classroom (Strauss, Lahey, Frick, Frame, & Hynd, 1988), and do not come to the attention of school personnel unless the disorder progresses to the point that they refuse to attend school (Beidel & Morris, 1995). Moreover, SAD is relatively new, only being recognized as a distinct clinical entity with the publication of the third edition of the *DSM* in 1980 (APA, 1980). Consequently, many school counselors, school psychologists, teachers, and even pediatricians are unfamiliar with the disorder (Weiller, Bisserbe, Boyer, Lepine, & Lecrubier, 1996). Most parents are similarly unaware of SAD. Because a certain degree of concern over others' perceptions and the experience of social anxiety is common, many parents simply see their children as "shy" and do not realize that they suffer from a potentially treatable anxiety disorder.

Even if recognized, the diagnosis and assessment of SAD among children and adolescents is complicated by several factors. First, youngsters' level of cognitive development influences the degree to which they are able to articulate evaluative concerns and fears of humiliation. Younger children can be expected to have particular difficulty labeling emotions and associated physical symptoms such as dizziness and rapid heart rate (Beidel & Turner, 1998; Southam-Gerow & Kendall, 2000). Developmental differences in metacognitive awareness may create difficulties for clinicians assessing the motivation behind behaviors such as school refusal, social withdrawal, and anger expressiveness. This may complicate the differentiation of SAD from school refusal disorder, depression, or externalizing disorders, especially among younger children (Beidel & Turner, 1998).

Second, the typical manifestation of SAD varies by age. Unlike adults, children and adolescents may present symptoms of irritability, crying, freezing (Albano, 1995), inflexible and rigid temperamental styles (e.g., obsessive–compulsive personality disorder features (Beidel, 1991), somatic symptoms (Faust & Forehand, 1994), and even ideas of reference (e.g., concerns of being looked at; Abe & Suzuki, 1986), which peak in the mid-teens. Younger children tend to demonstrate more crying and episodic illusions, such as being looked at and talked about by strangers (Abe & Suzuki, 1986), and greater external attributions (e.g., illusory optimism) for social failures than the self-deprecating cognitions of their adolescent counterparts (Crick & Ladd, 1993; Ishiyama, 1984). Adolescents may differ from children with SAD by presenting with externalizing problems such as fighting, truancy, and covert antisocial behavior (Davidson, Hughes, George, & Balzer, 1993). Further, adolescents with SAD mirror adults with high rates of suicidal ideation (Francis, Last, & Strauss, 1992), excessive self-focused attention in social situations (Albano *et al.*, 1995), and alcohol abuse (Clark, Bukstein, Smith, & Kaczynski, 1996). Despite the intriguing nature of these findings, they must be interpreted with caution because many of these studies were based on samples of rejected, shy, and socially withdrawn children as assessed by general symptom and sociometric measures. With the advent of psychometrically sound SAD assessment devices for youth, our understanding of developmental differences in the emotional, behavioral, and cognitive domains of SAD per se can proceed.

Third, the boundary between normal and pathological fear is often ambiguous, especially among adolescents. Adolescence is widely agreed to be a critical developmental stage of identity formation and social skill development, in which concerns about peer acceptance and body image become paramount (Petersen & Leffert, 1995; Strauss & Last, 1993). Distinguishing normal levels of such concerns from clinically significant levels can sometimes pose significant challenges for the clinician. Fourth, many adolescents with SAD are highly withdrawn when presenting to clinical settings, requiring considerable patience and skill on the part of the interviewer. Youth with SAD exhibit greater attentional focus difficulties (Albano,

DiBartolo, *et al.*, 1995; Eisenberg, Shepard, Fabes, Murphy, Guthrie, 1998) that can interfere with competent communication (Segrin & Abramson, 1994). Finally, the clinical presentation of SAD varies immensely with respect to number and types of situations feared, severity of avoidance, and degree of functional impairment. Even if identified and properly assessed, the majority of persons with SAD do not obtain treatment of any kind (Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996; Wittchen *et al.*, 1999).

As for why individuals fail to seek treatment for SAD, Olfson and colleagues (2000) found that the most commonly reported constraints included (a) no knowledge of where to obtain treatment, (b) fears of being negatively evaluated for seeking treatment, and (c) persons' beliefs in their own ability to cope with the disorder. Ironically, the very symptoms of SAD seem to interfere with the ability to obtain treatment. In terms of when individuals seek treatment, it appears that the "self-appraisal of illness severity," particularly suicidality and severe impairment (e.g., work absenteeism), is the best determinant (Olfson *et al.*, 2000). Although adults typically report an age of onset of SAD in childhood or early adolescence, those that do seek treatment typically do not do so until their late 20s to 30s (Mannuzza *et al.*, 1995).

In terms of youth with SAD, these findings are potentially alarming for three reasons: (a) children have even less understanding of social anxiety than do adolescents and adults (Darby & Schlenker, 1986); (b) parents are unlikely to know how to obtain treatment for their child, even if they recognize that he or she has a treatable disorder; and (c) the need for belongingness and peer acceptance is often more pronounced in childhood and adolescence (Hartup, 1983). Although long-term longitudinal studies are currently lacking, it is likely that early recognition and intervention of SAD may arrest the development of a chronic course of the disorder. Before discussing intervention strategies, it is helpful to review the theories proposed to precipitate and maintain SAD.

ETIOLOGY AND MAINTENANCE OF SAD

Despite the growing research literature on the phenomenology of SAD, little is known about the causes of the disorder. Most of the available studies of potential etiological factors rely on epidemiologic studies of familial risk, longitudinal studies of infants and young children, or on retrospective self-report methodologies using adult samples. Although the details vary, most etiologic models of SAD posit an interaction of biological and psychological vulnerability factors; life stress or traumatic events or both; and a vicious cycle of negative thoughts, feelings, and avoidance behaviors in the development and maintenance of excessive social anxiety (e.g., Barlow, 1988; Heimberg & Barlow, 1991). Each of these factors is briefly reviewed now.

Genetic Vulnerability

Two lines of evidence suggest a possible genetic predisposition for SAD. One large twin study found concordance rates of 24.4% for female monozygotic twins, relative to 15.3% for dizygotic twins (Kendler, Neale, Kessler, Heath, & Eaves, 1992). A second line of research involves family risk studies, in which the rates of the disorder in relatives of proband patients are compared with base rates among nonaffected control samples. Four studies (Fyer, Mannuzza, Chapman, Liebowitz, & Klein, 1993; Mannuzza *et al.*, 1995; Reich & Yates, 1988; Stein *et al.*, 1998) found increased rates of SAD among the adult relatives of proband patients. In the Stein *et al.* (1998) study, for example, first-degree relatives of affected probands had a 10 times greater incidence of generalized SAD relative to control probands. In a study of children, Mancini, van Ameringen, Szatmani, Fugere, & Boyle (1996) found elevated rates of SAD among children of adult probands diagnosed with the disorder.

Although these data are suggestive of a genetic vulnerability to SAD, it remains the case that the majority of first-degree relatives—and even the majority of monozygotic twins of affected probands do not have the disorder. Other factors must therefore be involved in the etiology of SAD. As brain imaging and genotyping techniques continue to advance, serotonin transporter proteins (e.g., 5-HT and 5-HTT) and the density of dopamine receptors have been suggested to be involved in the pathogenesis of SAD and generalized anxiety (Schmidt *et al.*, 2000; Tiihonen *et al.*, 1997).

Temperamental Inhibition

Several studies suggest that a temperamental style characterized by shyness, social inhibition, and avoidance in childhood may be a risk factor for the later development of SAD (Stemberger, Turner, Beidel, & Calhoun, 1995; Turner *et al.*,

1990). Although the mean age of onset of SAD falls around 15 years of age, characteristics of shyness may manifest themselves as early as 21 months (Kagan, 1989). Kagan uses the term behavioral inhibition (BI) to describe the predisposition of certain infants and young children to withdraw from novel settings, people, and objects. These children are described as irritable and sleepless as infants, anxiety-prone as toddlers, and hypervigilant and withdrawn from childhood to adulthood (Kagan, Reznik, & Snidman, 1988). Considerable evidence links BI to the later development of anxiety disorders (Biederman *et al.*, 1993). Hayward and colleagues (1998) followed a sample of 2,242 high school students for a 4-year period, and found that students retrospectively reporting a history of childhood BI were four times as likely than behaviorally uninhibited students to develop SAD. In another study of consecutive adult admissions to an outpatient anxiety disorders clinic, Van Ameringen, Mancini, and Oakman (1998) found that individuals with SAD rated themselves significantly higher in retrospective BI than those with all other anxiety disorders.

In the most direct test of the developmental relationship between BI and later SAD to date, Schwartz, Snidman, and Kagan (1999) evaluated 79 13-year-olds who had been classified as BI or as uninhibited in the second year of life. Relative to their uninhibited peers, adolescents classified as toddlers as high in BI were more likely to have generalized social anxiety, but not more likely to have specific fears, separation anxiety, or performance anxiety. In addition, adolescents previously classified as BI made fewer spontaneous comments to an experimenter during an assessment battery. Although present for both genders, these results were especially pronounced for adolescent girls.

BI may be related to both the high negative affect (NA) and low positive affect (PA) that has been shown to characterize SAD (Brown, Chorpita, & Barlow, 1998; Watson, Clark, & Carey, 1988). Behaviorally inhibited children possess a low threshold for physiological reactivity, and high NA is characterized by excessive physiological reactivity, fear, and uneasiness around novel situations and people. Low PA is proposed to stem from the avoidance of novel situations and people. Novelty has not only been demonstrated to induce anxiety and agitation, presumably because of an evolutionary-based preparedness for potential danger, but also basic positive emotions such as interest, excitement, and joy (Izard & Hyson, 1986; Spielberger & Starr, 1994). Because BI children are more cautious and reticent, they are less likely to engage in behaviors designed to explore their surroundings, including other people. Such exploratory behavior is generally experienced as highly enjoyable (Fredrickson, 1998; Mikulincer, 1997). Of course, not all BI children go on to develop SAD. For example, in the Schwartz *et al.* (1999) study, only 34% of the adolescents who were originally classified as behaviorally inhibited as toddlers had SAD at age 13. These results suggest that other factors may lead to the expression of the disorder in otherwise predisposed individuals. Specific life experiences are often theorized to represent just such triggers (Stein, 1998).

Environmental Experiences

Normal developmental tasks of late childhood and throughout adolescence include becoming autonomous from the family of origin, integration of gender appropriate behaviors, the emergence of romantic and sexual interests, and the development of an integrated sense of self that includes one's role in social structures and hierarchies (Buhrmester, 1990; Kelly & Hansen, 1987; Ladd, 1999). The life experiences that are most often theorized to be involved in the development of SAD are maladaptive familial environments, particularly high levels of parental criticism and overcontrol (Bruch & Heimberg, 1994; Whaley, Pinto, & Sigman, 1999), peer rejection and victimization experiences (LaGreca & Lopez, 1998; Slee, 1994; Vernberg, Abwender, Ewell, & Beery, 1992), and traumatic conditioning after experiencing panic in a perceived social-evaluative situation (Barlow, 1988; Hofmann, Ehlers, Roth, 1995). Each of these experiences has the potential to set in motion negative feedback loops involving anxiety, avoidance behaviors, and potential deficits in social competence.

Parents are hypothesized to affect the potentiality of SAD in their child or adolescent by either (a) a genetic predisposition to general NA; (b) familial environments that are rejecting, emotionally distant, or overprotective and possessive; or (c) modeling negative and cautious beliefs about the level of danger in the world, and the overvalued importance of others' opinions (Chorpita, Albano, & Barlow, 1996; Ginsburg, Silverman, & Kurtines, 1995; for a more extensive review see Beidel & Turner, 1998). According to retrospective studies of child-rearing practices, adults with SAD tend to perceive their parents as having encouraged social isolation and avoidance, engaging in little to no social activities with relatives and friends (Bruch & Heimberg, 1994; Bruch, Heimberg,

Berger, & Collins, 1989). Moreover, these parental fears were significantly more likely to be attributed to social anxiety concerns, including undue importance and concern about the opinions of others, than to agoraphobic concerns (Bruch & Heimberg, 1994). In another retrospective study, adults with excessive social anxiety were significantly more likely than agoraphobic and nonanxious controls to perceive parents as more overprotective, less warm, and less encouraging of autonomy (Parker, 1979). In addition, Davidson, Hughes, *et al.* (1993) reported that parental divorce prior to age 10 was more prevalent in adults with SAD than in unaffected controls. These studies are consistent with the hypothesis that the developmental shift from a reliance on parental guidance and nurturance to self-regulation and the formation of intimate peer relationships can be delayed or enhanced by parental behaviors. Parenting behaviors that place excessive reliance on seeking the approval of others or that are deficient in communication and emotional expression (Melfsen, Osterlow, & Florin, 2000) may contribute to a child's development of low sociability and shyness. By not exposing their children to novel social situations, anxious parents may transmit their own social fears to their children, contributing to the development and maintenance of social anxiety (Bruch, 1989). Prospective, longitudinal research is needed to explore the relationship between parenting factors and the development of child and adolescent SAD.

In one of the few prospective etiological studies of social anxiety, Vernberg *et al.* (1992) found that socially anxious adolescents who relocated to a new school had more difficulty making new friends than did nonsocially anxious adolescents. High social anxiety significantly predicted less frequent interactions and less intimacy during interactions, likely factors in inhibiting the development of friendships. Interestingly, rejection experiences early in the year were predicted by social fears with familiar peers (e.g., "I feel shy even with kids I know very well") but were not predicted by social fears relating to unfamiliar peers and novel situations (Vernberg *et al.*, 1992). According to these findings, the social distress and impairment experienced by socially anxious adolescents existed above and beyond the difficulties of being the new kid in school having to establish a new social network.

For adolescents, perceived social traumas, including flubbing a speech in class, being bullied or victimized by peers, or being publicly rejected by a romantic interest, are believed to contribute to the full-blown expression of a predisposition to (social) anxiety-proneness (Albano & Barlow, 1996). Although there is minimal research in the area, both peer teasing and bullying have been shown to be positively associated with social anxiety and social avoidance in boys and girls (Asher & Coie, 1990; Slee, 1994). In a retrospective study of shy adults, a history of being teased, bullied, and ridiculed were all designated by participants as critical childhood incidents in the formation of their fears and avoidance patterns (Ishiyama, 1984). From an evolutionary perspective, social anxiety may in fact be an adaptive warning system designed to ensure the strength of social bonds, alarming us when our behaviors or surroundings (e.g., social group) increase the likelihood of social threat (Miller & Leary, 1992). In theory, the social warning system should alert us to stop negative behaviors with higher potential for rejection and isolation, and increase prosocial behaviors that promote the development and sustenance of social support networks. However, this warning system can go awry and lead to the expression of psychopathology when situational social anxiety is coupled with any of the aforementioned biological and/or psychological risk factors for anxiety disorders.

Maintenance of SAD

Three factors hypothesized to be involved in the maintenance of SAD are cognitive biases, deficits in social skills, and operant conditioning. According to cognitive models (e.g., Beck, Emery, & Greenberg, 1985; Clark & Wells, 1995; Musa & Lépine, 2000), the core of SAD is a strong desire to make a favorable presentation to others coupled with the perceived inability to do so. These individuals hold beliefs that they will predictably behave in ways that will elicit rejection or negative evaluation from others. These beliefs are primed by perceived social evaluative situations, resulting in negative self-statements and preoccupation with one's social performance (Hartman, 1986), which in turn lead to physiological and behavioral manifestations of anxiety. Physiological reactions such as blushing, sweating, and tachycardia are then interpreted as evidence of negative performance, thereby further increasing anxiety. Excessive attentional resources are allocated to these negative thoughts, somatic arousal, and to cues that one is being evaluated negatively by others (Hope, Gansler, & Heimberg, 1989). According to cognitive models, this

self-focused attention then interferes with satisfactory social functioning.

Deficits in social skills have also been theorized to contribute to the maintenance of SAD. Several studies have examined the adequacy of social behavior among adults with SAD, and have found mixed results. Some studies have found poorer performance relative to nonanxious controls (e.g., Pilkonis, 1977), whereas others have not documented such differences (e.g., Rapee & Lim, 1992). Both Spence *et al.* (1999) and Beidel, Turner, and Morris (1999) found adolescents with SAD to be significantly more anxious and to demonstrate poorer social performance on behavioral assessment tasks relative to nonanxious controls. Similarly, in a test of peer relationships using a sociometric peer-nomination methodology, Strauss and colleagues (1988) found that socially anxious children were significantly more likely to be neglected and less likely to receive positive ratings than both conduct-disordered and normal children. Likewise, Walters and Inderbitzen (1998) found that submissive children (defined through sociometric nomination) reported greater social anxiety than children nominated as cooperative, friendly dominant, or hostile dominant. Ginsburg, La Greca, and Silverman (1998) found that high socially anxious children reported more negative peer relations at school relative to low socially anxious children. In a sociometric study of young adolescents, Inderbitzen, Walters, and Bukowski (1997) found that rejected and neglected students reported more social anxiety than those classified as average, popular, or controversial. Finally, children and adolescents with SAD demonstrate sensitivity to rejection experiences, reporting fewer friendships, fewer close relationships, and less social support and acceptance from peer classmates (La Greca & Lopez, 1998).

These results are often interpreted as evidence of social skill deficits among persons with SAD. Such an interpretation is controversial, however (Heimberg & Juster, 1995). Although problems with social behavior may reflect skill deficits (i.e., a fundamental inability to perform the behavior in question), they may just as easily reflect an inability to perform behaviors that are potentially available because of excessive anxiety. These differing interpretations underlie the differing emphases of extant treatment programs. Those who tend to see behavioral inadequacy as reflecting fundamental skills deficits tend to emphasis social skills training (e.g., Turner, Beidel, Cooley, Woody, & Messer, 1994), whereas those who adhere to anxiety interference interpretations tend to emphasize cognitive therapy and other anxiety reduction strategies (Rapee & Heimberg, 1997).

Operant factors, especially negative reinforcement of avoidance behaviors, are hypothesized to work in tandem with parent–child interaction styles, peer relations, and perceived and imagined social threat or traumas in the maintenance of SAD. Negative reinforcement may occur when one avoids phobic situations and experiences a sense of relief upon the termination of anticipatory anxiety. A traumatic social event (e.g., having one's shorts pulled down at lunch) or observing a parent's social ineptitude can create a negative reinforcement feedback loop composed of anticipatory anxiety, school truancy, and short-term feelings of relief from anxiety (Albano, 1995). For younger children, parents can experience similar reinforcement by collaborating in their children's avoidance behaviors (e.g., writing an excuse to teachers), thereby reducing mutual distress (Vasey & Ollendick, 2000). The unfortunate consequence of these operant factors is that avoidance coping patterns can have deleterious effects on developmental tasks and can become more difficult to modify with age (Ollendick *et al.*, 2000). For example, the aversion to risking social rejection and failure of any kind can dramatically limit the opportunities to master social interaction skills necessary for activities such as developing friendships and romantic partners, joining peer groups, and gaining independence from the family unit. As avoidance behaviors continue to protect against the provocation of anxiety it becomes increasingly likely that fears of social rejection and failure will be realized.

Regardless of one's developmental perspective of SAD, the fact remains that such negative interpersonal experiences appear to be associated with an increase in the likelihood of dysphoria and other negative emotions, poor self-efficacy, and increased avoidance behaviors (Alden, Bieling, & Wallace, 1994; Wallace & Alden, 1997). In the operant conditioning model, excessive social avoidance during the critical developmental stages of late childhood and adolescence may negatively impact the development of social skills, and may reinforce maladaptive cognitive biases. These factors are not, of course, mutually exclusive. Vicious feedback cycles involving multiple factors may develop. For example, cognitive biases may lead to anxiety in social situations, which induces avoidance behaviors, which may lead to social skill problems, leading in turn to further increases in social anxiety. In general, children and adolescents with

SAD tend to reach developmental milestones such as dating, employment, and independent living at a later age than do nonanxious peers (Albano, DiBartolo, *et al.*, 1995).

Future research is needed to study prospectively the role of parent–child and peer interactions in the development of SAD in youth. Experience sampling methods such as electronic diaries (e.g., Stone & Shiffman, 1994) can facilitate the study of spontaneous emotions and behaviors of children and parents in everyday life. One could use such methods, for example, to address how children and adolescents react to peer rejection and victimization experiences. Electronic diaries may also be used to examine the degree of correspondence between parents and children in their respective perceptions, or to examine peer interactions (Beidel, Neal, & Lederer, 1991). Another potentially fruitful area of inquiry is the investigation of human strengths that may reduce the risk of the development of SAD (Seligman, Schulman, DeRubeis, & Hollon, 1999). Both naturalistic and experimental studies can facilitate the identification of risk and protective factors for the development of SAD, suggesting targets for treatment and prevention programs.

ASSESSMENT OF SAD

The critical role of assessment in both clinical science and treatment planning cannot be ignored. Although a number of assessment instruments for adult SAD have been developed, the literature on the assessment of SAD among children and adolescents lags behind that for adults. In this section we briefly review the most commonly used adult measures of social anxiety because these measures are often used in studies of SAD among adolescents. We then discuss the measures that have been specifically designed to be used with youth. Finally, we note several questions concerning the most appropriate strategy for the assessment of social anxiety in adolescence. For a more extensive review of the assessment of social anxiety and SAD, the interested reader is referred to Herbert, Rheingold, and Brandsma (in press), and to Schniering, Hudson, and Rapee (2000).

Adult Measures of Social Anxiety

Two early self-report measures, the Fear Questionnaire (FQ; Marks & Mathews, 1979) and the Fear Survey Schedule (FSS; Wolpe & Lang, 1964), have both been widely used as screening instruments for social anxiety. The 15-item FQ has three subscales designed to assess avoidance behaviors associated with feared social situations, agoraphobia, and blood/injury phobia. The FQ demonstrates good reliability (Marks & Mathews, 1979) and discriminant validity (Cox, Swinson, & Shaw, 1991). Research on the 76-item FSS has revealed four subscales: (a) social fears, (b) agoraphobic fears, (c) animal/insect fears, and (d) blood/injury fears (Beck, Carmin, & Henninger, 1998; Oei, Cavallo, & Evans, 1987). The FSS has been shown to have good reliability and adequate discriminant validity (Beck *et al.*, 1998).

Two additional early self-report measures that continue to be widely used (Larkin, Ciano-Federoff, & Hammel, 1998) are the Social Avoidance and Distress Scale (SADS) and the Fear of Negative Evaluation Scale (FNE), which were designed to complement one another (Watson & Friend, 1969). As discussed hereafter, measures designed as downward extensions of the SADS and FNE for youth have been developed. The 30-item FNE assesses fears of negative social evaluation by others, and has been shown to be both psychometrically sound (Turner, Beidel, & Larkin, 1986) and sensitive to treatment effects (Heimberg, Dodge, Hope, Kennedy, & Zollo, 1990). The 28-item SADS was designed to capture the subjective distress and social avoidance behaviors that characterize individuals with SAD. Similar to the FNE, Watson and Friend (1969) report good reliability and concurrent validity for the SADS. Although there is some evidence that the FNE and SADS do not discriminate SAD from other anxiety disorders (Turner, McCanna, & Beidel, 1987), this does not necessarily imply that the measures do not reflect social anxiety. Rather, SAD is the most prevalent secondary diagnosis in individuals with other anxiety disorders (Schneier *et al.*, 1992) and subdiagnostic levels of social anxiety are even more common.

Other more recent self-rating measures have been developed to target the specific symptoms of SAD. The 24-item Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987) was designed to assess fear and avoidance of both interpersonal and performance situations characteristic of SAD. The LSAS has demonstrated adequate psychometric properties and has been shown to be sensitive to treatment effects (Brown, Heimberg, Juster, 1995; Heimberg *et al.*, 1998). The Social Interaction Anxiety Scale and Social Phobia Scale were designed to be used together to assess social interaction and performance/observation fears, respectively (Mattick & Clarke, 1998). Each

20-item scale has demonstrated good psychometric properties (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992). The Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989) is a 45-item measure designed to assess somatic symptoms, negative thoughts, and overt behaviors across a range of potentially distressing situations. Several studies have documented excellent psychometric properties of the SPAI (Beidel, Turner, Stanley, & Dancu, 1989; Herbert, Bellack, & Hope, 1991; Turner *et al.*, 1989).

Child and Adolescent Measures of Social Anxiety

Several measures that are often used to assess childhood and adolescent social anxiety are actually general measures of anxiety. As such, self-report measures such as the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick, 1983), the Revised Children Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), and the internalizing score of the Child Behavior Checklist (CBCL; Achenbach, 1991) "discriminate anxious children from normal controls, but they do not differentiate anxious children from those with other psychiatric disorders" (Achenbach, 1991, p. 195, Beidel & Morris, 1995). Nevertheless, many of these measures continue to be utilized as primary measures of social anxiety. In response to this state of affairs, two measures have recently been designed specifically to target the distress and impairment associated with childhood and adolescent social anxiety and SAD. Both of these measures are downward extensions of existing adult social anxiety instruments.

Social Anxiety Scale for Children-Revised

The earliest social anxiety instrument developed specifically for children was the Social Anxiety Scale for Children (SASC; La Greca, Dandes, Wick, Shaw, & Stone, 1988). The SASC was modeled on the SADS and FNE described earlier. Subsequent research differentiated two constituents of the social avoidance and distress component of the scale: (a) avoidance and distress associated with new situations or unfamiliar peers (SAD-New) and (c) general avoidance and distress in the company of peers (SAD-General). Incorporating this distinction, La Greca and Stone revised the instrument in 1993. The SASC- Revised (SASC-R; La Greca & Stone, 1993) is a 22-item measure consisting of 18 descriptive self-statements and 4 filler items. Each item is rated on 5-point Likert scales as to how much it "is true for you." The three components of the scale (FNE, SAD-New, and SAD-General) have been supported by factor analyses (La Greca & Stone, 1993). In terms of psychometric properties, excellent internal consistency and good test-retest reliability have been established (La Greca & Lopez, 1998; La Greca & Stone, 1993), as well as construct validity with peer sociometric inventories (La Greca & Stone, 1993). Ginsburg *et al.* (1998) found that the SASC-R was able to discriminate the presence of comorbid SAD in school-aged children with a primary diagnosis of simple phobia.

The SASC-R was developed for use primarily with elementary school age children. La Greca and Lopez (1998) recently developed an adolescent version of the SASC-R, which they refer to as the Social Anxiety Scale for Adolescents (SAS-A). The SAS-A is identical to the SASC-R in format, but the wording was changed slightly to make it more developmentally appropriate for adolescents. Factor analysis with a sample of 250 high school students revealed the same three factors as the SASC-R (FNE, SAD-New, and SAD-General; La Greca & Lopez, 1998). Internal consistencies were satisfactory for each subscale. In addition, the validity of the SAS-A was supported by correlations with various measures of social functioning (La Greca & Lopez, 1998). A strength of the SASC-R and the SAS-A is that their similarity with each other, as well as with the adult FNE and SADS scales, raises the possibility of a theoretically consistent means of assessing social anxiety across the developmental span. A limitation of the instruments is that their utility for the assessment of SAD per se has not yet been studied.

The Social Phobia and Anxiety Inventory for Children

Similar to its adult counterpart, the Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995) is an empirically-derived 26-item inventory designed to assess distress in a variety of age-appropriate social settings. According to Beidel and Turner (1998), the SPAI-C is intended for use with children between the ages of 8 and 14, whereas the adult SPAI is suggested for adolescents older than 14. The SPAI-C has been shown to have high internal consistency and 2-week test-retest reliability (Beidel *et al.*, 1995). Scores on the SPAI-C have successfully differentiated socially anxious children

from children with externalizing disorders or normal controls (Beidel, Turner, & Fink, 1996), as well as children with other anxiety disorders (Beidel, Turner, & Hamlin, 1997). As for clinical utility, the SPAI-C has shown significant sensitivity to treatment effects (Beidel, Turner, & Morris, in press).

Assessment Considerations With Adolescents

With the growth of research and treatment efforts directed toward adolescent populations, it will become increasingly important to consider how adolescent social anxiety and SAD should be assessed. Are existing child or adult measures most appropriate? Or do we need to create measures specifically tailored to the emotional, behavioral, and cognitive vicissitudes of the adolescent experience, as with the SAS-A? In cases in which both a child and an adult version of the same measure have been developed (e.g., the SPAI), how is continuity maintained across time with the transition from childhood to adulthood, particularly given the high degree of developmental variability among adolescents (Ryan, Deci, & Grolnick, 1995; Smith, 1989)? Beidel and Turner (1998) recommend the adult version of their measure for youngsters over the age of 14. Similarly, La Greca (1999) recommends that the SASC-R be used for children and young adolescents, the SAS-A for older adolescents, and the FNE and SAD for adults. Further research is needed to evaluate the optimal transitions between developmental variants of the same basic measure, and to assess the degree to which scores on each measure survive these transition periods.

TREATMENT OF CHILDHOOD AND ADOLESCENT SAD

The past 15 years have witnessed significant advances in the development and empirical evaluation of treatments for adults with SAD. A variety of psychosocial interventions have been shown to be efficacious for adult SAD, including exposure-based treatments (Emmelkamp, Mersch, Vissia, & van der Helm, 1985; Fava, Grandi, & Canestrari, 1989), cognitive interventions such as Rational Emotive Behavior Therapy (DiGiuseppe, McGowan, Sutton-Simon, & Gardner, 1990; Mattick & Peters, 1988) and self-instructional training (DiGiuseppe *et al.*, 1990; Emmelkamp *et al.*, 1985; Jerremalm, Jansson, & Öst, 1986), relaxation training (Jerremalm *et al.*, 1986; Öst, Jerremalm, & Johansson, 1981), social skill training (Stravynski, Marks, & Yule, 1982; Wlazlo, Schroeder-Hartwig, Hand, Kaiser, & Münchau, 1990), exposure plus social skills training (Turner *et al.*, 1994), and exposure plus cognitive therapy (Heimberg & Becker, in press; Heimberg, Becker, Goldfinger, & Vermilyea, 1985). In addition, advances have been made in the pharmacotherapy of SAD in adults, although studies with child and adolescent populations have not yet been conducted. The literature on drug therapy will be reviewed briefly, followed by a more extensive review of the psychotherapy literature.

Psychopharmacology

Virtually no research has examined the efficacy of drug therapy for SAD among children or adolescents. Both Birmaher *et al.* (1994) and Manassis and Bradley (1994) reported promising results in open-label case reports of the selective serotonin reuptake inhibitor (SSRI) fluoxetine in the treatment of samples of children that included a variety of anxiety disorders. Because the results were not delineated by specific disorder, the response of the youngsters with SAD is not clear from these data. Mancini, Van Ameringen, Oakman, and Farvolden (1999) recently presented case reports of seven patients aged 7–18 years with generalized SAD who were successfully treated open-label with 1 of 3 serotonergic agonists (paroxetine, sertraline, or nefazodone). Taken together, these results point to the need for double-blind, placebo controlled studies of SSRIs for childhood and adolescent SAD.

Given the absence of controlled data on the safety and efficacy of drug therapy for youth with SAD, clinicians must turn to the adult literature for guidance. Several medication classes have been shown to be useful with adults in double-blind, placebo controlled trials. These include monoamine oxidase inhibitors (MAOIs) such as phenelzine (Gelernter *et al.*, 1991; Liebowitz *et al.*, 1992; Versiani *et al.*, 1992), reversible inhibitors of monoamine oxidase A (RIMAs) such as moclobemide and brofaromine (Humble, Fahlen, Koczkas, & Nilsson, 1992; van Vliet, den Boer, & Westenberg, 1992; Versiani, 1992); benzodiazepines such as alprazolam (Gelernter *et al.*, 1991) and clonazepam (Davidson, Potts, *et al.*, 1993), and SSRIs such as paroxetine (Stein *et al.*, 1998; Baldwin, Bobes, Stein, Scharwaechter, & Faure, 1999), fluvoxamine (Stein, Fyer, Davidson, Pollack, & Wiita, 1999; van Vliet,

den Boer, & Westenberg, 1994) and sertraline (Katzelnick *et al.*, 1995). The effects of tricyclic antidepressants have generally not been impressive (Zitrin, Klein, Woerner, & Ross, 1983). For performance anxiety in which fear is limited to a situation such as speaking or performing music to an audience, beta blockers such as propranolol have been shown to have modest effects (Liebowitz *et al.*, 1992), although they are even less helpful for generalized SAD, in which anxiety extends to multiple social situations (Turner, Beidel, & Jacob, 1994). In considering all of the data on drug therapy for SAD, an International Consensus Group on Depression and Anxiety recently recommended that an SSRI be used as the first-line pharmacologic agent in the treatment of adult SAD (Ballenger *et al.*, 1998). Only one SSRI, paroxetine, has received an indication for adult SAD from the Food and Drug Administration to date. The primary advantage of the SSRIs over other medication classes is that they are generally well-tolerated, producing relatively benign adverse effects.

Despite the efficacy of pharmacotherapy with adults for SAD, there are several reasons for caution in the use of these medications with youth. In a review of pharmacotherapy for youth with various anxiety disorders (primarily obsessive–compulsive disorder and school refusal), Kearney and Silverman (1998) found that most studies included some form of psychotherapy as an adjunct to the drug therapy. Across disorders and types of medication, the effect sizes of studies that included behavior therapy were substantially larger than the effect sizes of studies that included either general or supportive psychotherapy or that did not include any psychotherapy. Although the investigators in these studies tended to attribute effects to the drug under study rather than the behavior therapy, this pattern of results raises the possibility that the behavior therapy actually accounted for a substantial portion of the observed effects.

More generally, the degree to which the adult psychopharmacologic data can be generalized to children and adolescents is unknown. In addition to unknown efficacy, the safety of many of these agents in children has not yet been established. Some psychotropic drugs can produce potentially dangerous side effects. For example, the MAOIs are associated with risk of hypertensive crisis if combined with foods containing tyramine. Such foods include many common staples, such as most cheeses, fermented meats, most alcoholic beverages, chocolate, caffeine, ripe bananas or figs, and so forth. A major problem with pharmacotherapy for anxiety disorders in general, including SAD, is the high rate of relapse following medication discontinuation. For example, Stein *et al.* (1996) found a 63% relapse rate among adult SAD patients who had responded to paroxetine therapy and then switched to placebo after 11 weeks. Such findings have led leading psychopharmacologists to recommend long-term drug therapy for adults with SAD (e.g., Davidson, 2000). However, concerns about the unknown long-term effects of pharmacotherapy are compounded for children and adolescents.

One potentially useful role of pharmacotherapy is as an adjunct to psychotherapy. Some theorists are favorably disposed to such treatments (e.g., Heimberg *et al.*, 1998), whereas others see little value to adding drug therapy to an otherwise effective psychotherapy (Craske, 1999). Very little research has been conducted comparing psychotherapy with pharmacotherapy for SAD, much less evaluating the effects of combined treatments. Heimberg *et al.* (1998) recently compared phenelzine, pill placebo, cognitive behavioral group therapy (described hereafter), and a "placebo" psychotherapy (educational-supportive psychotherapy) for adult SAD. After 12 weeks of treatment both active treatments were equally effective on most measures, both outperforming the two placebo groups. These researchers are currently exploring the combined effects of medication and psychotherapy.

Psychotherapy

Although there are scattered reports of the psychosocial treatment of childhood and adolescent SAD in the literature dating back almost two decades, the systematic study of such interventions has only recently begun. Before reviewing these studies, four general points about this literature should be noted. First, the literature on the treatment of childhood and adolescent SAD consists almost exclusively of variations of behavioral and cognitive–behavioral therapy (Albano, DiBartolo *et al.*, 1995). Although there have been isolated reports of psychodynamic psychotherapy (e.g., Fonagy & Target, 1994; Trautman, 1986), there have been no controlled outcome evaluations of such interventions. Our knowledge about the efficacy of child and adolescent SAD treatments is therefore limited to CBT intervention programs.

The second general point is that the treatments that have been developed for childhood and adolescent SAD are essentially modifications of existing adult intervention programs. The theoretical underpinnings, rationale, and intervention strategies are

adapted to the developmental level of the target population. Given the presumed continuity of social anxiety across the lifespan and the growing literature supporting the efficacy of these interventions in adults, this strategy seems reasonable. Nevertheless, it remains to be seen if truly unique treatment components will be necessary to maximize results for child and adolescent populations.

Third, only a handful of studies to date have evaluated the treatment of children and adolescents who have met the diagnostic criteria for SAD or childhood avoidant disorder.[4] Several studies that included children and adolescents with SAD were actually designed to address mixed groups of children or adolescents with several anxiety disorders, including generalized anxiety disorder, separation anxiety disorder, specific phobias, and agoraphobia. In the review that follows, we distinguish treatments specifically for SAD from those targeting a hodgepodge of childhood and adolescent anxiety disorders.

A final point concerning the literature concerns the nature of studies that have been conducted to date. With two exceptions (Beidel *et al.*, in press; Silverman, Kurtines, Ginsburg, Weems, Lumkpin, *et al.*, 1999), all of the studies of the treatment of childhood and adolescent SAD have evaluated the target treatment program against wait-list control groups rather than alternative treatment or placebo. The issue of what conditions constitute an appropriate baseline against which to evaluate the efficacy of psychosocial treatments is controversial. On one hand, some view a comparison against no-treatment or wait-list conditions as an auspicious step toward empirical validation (Seligman, 1995). Indeed the Committee for Science and Practice of the American Psychological Association has recently established guidelines for declaring certain treatments as empirically supported (Chambless *et al.*, 1998). To be considered "probably efficacious" a treatment need only show superiority to no-treatment or a wait-list condition. Others, however, have argued that such comparisons are inadequate to establish even minimal treatment effects, particularly for mood and anxiety disorders (Herbert, 2000). According to this perspective, although wait-list designs control for time-related effects such as spontaneous remission and statistical regression, mood and anxiety disorders have been shown to be at least somewhat responsive to virtually any credible intervention, thereby rendering studies using no treatment or wait-list controls of little scientific importance. Such designs do not address nonspecific treatment effects and placebo effects (Kazdin, 1998).

[4] In children and adolescents, *DSM-IV* has subsumed avoidant disorder under generalized SAD. Similarly, leading researchers in the SAD field have designated generalized SAD and avoidant personality disorder to have little to no qualitative differences, although they remain separate diagnostic entities as a consequence of distinct Axis I and Axis II DSM *Task* Forces (Herbert, Hope, & Bellack, 1992; McNeil, 2000; Stein & Heimberg, 2000).

General Description of Treatments

The first published reports of the treatment of social anxiety among children or adolescents occurred in the early 1980s. Lowenstein (1983) found promising results with a multi-component protocol for 11 "extremely shy" adolescents. Participants were treated with a combination of group and individual therapy over a 6-month period, although the frequency and length of sessions was not specified. Franco, Christoff, Crimmins, and Kelly (1983) reported the case of an "extremely shy" 14-year-old boy successfully treated with individual social skills training, consisting of 20–30 min sessions delivered twice weekly for 15 weeks. Christoff *et al.* (1985) found improvement among six shy, introverted children (mean age 12.8 years) treated with four sessions of social problem-solving training, followed by four sessions of social skills training delivered in a group format. Although promising, these anecdotal reports are marked by several limitations, including the failure to use standard diagnostic criteria and standardized assessment measures, and most importantly the absence of random assignment to wait-list or alternative treatment conditions.

Nine studies have subsequently been conducted that employed *DSM* diagnostic criteria for SAD to identify participants. These studies are organized into two sections in Table I according to whether they addressed SAD exclusively, or addressed samples of individuals with various anxiety disorders. Table I also describes several characteristics of each study, including the treatment format (individual vs. group), the age range of the sample, the basic research design (comparison to wait-list control vs. alternative treatment), and whether or not a treatment manual was employed. The nine studies focus on 1 of 3 basic treatment programs: (1) cognitive–behavioral group therapy for social anxiety disorder in adolescents (CBGT-A; Albano, Marten, *et al.*, 1995; Hayward *et al.*, 2000), (2) social-effectiveness therapy for children (SET-C; Beidel *et al.*, in press), and (3) "coping

Table I. Psychotherapy Outcome Studies of Social Anxiety Disorder Among Youth

Authors	Individual or group	Age range	I.	II.	III.	IV.
Cognitive–behavioral treatments for child and adolescent Social Anxiety Disorder						
Beidel *et al.* (in press)	Group	8–12	Yes	—	Yes	Yes
Hayward *et al.* (2000)	Group	$X = 15.8$	—	Yes	Yes	Yes
Albano, Marten, Holt, Heimberg, & Barlow (1995)	Group	13–17	—	—	Yes	Yes
Cognitive-behavioral treatments for child and adolescent anxiety disorders (including Social Anxiety Disorder)						
Flannery-Schroeder & Kendall (2000)	Both	8–14	—	Yes	Yes	Yes
Silverman, Kurtines, Ginsburg, Weems, Rabian, *et al.* (1999)	Individual	6–16	No	—	Yes	Yes
Silverman, Kurtines, Ginsburg, Weems, Lumpkin, *et al.* (1999)	Group	6–16	—	Yes	No	Yes
Kendall *et al.* (1997)	Individual	9–13	—	Yes	Yes	Yes
Barrett, Dadds, & Rapee (1996)	Individual	7–14	—	Yes	Yes	Yes
Kendall (1994)	Individual	9–13	—	Yes	Yes	Yes

Note. I = (a) superior to pill, placebo, or other treatment or (b) equivalent to an already established treatment; II = superior to waitlist control group; III = treatment manual; IV = sample characteristics clearly specified.

cat" child behavior therapy (CBT; Barrett *et al.*, 1996; Flannery-Schroeder & Kendall, 2000; Kendall, 1994; Kendall *et al.*, 1997; Silverman, Kurtines, Ginsburg, Weems, Lumpkin *et al.*, 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian *et al.* 1999).

Each investigator has taken some liberties in modifying these treatment programs. For example, Barrett *et al.* (1996) adapted Kendall's CBT (Kendall, 1994) for an Australian child population, renaming their intervention "coping koala." Similarly, Silverman, Kurtines, Ginsburg, Weems, Rabian, *et al.* (1999) conducted a randomized clinical trial of Kendall's CBT (Kendall, 1994) using groups instead of Kendall's original individualized format. Despite these modifications, there are four treatment components that are shared by each of these intervention programs: psychoeducation, exposure, skill building, and homework assignments. Before reviewing each study, we briefly explore each of these components.

Psychoeducation is the provision of information concerning SAD. The general approach is to describe the three central components of anxiety (somatic, cognitive, and behavioral), as well as the specific nature of social anxiety. Particular emphasis is placed on the role of avoidance behaviors in the maintenance of social anxiety, and how exposing oneself to feared social situations is necessary for habituation. Nonpathological anxiety is described as an adaptive response designed as a warning signal for impending danger, whereas pathological anxiety is described as resulting from "false alarms" to unharmful signals or excessive responding to legitimate signals or both. This didactic portion of treatment also involves informing participants (and sometimes parents) about the various aspects of treatment and what types of challenges and gains can be expected.

Exposure is a cornerstone of all behavioral and cognitive–behavioral interventions for anxiety disorders. In the broadest sense, exposure is the systematic confrontation of feared situations. Exposure can be varied along many dimensions, such as the rapidity with which one progresses up a hierarchy of phobic stimuli, and the manner in which the stimulus is confronted (e.g., using imagery vs. through simulated exercises vs. in vivo). The use of exposure in child and adolescent populations is discussed further by Albano, Marten, and Holt (1991), and by Kendall, Kane, Howard, and Siqueland (1990).

Each treatment involves some form of skill building, although the specific skills targeted and emphasized vary considerably. These skills may include relaxation training, cognitive restructuring techniques, assertiveness and other social skill training, and problem-solving skills. These skills are developed through various combinations of didactic instruction, modeling by therapists, and role-play exercises. Following each session, participants are given homework assignments to further facilitate learning, refine and master skills, and generalize skills to real-world situations and problems.

Interventions Not Specifically Designed for Social Anxiety Disorder

All six of the studies that have employed mixed anxiety disorder samples involve some variation of the "coping cat" CBT program developed by Kendall and his colleagues (Kendall, 1990; Kendall *et al.*, 1990). With six published reports, "coping cat" CBT stands as the most studied of all treatments of child or adolescent anxiety disorders to date. Two studies conducted by Kendall and colleagues included youth with avoidant disorder (subsumed by SAD in *DSM-IV*) in their mixed anxiety disorder sample (Kendall, 1994; Kendall *et al.*, 1997). Both of these studies compared the 16 session treatment group to wait-list control groups.

In Kendall (1994), out of 47 children (aged 9–13 years) assigned to the treatment condition, nine met criteria for avoidant disorder (19% of the total sample) and the rest of the sample met criteria for separation anxiety disorder or overanxious disorder. Treatment was delivered in an individualized format, and multiple informants were used to assess outcome. Kendall (1994) not only assessed statistical significance, but also the clinical significance of treatment gains by using comparisons to normative data derived from adult samples. Results found the majority of the CBT group to no longer meet diagnostic criteria for an anxiety disorder at posttreatment. According to parent diagnostic interviews, a significant group by time interaction was present with 64% of the treatment group no longer meeting diagnostic criteria compared to only one client in the wait-list control group (5%). Statistically and clinically significant differences between the treatment and wait-list conditions were also obtained, with the treatment condition scoring lower on the RCMAS, the Internalizing subscale of the CBCL, and the Children's Depression Inventory (CDI; Kovacs, 1981) than the wait-list group from pre- to posttreatment. One-year follow-up assessment revealed maintenance of gains. Although statistics were not provided, Kendall (1994) indicated that treatment gains were not specific to any single anxiety disorder, implying that these findings can be generalized to youth with SAD.

In a second study of "coping cat" CBT by Kendall's group, Kendall *et al.* (1997) assigned 60 children, also aged 9–13, to treatment and 34 to a wait list. Seventeen of the 60 who received treatment (28%) were diagnosed with avoidant disorder. A multimodal assessment method was again used to measure outcome, including parental and child diagnostic interviews, self-reports, and behavioral observations. Following treatment, a significant group by time interaction was present with 54% of the treated children no longer meeting diagnostic criteria for their primary diagnosis, compared to 6% of the wait-list group. For those children in the treated group, significant improvements were found in symptom severity levels using both self-report measures and diagnostic interviews compared to the wait-list group. One-year follow up data once again revealed the maintenance of treatment gains.

Barrett *et al.* (1996) adapted Kendall's treatment program for an Australian population. In their sample of 79 children ranging in age from 7 to 14 years, 19 met criteria for childhood SAD. Children were randomly assigned to either CBT, CBT with a family treatment component (CBT-FAM), or a wait-list control condition. In the CBT-FAM group, after each child session, parents and children had a joint session with the purpose of developing collaborative strategies for managing anxiety in the household. During joint sessions, parents and children were taught communication skills, the process of dual involvement in cognitive–behavioral skills (e.g., exposure tasks), and identifying and reinforcing the strengths of each family member over the course of treatment. At posttreatment, significant differences were found in all three conditions in terms of the frequency of SAD diagnoses and estimations of clinical change, compared to normative samples on selected measures. From pre- to posttreatment, significant differences emerged between all three conditions on percentage of children meeting diagnostic criteria. In the CBT-FAM condition, 84% of children were diagnosis-free, significantly greater than the 57.1% in the CBT condition, with both treatments significantly greater than the 26% diagnosis-free in the wait-list condition. At 6- and 12-month follow-ups, CBT and CBT-FAM treatments both accentuated prior gains with an impressive 70.3% in the CBT group, and 95.6% of the CBT-FAM treatment group being diagnosis-free 12 months after treatment. In terms of self-report measures, both treatment groups showed significant improvement on mother's Internalizing subscale of the CBCL compared to the wait-list group at posttreatment. On the FSSC-R, only the CBT-FAM treatment demonstrated significant improvement compared to the wait-list group at posttreatment. To assess the role of age on treatment outcome, analyses were conducted comparing younger (7–10 years) and older (11–14 years) children. At posttreatment, a significantly higher rate of younger children were diagnosis-free in the CBT-FAM condition

(100%) than in the CBT condition (55.6%). For older children, there was no difference in diagnosis-free status between the two conditions (60% in each). Similar age effects were found at the 12-month follow-up, suggesting that empowering and educating parents may be more salient for younger children who have less autonomous relationships than their adolescent counterparts. Silverman and her colleagues modified Kendall's CBT program by treating a wider age range of participants (Silverman, Kurtines, Ginsburg, Weems, Lumpkin, *et al.*, 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian *et al.*, 1999), and either delivering treatment in small groups of three to six children (Silverman, Kurtines, Ginsburg, Weems, Rabian *et al.*, 1999) or including parental involvement in order to facilitate exposure (Silverman, Kurtines, Ginsburg, Weems, Lumpkin *et al.*, 1999). Silverman, Kurtines, Ginsburg, Weems, Rabian *et al.*, (1999) reported the results of a randomized comparison study between a group version of CBT (GCBT) and a wait-list control. A sample of 56 children ranging in age from 6 to 16 years participated, with 15 (27%) meeting criteria for SAD, and the others meeting primary diagnoses of overanxious disorder or generalized anxiety disorder. The results indicated that GCBT for childhood SAD led to significant improvements at posttreatment and at 3-, 6-, and 12-month follow-up assessments compared to the absence of improvement for children in the no-treatment condition. Significant reductions in clinical diagnoses were demonstrated with GCBT, as 64% of participants at posttreatment were diagnosis-free, 77% at 3-month follow-up, 79% at 6-month follow-up, and 76% at the 12-month follow-up. For self-report measures, the GCBT condition demonstrated significantly greater pre- to posttreatment gains on the RCMAS and Internalizing subscale of the CBCL compared to the wait-list condition.

Silverman, Kurtines, Ginsburg, Weems, Lumpkin *et al.* (1999) conducted a component analysis of individual CBT, comparing contingency management (CM), self-control (SC), and education support (ES) as a credible psychological placebo condition. Parents were involved in selective sessions to varying degrees in each treatment condition. In the first three sessions of the CM group, parents were taught "behavioral strategies to facilitate child exposure or approach behavior toward feared objects or situations" (p. 678), and were present during the developmental stages of the fear hierarchy. In the SC group, parents had no direct involvement until Sessions 4 through 9, when the parent and therapist discussed expectations and successes with exposure assignments. Parents were explicitly informed to let their child independently apply SC strategies. In the ES, both parents and children were involved in all sessions, as the therapist provided "knowledge about the nature, course, and etiology, and treatment of phobias in children" (p. 679). In comparing parental involvement between conditions, parents had the most direct involvement and skills training in the CM group. The sample had 104 children ranging in age from 6 to 16, with 10% of the sample meeting criteria for SAD; 84% met criteria for specific phobia. The results indicated no difference in gains between the three conditions. On both child and parent self-report measures, all three conditions showed significant improvement from pre- to posttreatment on the RCMAS, FSSC-R, and CDI, with no differences between groups. Using age norms on the CBCL to create an index of clinically significant improvement, no group differences were found from pre- to posttreatment. In terms of diagnostic recovery, 88% in the SC group were diagnosis-free at posttreatment, a significant difference from the 55% and 56% in the respective CM and ES groups. These results highlight the methodological importance of research designs that incorporate alternative treatment or placebo control conditions rather than relying solely on wait-list controls. Although parental involvement was present in all conditions, the behavioral strategies taught to parents in the CM group did not result in any incremental benefit on treatment outcome than the parent psychoeducation in the SC and ES groups.

In the final psychosocial treatment study utilizing a subsample of SAD children in a mixed anxiety disorder sample, Flannery-Schroeder and Kendall (2000) conducted a comparative study between individualized CBT, group CBT, and a wait-list control group. The sample had 37 children ranging in age from 8 to 14, with 13% of the sample meeting criteria for SAD; 57% met criteria for generalized anxiety disorder and 30% met criteria for separation anxiety disorder. In terms of posttreatment diagnostic status of primary anxiety disorders, results indicated that both treatments were significantly different than the wait-list condition, but no differences emerged between treatments. In the individualized CBT, 73% no longer met criteria, compared to 50% in the group CBT, and only 8% in the wait-list condition. When evaluating clients no longer meeting criteria for any anxiety disorder, significant differences emerged between all three conditions. In the individualized CBT group, 64% of children were diagnosis-free, significantly greater than

the 50% in the group CBT condition, with both treatments significantly greater than the 0% diagnosis-free in the wait-list condition. At 3-month follow-up, both individualized and group CBT accentuated prior gains with 79% in the individualized CBT condition and 53% in the group CBT condition no longer meeting criteria for their primary anxiety disorder; the differences between these conditions were not statistically significant. In other analyses, a self-report index of social functioning, including measures of social anxiety, loneliness, friendships, and social engagement, failed to demonstrate significant differences between conditions from pre- to posttreatment.

Taken together, these studies provide preliminary support for the efficacy of Kendall's "coping cat" CBT for child and adolescent SAD, as well as the variations developed by Barrett and colleagues, and Silverman and colleagues. In addition, the results of Barrett *et al.* (1996) suggest that familial involvement may augment treatment effects for preadolescents. Results further suggest that studies by Kendall and colleagues do not appear to be limited by their use of avoidant disorder instead of SAD diagnostic criteria.

Despite their promise, these studies suggest caution about CBT for youth with SAD for three reasons. First and foremost, only one study (Silverman, Kurtines, Ginsburg, Weems, Lumpkin *et al.*, 1999) compared the treatment against anything other than a wait-list condition, and this study found no differences between the active treatment conditions and a credible psychological placebo on child and parent self-report measures and an index of clinically significant gains; mixed results were found for posttreatment diagnostic criteria. These results raise the possibility that the effects of "coping cat" CBT may be because of nonspecific effects such as demand characteristics, therapist enthusiasm and support, therapist–client alliance, and effort justification. The second limitation of these studies is that only a fraction of the participants in each study actually had SAD. Because separate analyses were not reported for each diagnostic group, the degree to which the results can be generalized to SAD in particular is unknown. Similarly, despite the methodological strength of randomized assignment (in all five studies) to treatment or wait-list control conditions, only two of the studies (Silverman, Kurtines, Ginsburg, Weems, Lumpkin *et al.*, 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian *et al.*, 1999) reported how many of the children or adolescents with SAD actually received treatment. A third limitation is the wide age range of the samples. Participants ranged in age from 6 to 16. As discussed previously the unique developmental tasks of adolescence raise questions about how any single treatment program could be applied with equivalent effectiveness to both preadolescent children and adolescents. Finally, the only study to use an index of social functioning (Flannery-Schroeder & Kendall, 2000), assessing real-world treatment implications, failed to find improvement as a function of treatment. Thus, social skills, which are an important component of SAD, may not be directly targeted by the "coping cat" as currently prescribed.

We suggest that future SAD treatment research focus more attention on the study of mechanisms of action. The specific effects of exposure, cognitive restructuring, and social skills training need to be delineated. In addition, the potentially important role of nonspecific treatment effects must not be neglected. For example, the cultivation of hope and self-efficacy may contribute significantly to treatment success (Snyder *et al.*, 2000; Kashdan & Roberts, under review).

Interventions Specifically Targeting Social Anxiety Disorder

Two intervention programs designed specifically for childhood and adolescent SAD have been developed to date. These two treatments, CBGT-A and SET-C, are both modeled after established adult SAD treatment programs (e.g., Albano, 1995; Beidel *et al.*, in press). Although there are important differences between the two programs, there are also several similarities, including that both are conducted in group formats and both include innovative social skills training components.

The central place of social skills training in both protocols is especially noteworthy as difficulties developing close relationships differentiates SAD from other anxiety disorders in youth (Beidel & Morris, 1995). In CBGT-A, social skills training involves teaching the mastery of molecular skills such as maintaining eye contact, smiling, and speaking at an appropriate volume, as well as molar skills such as accepting and receiving praise, asking questions, being assertive, and detecting and responding to partner's emotions. An innovative component of the CBGT-A social skills training procedure involves the use of a "snack break" at the midpoint of each session to practice "mini-exposure exercises" (Albano, 1995). Snack

time not only provides exposure to eating in the presence of others, but the break provides a less threatening context in which to introduce and refine various social behaviors.

In SET-C, designed for preadolescent children, social skills training not only includes education and specific exercises conceptually similar to CBGT-A, but also an additional component named "Peer Generalization Programming" (Beidel *et al.*, in press). According to Beidel (2000), socially-skilled peers in the community are actively recruited to participate in planned group activities alongside the children and adolescents in treatment for SAD. This provides a forum for socially skilled peers to model appropriate behaviors and engage group members in friendly, nonthreatening interactions. Following each of the social skill development sessions, weekly pleasurable group events such as bowling, fishing, and video arcades give adolescents with SAD an opportunity to socialize with the very children whom they typically admire yet avoid in naturalistic settings.

Two studies have evaluated the efficacy of CBGT-A. Albano *et al.* (1995) piloted their treatment with five adolescents, aged 13–17, in a 16-session group format. The program included selective familial involvement in four sessions. During the first two sessions, parents and children were educated about the nature, maintenance, and treatment process for SAD. In Session 8, parents and children both participate in communication training regarding the role of familial processes in the maintenance of SAD. Finally, parents attend session 15, wherein they watch in-session exposure tasks and process treatment expectations and gains. Although no diagnostic data were presented at posttreatment, at the 3-month follow-up, 80% of the sample had SAD remit to subclinical minor social concerns, and at the 1-year follow-up, 100% of the sample no longer met full criteria for SAD, with only one adolescent qualifying for a diagnosis of SAD in partial remission. In addition, 4 of 5 adolescents no longer met criteria for any psychiatric disorder at the 1-year follow-up, including full remittance of secondary disorders, such as overanxious disorder (80% of the sample), specific phobia (40% of the sample), and dysthymia (40% of the sample), that were present at intake. Both the adolescents and their parents reported increased positive affect, quality of relationships, and overall subjective well-being following treatment.

Hayward *et al.* (2000) recently compared CBGT-A to a wait-list control group. In this study, 35 female adolescents meeting criteria for SAD were randomly assigned to treatment ($n = 12$) or no treatment ($n = 23$). At posttreatment, significant improvements emerged in the treatment group compared to the no treatment group, with the treatment group SAD severity ratings decreasing nearly 50% according to both child and parent diagnostic interviews. Forty-five percent of the treatment group no longer met diagnostic criteria for SAD compared to 5% of the no treatment group. Similar differences were found for episodes of major depression, with only 18% of the treated group meeting criteria for major depression in contrast to 41% in the untreated group. Despite these promising results, at the 1-year follow-up, no significant differences emerged between treatment and no treatment groups in both the frequency of SAD diagnoses (CBGT-A: 40% vs. Untreated: 56%) and Social Phobia and Anxiety Inventory for adults (SPAI; Turner *et al.*, 1989) scores (CBGT-A: 96.4 vs. untreated: 99.2).

In the most thoroughly controlled study to date of a psychosocial treatment for childhood or adolescent SAD, Beidel *et al.* (in press) conducted a randomized comparison of SET-C and an alternative, empirically supported treatment for test anxiety. Sixty-seven children aged 8 to 12 meeting criteria for SAD were randomly assigned to either SET-C ($n = 36$) or the alternative treatment ($n = 31$). The alternative treatment matched SET-C in number and duration of sessions, therapist contact, and involved social exposure tasks (e.g., performing in front of group), albeit different from the individualized nature of SET-C. At posttreatment, significant differences emerged in favor of SET-C, as 67% no longer met criteria for SAD compared to 5% in the alternative treatment condition. In addition to diagnostic assessment, a more sophisticated outcome measure was used to define clinical responders as those children scoring less than an established cutoff for SAD on the SPAI for children, and being rated by a clinician as having little to no impairment. Using this conservative responder index at posttreatment, the SET-C group contained significantly more responders than did the alternative treatment (53% vs. 5%). Finally, at 6-month follow-up treatment gains in the SET-C group increased, with 85% rated as diagnosis-free by clinicians. Improvements were documented by the children themselves, parents, and independent raters of social performance.

In sum, promising results for CBGT-A for adolescent SAD were found in two different studies by two independent investigatory teams. Considerable improvement was not only evident in symptoms of

SAD, but also mood disorders, other anxiety disorders, and overall subjective well-being. Nonetheless, long-term maintenance of gains was only demonstrated in one of the two studies, suggesting the need for treatment refinements such as booster sessions. Indeed, refinements to the CBGT-A protocols are already underway (Hayward *et al.*, 2000). It remains to be seen whether different findings would have been obtained for Hayward and colleagues (2000) had their choice of outcome measures been child or adolescent self-report instruments rather than adult versions. As discussed earlier, the decision of appropriate outcome measures to be used with adolescents continues to be an unresolved issue. SET-C shows considerable promise as an effective intervention for preadolescent children with SAD. Although conclusions are limited by the availability of only a single study, that study not only demonstrated impressive long-term treatment gains, but also ruled out nonspecific factors.

Future research will need to focus on the optimal modality for treatment delivery (e.g., group vs. individual), the optimal number of treatment sessions, and the contributions of distinct treatment ingredients. In addition to parental involvement, other treatment components that may impact outcome differently for children vs. adolescents need to be examined. Cognitive interventions, for example, may be of less value in the treatment of children relative to adolescents with SAD. The Peer Generalization Programming developed by Beidel and colleagues (in press) appears promising and merits further study.

Innovative outcome measures in the reported treatment studies included (a) evaluating child, parent, and familial problem-solving strategies to ambiguous social situations (Barrett *et al.*, 1996), (b) 2-week naturalistic daily diaries of engagement in social activities (Beidel *et al.*, in press), and (c) behavioral role-play tasks of assertive and prosocial scenarios (Beidel *et al.*, in press). We believe that these multimodal approaches for assessing treatment efficacy are a welcome addition to our further understanding of the generalizability of SAD interventions. As new technologies develop, it is suggested that outcome measures evolve accordingly, including (a) experience sampling methods (e.g., electronic diaries) to assess trends in the quantity and quality of social activities, and positive and negative emotions; (b) experimental paradigms to assess molecular social skills such as reciprocity of self-disclosure, laughter, and animated movements (Kashdan & Roberts, in preparation), and (c) the inclusion of "positive psychology" constructs (e.g., virtuous traits, personal strivings, happiness).

SUMMARY

Since being declared the "neglected anxiety disorder" in 1985 (Liebowitz, Gorman, Fyer, & Klein, 1985), impressive strides have been made in our understanding of SAD, at least among adults. We now know a great deal more about the phenomenology of the disorder. In particular, it is now accepted that SAD is much more common and more debilitating than originally believed. Data are beginning to point to potential variables involved in the etiology and maintenance of the disorder. Several new assessment measures have been developed, some with good psychometric properties and clinical utility. Unfortunately, the vast majority of the research has focused on adults, and our knowledge of SAD in child and adolescent populations remains very limited.

As new findings accumulate on the etiology and maintenance of social anxiety and SAD, they will eventually need to be incorporated into the development and improvement of present-day treatments. For example, studies continue to indicate a significant relationship between anger management problems and social anxiety in adults (Erwin, Heimberg, Arbuckle, Schneier, & Liebowitz, 2000; Kashdan *et al.*, in preparation) and children (Davidson, Hughes, *et al.*, 1993). Future research needs to further understand the directionality between SAD, anger management problems, and the developmental pathways to SAD (e.g., operant conditioning, parenting styles). Among children and adolescents who tend to exhibit anger management problems during the course of SAD experience, are there different emotional and behavioral responses to interpersonal rejection? Are there incremental benefits including anger management training in SAD treatments? Are there developmental differences between children and adolescents? The relationship between anger and social anxiety is still in its infancy, and offers opportunities for further understanding of differing manifestations of SAD. As these and other findings in the field are replicated and expounded they should facilitate new theories and methods to treat this disabling disorder.

Although the treatment outcome literature on psychosocial interventions for child and adolescent SAD is in its infancy, there is reason for considerable optimism. Several studies have documented the efficacy of CBT for preadolescents with mixed anxiety disorders relative to wait-list conditions. Of the two treatments programs designed specifically for childhood or adolescent SAD, social effectiveness

therapy for children appears especially promising, having shown superiority to a credible alternative treatment in a well-controlled study, as well as impressive long-term maintenance of treatment gains. Cognitive–behavioral group therapy for adolescents is the only intervention to date specifically targeting adolescents with SAD rather than preadolescent children. Initial results are promising, at least for the short-term, although no studies have yet evaluated CBGT-A against an alternative treatment to rule out placebo and nonspecific effects. Although tempting, comparisons between SET-C and CBGT-A should be avoided at this stage of the literature for two reasons. First, no studies have directly compared the two programs. Second, in our experience with these populations, adolescents with SAD are much more difficult to recruit and treat than are preadolescent children. Comparing studies of treatments for childhood SAD with those for adolescent SAD is therefore akin to comparing apples and oranges.

In addition to further controlled outcome research, another important avenue for future investigation is the utility of including parental involvement in the treatment of SAD (Barrett *et al.*, 1996; Ginsburg, Silverman, & Kurtines, *et al.*, 1995). Parental (and possibly even sibling) involvement can range from being involved in the initial psychoeducation sessions of treatment to being active participants in each treatment session, and trained in contingency management for between-session exposure exercises. Recent theoretical and empirical work has demonstrated the potent role that fathers have on the development of social competence and social fears (Masia & Morris, 1998; Patterson, Kupersmidt, & Griesler, 1990). Future experimental and naturalistic studies can determine the relative importance of fathers, mothers, and siblings, and whether the inclusion of multiple familial members in the treatment of SAD adds benefit to the inclusion of mothers only.

Another area meriting further research is the optimal manner of assessing treatment effects. The extant studies have varied widely in both the initial measurement of SAD as well as the assessment of outcome, using various combinations of informants (e.g., child, parent, teacher), methods (e.g., self-report, behavioral observation, diagnostic interviews), and definitions to define clinically significant response (e.g., normative comparisons, indices of end-state functioning). Such wide measurement variation makes comparisons across studies difficult. With the development of the SPAI-C and the SASC-R/SAS-A, comparing their sensitivity and specificity can guide further refinements in assessment, and improve the utility of other methodologies (e.g., behavioral tasks, electronic diaries).

In addition to pathology-oriented measures of treatment outcome, consideration should also be given to "positive psychology" constructs such as positive emotions, subjective well-being, approach-oriented personal strivings, and human strengths (e.g., Kashdan & Roberts, in preparation). Expanding the frontier of treatment outcome to indices of optimal functioning may offer additional insights into the effects of various interventions. Once children and adolescents begin to leave their constricted "social cocoons" as distress and impairment abate, they will find themselves with unforeseen opportunities at their disposal (Beidel & Turner, 1998). As their lives become less burdened by anxiety, avoidance, and negative self-appraisals, treatment objectives can be expanded to include growth-oriented goals.

As research on efficacious treatments accumulates it will be important to study moderators and mediators of treatment responsivity. Based on correlational and experimental research, some areas to consider include cognitive mechanisms (e.g., attentional-focus) and character traits (e.g., conscientiousness, autonomy). These studies may translate to the development of additional treatment modules such as attentional retraining (Hartman, 1986), a greater focus on cultivating goal-oriented skills (e.g., Snyder *et al.*, 2000), and self-regulatory competencies (inhibiting competing desires; Muraven & Baumeister, 2000). An eventual goal is the creation of algorithms that approximate the best likelihood of successful client-treatment matches, as well as to alert therapists to client strengths that can be capitalized. Finally, research is needed to assess the transportability of these treatments from highly specialized academic clinical research settings to naturalistic settings such as community clinics and schools. Despite their limitations, the results reported here represent an auspicious beginning to the understanding and treatment of this most common of anxiety disorders among youth.

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