

# Cognitive-Behavioral Approaches to the Treatment of Social Anxiety Disorder

J. Suzanne Singh, MA, and Debra A. Hope, PhD

*Department of Psychology, University of Nebraska-Lincoln, Lincoln, Nebraska, U.S.A.*

**Abstract:** The current paper provides an overview of and evidence for the cognitive-behavioral formulation of social anxiety. In addition, the paper presents the theory supporting an empirical basis for the use of exposure and cognitive restructuring in the treatment of social anxiety disorder. Finally, the paper concludes with a review of the effectiveness of cognitive-behavioral treatments for social anxiety disorder, including a comparison with psychopharmacological treatments. Both cognitive-behavioral and pharmacological interventions appear to be effective for social anxiety disorder, with relative advantages and disadvantages for each.

## Cognitive-Behavioral Approaches to the Treatment of Social Anxiety Disorder

Social anxiety, which involves fear of being negatively evaluated in social and performance situations, is a normal transient experience for most people. However, some people experience more intense and frequent social anxiety than others, in a broader range of situations and it interferes with their lives. Social anxiety disorder, the diagnostic term for someone who suffers from excessive anxiety in situations with the potential for negative evaluation from others (1), has a lifetime prevalence rate of over 10% (2). The experience of anxiety and avoidance behavior that characterize the disorder lead to a poorer quality of life in the social and emotional realms and decreased work productivity (3) compared to individuals without social anxiety disorder. Additionally, researchers have found substantial comorbidity between social anxiety disorder and other mental disorders, including anxiety disorders, mood disorders and substance abuse (4), with the onset of social anxiety often preceding the onset of the mood disorder (5) or substance dependence (6). The high prevalence of social anxiety disorder, as well as the suffering associated with it, highlights the need for effective interventions.

Although a variety of treatments have been developed, a cognitive-behavioral approach to the treatment of social anxiety disorder appears to be efficacious in many studies (e.g., 7). The current paper reviews the cognitive-behavioral formulation of social anxiety disorder and how it informs the treatment of the disorder. In addition, the paper presents the evidence for the effectiveness of common treatment components in the cognitive-behavioral approach to the treatment of social anxiety disorder. Finally, the paper describes studies that compare cognitive-behavioral interventions to other modalities, including pharmacotherapy.

## The Cognitive-Behavioral Formulation of Social Anxiety Disorder

Rapee and Heimberg (8) provide a cognitive-behavioral model of social anxiety disorder that emphasizes the perceptual and information processing activities of an individual when confronted with the possibility of social evaluation and how distortions in those processes lead to the elevation and maintenance of social anxiety. Although the formulation is useful for explaining the phenomenon of social anxiety at both normal and elevated levels (8), the current paper will focus on the application of the model for individuals with social anxiety disorder.

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Address for Correspondence: Debra A. Hope, Department of Psychology, University of Nebraska-Lincoln, Lincoln, NE 68588-0308, U.S.A. E-mail: dhope1@unl.edu

According to the model, the chain of events that lead to social anxiety begins when the individual perceives an audience with the potential to evaluate him or her and forms a mental representation of him/herself from the perspective of the audience (8). Individuals with social anxiety disorder are more likely than non-anxious individuals to view themselves from the perspective of an observer (9, 10) and this difference in perspective taking is specific to social situations that involve high levels of anxiety (11, 12). For individuals with social anxiety disorder, the observer perspective becomes more prominent as time elapses (up to three weeks; 9). However, the increase in the observer perspective is not seen with non-anxious controls (9).

Various sources of information contribute to the formation of the baseline image of the self including pre-existing images of the self, previous feedback from others, and prior experiences that are stored in long-term memory (13). However, the baseline image is not static. Instead, in the presence of the perceived audience, the individual updates the mental representation of the self using information from the perception of internal cues, such as the physiological symptoms of anxiety (e.g., increased heart rate), and external cues, such as audience feedback (e.g., frowning, laughter; 8).

Unfortunately, the mental images that individuals with social anxiety disorder form are more negative than the images formed by control individuals (10) and are thought to play a causal role in the maintenance of social anxiety disorder (14). The Rapee and Heimberg model explains the prevalence of negative mental images in individuals with social anxiety disorder by asserting that individuals with social anxiety disorder tend to allocate attentional resources toward both internal and external sources of threat, as has been shown in a various experimental studies using attention tasks, such as the Stroop task (e.g., 15). Furthermore, the combination of the negative self-imagery and interpretation bias results in greater deficits than the results of either mechanism acting alone and they serve to maintain the disorder (16).

Following the formation of the mental representation of the self, the individual with social anxiety compares their mental representation to the expectations that the individual believes that

the audience holds based on both situational and audience characteristics (8, 17). The resulting estimation of the likelihood of negative evaluation is the discrepancy between one's mental representation and the expected standards of the audience (8). Individuals with social anxiety disorder usually expect that negative evaluation is probable and that the consequences are great (18).

The expected negative evaluation results in the behavioral, cognitive and physical symptoms of social anxiety (8). The behavioral resultants of social anxiety disorder can be obvious, such as the avoidance of or escape from social situations, or understated behaviors, such as the avoidance of eye contact (19). Regardless of level of subtlety, it is thought that these behaviors occur in order to avoid negative evaluation (19). The cognitive symptoms of social anxiety disorder are comprised of the thoughts of negative evaluation that are formed in social situations (19), such as "They will think that I am stupid," or "I am a loser." Finally, physical symptoms of social anxiety disorder typically involve increased physiological arousal, including accelerated heart rate, blushing and sweating (19).

As can be seen, there is substantial research support for the Rapee and Heimberg model, which essentially posits that social anxiety disorder is a cognitive dysfunction in which a socially anxious individual's biased perspective-taking and expected failure to meet expectations in a situation result in the characteristic symptoms of the disorder. Therefore, psychosocial treatments will need to change that core cognitive dysfunction either directly or indirectly in order to be successful, according to the model.

## Psychosocial Treatment of Social Anxiety Disorder

Although a wide variety of psychosocial treatments for social anxiety disorder have been investigated over the years, most studies have focused on cognitive-behavioral interventions. It is not surprising that many early studies (e.g., 20) focused on social skills training because individuals with social anxiety disorder tend to report that they do not know what to say or how to act in social situations (21). In fact, social skills training is a component of

some contemporary multi-component treatments (e.g., 22). However, as with many other anxiety disorders (23), the most established psychosocial intervention for social anxiety disorder is exposure therapy. In social anxiety disorder, exposure therapy is combined often with other interventions, most often a cognitive intervention, to address directly the prominent biases in cognitive dysfunction described above.

### Exposure

Therapeutic exposure involves asking the individuals to stop avoiding and to engage in feared situations either in roleplays or *in vivo*. In social anxiety disorder, exposures are typically conducted in a graduated fashion, combining roleplays and *in vivo* formats. Exposures are intended to change the behavioral components of anxiety in at least two ways. First, exposures decrease avoidance (8, 24), which is thought to be a barrier to the changing of pathological fear structures (25, 26). If avoidance occurs, then there is no opportunity to incorporate disconfirming information that could change dysfunctional cognitions about the feared situation. Therefore, exposures force the client to engage in an anxiety-provoking situation so that they can incorporate new information into their memory structures. Second, exposures allow the client to practice their performance in social situations (24, 27). Many individuals with social anxiety disorder are so socially isolated that there are few social opportunities to engage in social activities (28). Exposures serve the dual purpose of allowing an increase in comfort in the situation, as well as an improvement in social skills that are a result of practice. Often in research studies treatment has been conducted in groups which have the advantage of providing individuals for roleplay partners. However, individual treatment is also efficacious (29).

### Is exposure effective?

Research evidence suggests that exposure might be the most important component of cognitive-behavioral therapy for social anxiety disorder. In fact, a meta-analysis comparing multi-component treatments to exposure-only treatments for social anxiety disorder concluded that combined

cognitive and exposure therapy does not lead to greater improvements in self-reports of social anxiety or depressed or anxious mood than exposure-only treatments (30). In fact, only two of the eight analyzed clinical trials comparing exposure only to cognitive-behavioral therapy led to better results for combined therapy (30). In addition, the authors of the meta-analysis reported a positive correlation between the number of exposures involved in the treatment and treatment outcome (30). Furthermore, although some researchers argue that cognitive restructuring helps the client remain in therapy, their analyses did not detect any differences between the treatments with respect to dropout rate (30).

### Cognitive Interventions: Rationale and Treatment Outcome

As noted above, social anxiety disorder is associated with a number of cognitive symptoms (8). Cognitive restructuring, a key feature of cognitive therapy, is the process by which an individual identifies and challenges irrational or maladaptive thoughts, including beliefs, assumptions and expectations, and replaces them with more rational, realistic and adaptive thoughts (24). Furthermore, it is used to interrupt the cycle of negative thoughts, anxiety and behavioral avoidance outlined in Rapee and Heimberg's model (8).

Based on prior conceptualizations (i.e., 24, 31), we will organize the description of the cognitive dysfunction associated with social anxiety disorder into three levels: content, judgement and interpretation, and attentional processes. First, there is longstanding evidence that individuals with social anxiety disorder have overly negative cognitive content. For example, as mentioned above, the mental images of the self that individuals with social anxiety disorder form are more negative than the images formed by control individuals (10). Unfortunately, the negative thoughts that occur before, during and after an anxiety-provoking situation lead to increased anxiety, additional negative thoughts, performance deficits and avoidance (24, 32, 33). Most socially anxious individuals are capable of verbally reporting this content and it is often the focus of cognitive interventions.

Second, individuals with social anxiety disorder commit judgement and interpretation errors to a greater extent than individuals without social anxiety disorder. For example, as a result of the perceived discrepancy between an individual's image of the self and the audience's expectations, individuals with social anxiety disorder usually expect that negative evaluation is probable and that the consequences of failure will be great (18). In another example, Stopa and Clark (34) report that individuals with social anxiety disorder interpret ambiguous events as negative and mildly negative events as catastrophic. These types of cognitions typically involve logical errors that can be attacked successfully using cognitive restructuring (27), as well as other techniques, such as interpretation training, that more directly target the interpretation bias (e.g., 35).

Third, attentional biases are associated with social anxiety disorder. Several studies using a variety of methodologies have found that individuals with social anxiety disorder show a bias of basic attentional processes towards information related to social threat. These biases are evident whether the presented threat stimuli are highly artificial, such as words on a computer screen (e.g., 15, 36), or through more ecologically valid methods. As an example of the latter, Veljaca and Rapee (37) found that socially anxious individuals were more aware of staged cues of boredom during a public speaking task than non-anxious individuals. Although cognitive restructuring is not likely to be used to directly alter attentional patterns, cognitive restructuring might be useful for changing how an individual perceives threat, which might indirectly alter attentional patterns (8).

### **Is cognitive therapy alone helpful for social anxiety disorder?**

As Beck's cognitive therapy (38) became prominent, several research groups examined whether cognitive therapy alone would be efficacious for social anxiety disorder (e.g., 39, 40). Although cognitive therapy alone did lead to improvements in symptoms and functioning (e.g., 39), it quickly became apparent exposure is an important element of treatment and attention turned to combined exposure and cognitive interventions. However, several

studies have highlighted particular benefits of cognitive therapy for individuals with social anxiety disorder.

Mattick and Peters (41) found greater anxiety reduction when cognitive restructuring was added to an exposure treatment. A cognitive intervention may also help with maintenance of treatment gains. Hofmann (42) randomly assigned individuals with social anxiety disorder to cognitive-behavioral group therapy (CBGT), exposure group therapy without cognitive interventions, or a wait-list control. The treatments produced better outcomes than the control condition at posttest, but did not differ from each other. However, the participants who received CBGT showed treatment gains between posttest and the six-month follow-up, whereas participants who were in the exposure group therapy did not, suggesting that cognitive restructuring is a skill that increases the probability of continued treatment gains. Furthermore, in a study of CBGT for social anxiety disorder, Heimberg and colleagues (7) found the CBGT group's ability to continue to use their cognitive skills might have increased the utility of the treatment in the long-term compared to a credible attention-control placebo intervention.

In addition to the evidence that suggests that the cognitive component of treatment is important for long-term outcome in social anxiety disorder, there is evidence that cognitive changes are important predictors of therapeutic change. For example, Heimberg and colleagues (7) report a relationship between changes on a clinician-rated severity of social anxiety disorder measure and changes on a thought-listing task. In a similar vein, Mattick and colleagues (40, 41) demonstrated that changes in a number of cognitive indices, such as locus of control, were predictors of treatment outcomes.

### **A caveat**

Until this point, we have treated cognitive-based and exposure-based interventions as distinct and separable treatments. However, in the reality of both research and clinical practice, the techniques might be difficult to separate. Although a practitioner or a researcher might conceptualize their treatments as purely cognitive or purely behavioral, their techniques are likely to contain both cognitive

and behavioral elements, with an explicit emphasis on one type of intervention (43). For example, whether or not they intend to do so, it is possible that both clients and therapists engage in forms of cognitive restructuring during the completion of exposures (e.g., providing a rationale for the exposure; 43). As another example, the treatment developed by Clark and colleagues (44, 45) and reviewed below is typically considered a cognitive intervention. However, the intervention includes behavioral experiments in which individuals test their negative predictions in stressful situations in the absence of safety behaviors (44, 45), which some might consider to be an exposure. Furthermore, one possible explanation for the empirical evidence that suggests that exposure and cognitive interventions are equally efficacious (e.g., 46) is that the interventions produce similar treatment results because they contain the same components. In sum, the distinction between cognitive and behavioral interventions might reflect a separation that cannot be made in practice.

Not surprisingly, there are treatments that explicitly emphasize both cognitive and behavioral elements in the treatment of social anxiety disorder. The following section will discuss the efficacy of those treatments.

### **The efficacy of combined exposure and cognitive restructuring for social anxiety disorder**

Cognitive restructuring is used before and during exposures to help clients cope with their anxiety, while it is used after exposures to ensure that the exposure experience was not a predominantly negative experience and to help clients take credit for their successes (24). There is a significant support for combined cognitive and exposure treatments (hereafter referred to as cognitive-behavioral treatments) for social anxiety disorder.

At least four meta-analyses have indicated that cognitive-behavioral therapy is better than control conditions for social anxiety disorder. First, Feske and Chambless's (30) meta-analysis indicates that symptoms of social anxiety disorder improve with both cognitive-behavioral therapy and exposure only treatments. Furthermore, they report that these gains are maintained at 1–12-month follow-ups. Second, Chambless and Hope (47) report

the results of a meta-analysis demonstrating the superiority of cognitive-behavioral therapy on measures of social anxiety, fear of negative evaluation, and maladaptive thoughts when compared with control conditions (pill placebo, education and support, and waitlists) at posttest and follow-up. Third, Taylor (48) concluded that all of the examined treatments (i.e., cognitive therapy, exposure therapy, combined cognitive and exposure therapy, social skills training, placebo) produced superior outcomes to waitlist control, but only the combined cognitive and exposure therapy had a significantly larger effects size than placebo, suggesting the importance of both the cognitive and the behavioral components of the treatment of social anxiety disorder. Fourth, Fedoroff and Taylor (46) provide evidence that the effectiveness of combined cognitive and behavioral treatments is greater than waitlist control conditions, as well as pill placebo conditions.

### **Comparisons of cognitive-behavioral treatment and medications**

In addition to studies comparing cognitive-behavioral therapy to other psychotherapies, a number of studies have compared the efficacy of cognitive-behavioral therapy with the efficacy of psychopharmacological approaches to the treatment of social anxiety disorder. Heimberg and colleagues (49) as well as Liebowitz and colleagues (50) compared the efficacy of 12 weeks of CBGT to phenelzine (a monoamine oxidase inhibitor) therapy, a pill placebo, or an educational-supportive group therapy. Analyses of whether participants responded to treatment indicate that phenelzine therapy and CBGT are equally effective, but each treatment has advantages and disadvantages in terms of treatment efficacy. For example, alleviation of symptoms occurs more quickly for individuals who receive phenelzine than for individuals who receive CBGT. However, CBGT appears to be more durable with fewer relapses than phenelzine.

In another study comparing phenelzine with cognitive-behavioral therapy, Gelernter and colleagues (51) compared the efficacy of CBGT, phenelzine, alprazolam (a benzodiazepine) and a placebo for the treatment of social anxiety disorder. Results indicate that the phenelzine group was

more likely to maintain gains than the alprazolam group and that the cognitive-behavioral therapy group actually continued to improve after treatment. In contrast, a meta-analysis suggests greater effect sizes in acute treatment for benzodiazepines than psychological interventions, but only a small number of studies were available for benzodiazepines and the durability of change was not available (46).

Turner, Beidel and Jacob (52) compared the effectiveness of exposure treatment to atenolol (a beta-blocker) and placebo treatment. Although the exposure treatment produced better results than the placebo on most measures, atenolol did not. In addition, behavioral measures indicated that the exposure treatment was superior to atenolol.

Davidson and colleagues (53) examined the relative efficacy of fluoxetine (an SSRI), CBGT enhanced with social skills training, and a placebo, as well as two combination treatments (enhanced CBGT plus fluoxetine and enhanced CBGT plus placebo). Each treatment had a 14-week duration and the fluoxetine dosage gradually increased from 10 to 40 or 50 milligrams per day during treatment barring any adverse effects of the medication. Results indicate that each treatment was more effective than the placebo and that the efficacy of the combination treatments was not greater than either treatment alone. Similar to Heimberg and colleagues (49), the pharmacological treatment appeared to produce effects more quickly than enhanced CBGT, but, by treatment termination, the treatments did not appear to differ in efficacy.

Clark and colleagues (44) compared their cognitive therapy (which contains elements of therapist-guided exposure) to fluoxetine plus self-exposure and placebo plus self-exposure. Treatment lasted 16 weeks with a 3-month period of continued medication and occasional cognitive therapy sessions for the active treatment conditions. Fluoxetine was started at 20mg and could increase to 60 mg daily. There was a 12-month untreated follow-up. Unlike other studies, individuals receiving cognitive therapy showed greater change on measures of social anxiety by mid-treatment with larger differences by post-treatment compared to the fluoxetine condition, which did not differ from placebo at post-treatment. Participants in both active treatments

continued to maintain their gains in follow-up with continued advantage for participants who received cognitive therapy.

In a somewhat dated meta-analysis, Gould and colleagues (54) concluded that both cognitive-behavioral and phenelzine for social anxiety disorder are effective with promising results noted for the SSRIs. Since then, the evidence for SSRIs has grown, with recent meta-analyses (46, 55) indicating SSRIs are more effective than placebo at reducing both the symptoms of social anxiety and associated disability.

To summarize, cognitive-behavioral therapy seems to be more effective than beta blockers (52). Both phenelzine (49) and fluoxetine (53) appear to work faster than cognitive-behavioral therapy, but yield similar response rates in the acute phase of treatment. The exception to this generalization is the Clark and colleagues study (44) that showed their cognitive therapy to work faster and yield better outcomes than fluoxetine. However, it should be noted that the relapse rate is lower for cognitive-behavioral therapy than for phenelzine after the discontinuation of treatment (49, 50). Similarly, research suggests a long-term advantage for individuals who receive cognitive-behavioral treatment as opposed to benzodiazepine use (51). The one study with a combined treatment, did not show any advantage over the monotherapies (53).

## Conclusion

The cognitive-behavioral model of social anxiety disorder is well-developed. Rapee and Heimberg's (8) formulation that emphasizes maladaptive perspective taking has substantial research support. The key element of the best psychosocial treatments appears to be therapeutic exposure to feared situations, often combined with a cognitive intervention to address the established cognitive dysfunction in the disorder. At present there appear to be several similarly efficacious treatments for social anxiety disorder including cognitive-behavioral treatment, phenelzine and fluoxetine (and probably other SSRIs, but these have yet to be compared to the cognitive-behavioral treatment). Medication appears to work more quickly and cognitive-behavioral therapy may be more

durable. This is good news for individuals suffering from social anxiety disorder. However, none of these treatments have 100% success rates and even individuals classified as responders in the study often have lingering symptoms or disability. Future research is needed to continue to refine our more promising interventions.

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