

Treating Generalized Anxiety Disorder With Cognitive-Behavioral Therapy

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Cognitive-behavioral therapy (CBT) can be successfully used to treat generalized anxiety disorder (GAD), with or without the inclusion of anxiolytics. The treatment of GAD using cognitive-behavioral techniques involves cognitive restructuring, relaxation, worry exposure, behavior modification, and problem solving. This article will review the principles used in CBT for the treatment of GAD and will discuss recent modifications of CBTs and how they may be employed. The simultaneous use of CBT and antidepressants will also be reviewed. *(J Clin Psychiatry 2004;65[suppl 13]:14-19)*

The chronicity and negative impact of generalized anxiety disorder (GAD) have been well established (see the article by Stein¹ in this supplement). Among the efficacious treatment approaches for this distressing and disabling condition is cognitive-behavioral therapy (CBT). The purpose of this article is to describe the cognitive-behavioral approach to the treatment of GAD, detail some recent modifications of this approach, review the empirical basis for the use of CBT with GAD, and discuss the combination of psychopharmacologic and psychotherapeutic treatment.

Cognitive-behavioral therapy is a psychotherapeutic approach designed to alter behavior and cognition that produces and maintains emotional distress. In CBT, both the patient and therapist are actively involved in the process to alter such distress. The therapist often uses the Socratic method to elicit relevant information from the patient. The therapist takes a stance of collaborative empiricism; the patient and therapist work together to develop hypotheses and test these ideas. Work done outside of the therapy session (e.g., self-monitoring, behavioral experiments, or exposure) is as important as, if not more important than, the work done in session.

Cognitive-behavioral therapy for GAD may include any or all of the following techniques: psychoeducation,

symptom management techniques, relaxation, cognitive restructuring, worry exposure, behavior modification, skill building, and self-monitoring. Therapists may emphasize the behavioral or cognitive components or present a mix of both.

COMPONENTS OF CBT FOR GAD

Psychoeducation

Psychoeducation involves providing information about GAD and its treatment. This process serves several purposes. Psychoeducation can be very reassuring; a patient may feel better simply by knowing that others struggle with controlling worry as well. It can also destigmatize the diagnosis because worry is viewed as an extension of normal experience. Education enhances motivation for treatment because patients understand why each of the components is used. Development of realistic expectations about treatment, including duration, frequency of meetings, and expectations about homework, may increase compliance. Presenting the patient's role as an active one also helps to build the collaborative relationship that is a pillar of the cognitive-behavioral approach.

Specifically, GAD is presented as a disorder in which worry has become uncontrollable and interferes with day-to-day activities and quality of life. Physical symptoms of GAD are explained as an outgrowth of living with chronic anxiety. The interrelationships between thoughts, behaviors, and emotions (often called the cognitive triangle) are presented to help the patient understand the maintenance of his or her anxiety problem and the rationale for the components of treatment.²⁻⁵

Self-Monitoring

Self-monitoring involves recording subjective anxiety and situational information between treatment sessions. This procedure is used to gauge response to treatment, assist in a functional analysis of worry and anxiety (e.g.,

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What triggers anxiety? What is the thought content during times of high anxiety?), and aid the patient in early identification of the anxiety response. The process itself often reduces anxiety. Examples of self-monitoring materials are available through a number of sources.^{2,3}

Symptom Management Techniques

Symptom management techniques are designed to alleviate the immediate uncomfortable effects of anxiety. Such techniques are used to relieve the immediate discomfort associated with anxiety, foster a sense of being able to control one's anxiety, and disrupt the information processing biases (e.g., selective attention to threatening materials or bias toward anxious interpretations of ambiguous materials) that accompany anxiety.

Relaxation strategies are the most common symptom management techniques. Progressive muscle relaxation (i.e., systematically tensing and then relaxing muscle groups) is probably the most commonly used technique for GAD, but there is a wide range of effective approaches, including deep breathing and meditation techniques. Many therapists find it useful to present a number of such strategies and allow the patient to select those that he or she prefers. Distraction is another technique that can be applied in the short term. For example, a patient may be taught to focus carefully on what other people are saying in social settings as a way to distract himself or herself from feeling anxious. It should be made clear, however, that distraction is not a good long-term strategy because it leaves the impression that anxiety, if confronted directly, could not be managed by any other means.

Cognitive Restructuring

Cognitive restructuring is based on the idea that GAD is attributable in part to interpretations that do not reflect a realistic appraisal of a situation. Two types of distortions are common among patients with GAD: (1) believing that unlikely events are likely to occur and (2) assuming that the only possible outcome is the most catastrophic alternative. In part, anxious thinking is habitual in patients with GAD; a treatment goal is to increase awareness of and alter this cognitive habit. In addition, thoughts and emotions form a vicious cycle; anxious mood increases the perception of threat and fear-provoking interpretations of ambiguous stimuli, which leads to further anxious mood. Thus, another goal of therapy is to interrupt this process.

Cognitive restructuring involves 3 steps. First, the therapist will help the client to identify anxious interpretations or predictions by use of exemplars, questioning, review of self-monitoring, or role playing. Next, the patient and therapist will develop an alternative thought that is realistic and evidence-based, and the patient will actively substitute this thought for the initial anxiety-provoking thought. Finally, a behavioral experiment will be developed to test the validity of the competing thoughts. The

patient will be asked to practice this technique as anxious thoughts arise between therapy sessions.

Worry Exposure

Worry exposure involves systematic and repeated exposure to catastrophic images associated with worry. This technique is designed to reduce anxiety associated with each of the images through repeated exposure to the same stimulus, which leads to decreased emotional response to that stimulus⁶ (detailed discussion of this mechanism is described elsewhere in this supplement).

To accomplish worry exposure, the patient and therapist develop a list of worries, ordered by the level of associated anxiety. Generally, exposure will proceed from less to more anxiety-provoking worries. For each scenario, the patient is asked to vividly conjure the image and remain focused on it for 25 to 30 minutes. Following this image technique the patient is asked to generate other possible outcomes for the same situation.

Other Techniques

The purpose of behavioral modification is to alter behaviors that contribute to anxiety. One example is reducing negatively reinforcing behaviors (i.e., behaviors that are reinforcing because they increase anxiety), such as checking or other "compulsive" behaviors, or avoidance. The therapist may also suggest that the patient schedule "worry time." This technique is used to reduce the total amount of worry time by concentrating worry in a single period and then systematically reducing the length of that period. Worry scheduling also may be helpful because it eliminates worry during periods in which it may be more interfering (e.g., at work, in bed). Thought stopping (e.g., interrupting unwanted worry by saying "stop" or snapping a rubber band that is worn around one's wrist) may also be used to eliminate worry at inappropriate times.

The use of skill-building techniques in GAD is based on the idea that some worries are based on realistic, remediable skill deficits. Examples may include problem solving, time management/activity scheduling, organizational skills, and social skills training. This issue will be discussed further in relation to recent modifications of CBT below.

EFFICACY OF CBT FOR GAD

There are 4 major meta-analyses of CBT for GAD,⁷⁻¹⁰ so there is no need for a separate comprehensive review of GAD treatment studies here. Rather, it is useful to examine the conclusions that can be drawn from these studies. A compilation of effect sizes from all 4 studies is presented in Table 1.

The earliest reviews established that CBT significantly reduces anxiety and is superior to no treatment and to conditions used to control for nonspecific effects. There was

Table 1. Summary of Effect Sizes for Reduction in Anxiety and Depression After Cognitive-Behavioral Therapy for Generalized Anxiety Disorder

| Study | Treatment | Posttreatment | Follow-up |
|---|------------------------|---------------|-----------|
| Chambless and Gillis, 1993 ⁷ | CBT | 1.69 | 1.95 |
| Borkovec and Whisman, 1996 ⁸ | Hamilton anxiety | | |
| | CBT | 2.13 | 2.50 |
| | BT | 1.71 | 1.87 |
| | CT | 1.30 | ... |
| | Nonspecific | 1.78 | 2.35 |
| Hamilton depression | None | 0.03 | ... |
| | CBT | 1.41 | 1.66 |
| | BT | 1.44 | 1.11 |
| | CT | 1.12 | ... |
| | Nonspecific | 0.88 | 1.13 |
| Gould et al, 1997 ¹⁰ | None | 0.07 | ... |
| | CBT | 0.91 | ... |
| | BT | 0.51 | ... |
| Borkovec and Ruscio, 2001 ⁹ | CT | 0.59 | ... |
| | Hamilton anxiety, STAI | | |
| | CBT | 2.48 | 2.44 |
| | BT or CT | 1.72 | 1.71 |
| Hamilton depression, BDI | Placebo or alt | 2.09 | 2.00 |
| | WL or none | 0.01 | ... |
| | CBT | 1.14 | 1.22 |
| | BT or CT | 1.02 | 0.88 |
| | Placebo or alt | 0.78 | 1.05 |
| | WL or none | 0.14 | ... |

Abbreviations: BDI = Beck Depression Inventory, BT = behavioral therapy, CBT = cognitive-behavioral therapy, CT = cognitive therapy, STAI = State Trait Anxiety Inventory, WL = wait list (control group). Symbol: ... = no data available.

evidence that CBT for GAD reduces depression symptoms as well. Treatment effects were found to endure or increase in the 6 to 12 months after the completion of treatment.^{7,8} Gould et al.¹⁰ completed comparisons of a number of treatment packages—purely behavioral, purely cognitive, and combined approaches. Although they found that the effect sizes of behavioral and cognitive approaches were smaller than those associated with CBT, there were no significant differences between approaches. The one exception was that CBT performed better than relaxation training with biofeedback. These reviewers also found that response to individual and group modalities did not significantly differ and that length of intervention was not significantly associated with outcome.

The most recent meta-analysis comprised 13 controlled clinical trials.⁹ The reviewers examined a number of methodological issues about each of the studies, including what method was used for diagnosis, whether reliability checks were used, whether assessors were blinded, whether treatment was conducted according to a protocol, and whether treatment was checked for adherence to protocol. They concluded that the body of work was “characterized by a relatively high degree of scientific rigor.”^{9(p39)} Every study showed CBT to be better than no treatment. A majority of studies found CBT to be superior to alternative psychotherapeutic treatments (82% at posttreatment and 78% at follow-up).⁹ A minority found the full CBT treatment

package to be better than behavioral or cognitive techniques alone (20% at posttreatment, 43% at follow-up). Treatment-related gains were always maintained or increased over the follow-up period. An overall dropout rate of 8.3% suggests that CBT is well tolerated.

In summary, these meta-analyses clearly demonstrate that CBT reduces anxiety symptoms and is more effective than no treatment and nonspecific controls. There is some suggestion that the full CBT package is better than behavioral or cognitive components alone, but this has not been consistently demonstrated. Some of the factors that have been associated with poor treatment response include concurrent use of anxiolytic medication (type not specified), comorbid diagnoses, chronic social stressors, and negative expectations about therapy.¹¹ Cognitive-behavioral therapy for GAD is a good example, however, of the discrepancy between statistically and clinically significant change. Durham and Allen¹¹ reviewed clinical significance of change in studies conducted between 1980 and 1993. When they examined the percentage of improvement, they found an overall 50% reduction in somatic symptoms and 25% in tendency to worry. Return to normal functioning occurred for 57% of patients who took part in cognitive therapy and 22% receiving behavioral therapy, leading these authors to express a preference for cognitive approaches. To date, according to Roemer and Orsillo,¹² no studies have evaluated the effect of CBT on broader measures of functioning, such as quality of life and impairment.

RECENT MODIFICATIONS OF CBT FOR GAD

Recognition of the limited clinical significance of change associated with CBT for GAD has led to several recent efforts to refine the intervention. Two such attempts involve refinement of the cognitive aspects of treatment. Ladouceur et al.¹³ have devised a 4-component model of GAD, which includes intolerance of uncertainty, erroneous beliefs about worry, poor problem orientation, and cognitive avoidance. The resulting treatment approach is entirely focused on reducing worry; the authors believe that relaxation strategies are not a necessary component of treatment. In their initial trial of the approach, they successfully reduced symptoms (including worry, somatic symptoms, general anxiety, and depression) as compared with wait list (delayed treatment group). The intervention has yet to be compared with an active control.

A similar cognitive treatment involves addressing metacognitive processes in GAD. In other words, beliefs about worry are viewed as a critical factor in GAD. Both positive (e.g., worry prevents bad things from happening) and negative (e.g., worry will make me go crazy) beliefs about worry are viewed as reinforcing the worry, thus maintaining the disorder. The resulting intervention is entirely cognitive; the key treatment goal is to address beliefs about worry.⁵

Another approach to refining CBT for GAD has been to add components to remedy deficits that may maintain the disorder. One example is the interpersonal approach to GAD. Adherents to this model believe that people with GAD engage in behaviors that make negative interpersonal outcomes more likely. As a result, components are added to the treatment to improve maladaptive patterns of relating to and interacting with others.¹⁴ Another approach is based on the view that individuals with GAD have difficulty with regulating emotion. Specifically, GAD is seen as an outgrowth of difficulty with modulation of emotion and attention to cognitive information as a technique to avoid emotional information. Based on this conceptualization, techniques such as education about emotions and training in regulating emotion have been added to intervention packages to decrease discomfort with emotion and allow more adaptive problem solving, thus reducing the need for worry.¹⁵

Mindfulness and acceptance strategies have been incorporated into treatment for GAD as well.^{12,16} The rationale for this approach is as follows. Worried individuals are continually focused on what is perceived as a threatening future. Worry tends to be self-perpetuating (i.e., the more worried one is, the more anxious he or she feels, the more likely he or she is to perceive ambiguous stimuli as threatening, etc.) and can interfere with effective cognitive strategies such as problem solving. Acceptance-based approaches encourage patients to accept that some events are outside of their control, which may compel them to accept that reality. Moreover, patients are often asked to identify highly valued aspects of their life with which they may have difficulties and to use problem solving to make changes in those areas.¹⁷ Mindfulness, a psychological/behavioral version of meditation, is applied to increase relaxation and counteract the future orientation of individuals with GAD. Preliminary testing suggests that this approach may lead to positive change in symptoms and functioning.¹²

These modifications of the cognitive-behavioral approach to treating GAD are at preliminary stages of development. Future work should test the effectiveness of such modifications, particularly in relation to clinically significant change and broad functional outcomes.

SPECIAL CONSIDERATIONS IN USING CBT FOR GAD

Comorbid Diagnoses

The presence of comorbid diagnosis is normative in patients with GAD. Among the most common lifetime comorbid diagnoses are major depression, panic disorder, and substance abuse.¹⁸ The presence of 1 or more of these conditions may complicate successful treatment of GAD using CBT.

The most important factor to consider in treating GAD in the presence of another disorder is whether it is the

primary clinical concern. Symptoms of other disorders may interfere with selected treatment. For example, a depressed patient may not have the motivation or energy to follow through with homework assignments, or a panic patient may experience relaxation-induced anxiety when using symptom management techniques.² Substance use may provide a competing (albeit less helpful) strategy for reducing anxiety, thus reducing compliance with treatment. If it is the case that another disorder is causing more distress or impairment, referring the patient to services for the primary diagnosis is most appropriate. If another disorder is equally disabling but the patient is motivated to address the GAD, supplementing the cognitive-behavioral approach for GAD with techniques to address the additional problem may be useful.

Older Adults

The elderly are an important population to consider in relation to treatment for GAD because prevalence rates are high in this group.¹⁹ There are 2 reasons to consider modification of the basic CBT approach for use with older adults. First, GAD presents somewhat differently in older adults than it does in younger individuals. Research has shown that there are age-related differences in content of worry, description and/or experience of anxiety, and emphasis placed on somatic symptoms.¹⁹ Second, CBT may be less effective for older adults. Dropout rates are higher than those observed among younger populations, and the effectiveness of CBT has not been shown to surpass alternative approaches such as supportive therapy.^{19,20}

Some strategies that have been suggested for enhancing the effectiveness of CBT for the elderly include use of adapted materials, such as large-type handouts or multimedia presentations; techniques to enhance memory for presented material, such as audiotapes or videotapes to be reviewed between sessions; visual imagery in the place of other relaxation techniques; and planning for contingencies such as energy level, physical functioning, and weather, which may affect the elderly person's ability to attend an appointment.²¹ Others are considering alternative approaches, such as stimulus control, problem solving, and life review, for managing anxiety in this population.²⁰

COMBINING THERAPEUTIC APPROACHES

Most patients who seek psychotherapy for anxiety disorders are taking an anxiolytic medication, and the majority express a preference for a combined treatment approach.²² Although it is intuitively reasonable to believe that 2 modalities would be better than 1, this idea has not received consistent empirical support. To date, only 2 studies^{22,23} have compared the combination of medication and CBT with medication and CBT alone. Power et al.²³ conducted a study involving 5 treatment groups: CBT, di-

azepam, CBT plus diazepam, CBT plus placebo, and placebo. They found no difference in treatment response among the CBT, CBT plus diazepam, and CBT plus placebo groups, all of which led to greater reduction than did diazepam or placebo. The highest rates of clinically significant change and maintenance of treatment gains and lowest rates of subsequent treatment were in the CBT plus diazepam and CBT treatment groups. The authors suggested that the addition of diazepam may have increased the effectiveness of CBT because they observed the earliest treatment gains in the combined group.²³ Aside from the Power et al.²³ study, one must extrapolate from combining treatments for other anxiety disorders. In particular, CBT for panic disorder appears to be less effective when combined with benzodiazepines.²¹ Studies using older antidepressant medications (e.g., tricyclic antidepressants) suggest that the combination may be better during active treatment with both approaches but that gains are eroded with withdrawal of the medication.²¹ There is insufficient evidence about combining newer antidepressants with CBT to draw any significant conclusions, but medication withdrawal may be of less concern with newer agents.²¹ Given patient preferences, this area is clearly important for future research.

SELECTING A TREATMENT APPROACH

On the basis of the current literature on CBT and pharmacotherapy for GAD, there does not appear to be a significant difference in effectiveness between the modalities.^{9,10} Thus, it is recommended that clinicians consider the following when selecting a treatment approach.

What is the patient's preference? A number of studies have shown that patient motivation is related to improvement in psychotherapy.²⁴ Consistent with this, a recent study²⁵ showed that patients who elected to receive counseling rather than medications had a better treatment response than did those who were randomly assigned to the same intervention.²⁵

What is the treatment history? As the old adage goes, "if it ain't broke, don't fix it." If the patient has had a positive experience with one modality in the past, that is good reason to use a similar approach again.

What factors may interfere with successful treatment? Pharmacotherapy may be contraindicated for an individual who has difficulty tolerating side effects or other physiologic changes. Cognitive-behavioral therapy would not be a good choice for an individual who would have difficulty attending meetings regularly (e.g., inflexible work schedule, childcare problems, transportation difficulties) or complying with homework assignments.

CONCLUSION

In summary, CBT is an effective approach for the treatment of GAD and is the treatment of choice in patients for whom pharmacotherapy is contraindicated or who prefer a psychotherapeutic approach. Psychotherapy researchers continue to refine the basic cognitive-behavioral treatment package in an effort to broaden the impact of the treatment on the lives of those affected by GAD.

Drug name: diazepam (Diastat, Valium, and others).

Disclosure of off-label usage: The author has determined that, to the best of her knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

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