

# Cognitive-Behavioral Therapy in the Treatment of Posttraumatic Stress Disorder

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## Focus Points

- There are several effective cognitive-behavior treatments for posttraumatic stress disorder (PTSD).
- The main components of effective treatment for PTSD include education, coping skills, exposure, and cognitive restructuring.
- Relapse prevention can include predicting times that are high risk for a specific patient and discussing strategies to reduce risk.

## Abstract

*Posttraumatic stress disorder (PTSD) is a common disorder that often occurs comorbid with depression and/or panic attacks. This article reviews the cognitive-behavioral treatment options for patients suffering from PTSD, including cognitive-processing therapy, stress inoculation training, prolonged exposure, and multiple-channel exposure therapy. A decision-making model for choosing treatment components that best meet each patient's needs is presented. Phases of treatment, including psychoeducation, coping skills, cognitive restructuring, behavioral task scheduling, relapse prevention, and evaluation, are discussed.*

## Introduction

Estimates of the prevalence of trauma and posttraumatic stress disorder (PTSD) in the general population indicate that both are significant problems in the United States.<sup>1,2</sup> Lifetime trauma exposure estimates indicate that 70% to 90% of the general population have experienced at least one traumatic event.<sup>1,2</sup> The current prevalence of PTSD is estimated to be as high as 14% in the general population,<sup>3</sup> with lifetime estimates as high as 25%.<sup>4</sup> Among certain disadvantaged groups, trauma exposure and PTSD may be even more prevalent.<sup>5</sup> For example, in an urban mental health center it was found that 94% of the clients had a history of trauma exposure and 42% had a diagnosis of PTSD.<sup>6</sup>

There are currently several effective cognitive-behavioral treatment choices available for PTSD. Research has supported the efficacy of stress inoculation training (SIT),<sup>7-8</sup> prolonged

exposure (PE),<sup>9-10</sup> cognitive-processing therapy (CPT),<sup>11-12</sup> and multiple-channel exposure therapy (M-CET).<sup>13</sup> Research on the efficacy of these treatments will be briefly reviewed and the components of these treatments will be explained. Finally, a model for decision making with regard to these treatments will be presented.

## Components of Cognitive-Behavioral Treatment for PTSD

SIT consists of three treatment phases: education, skill building, and application. The education phase includes information about how the fear response develops, information about sympathetic nervous system arousal, and instruction in progressive muscle relaxation. The skill-building phase emphasizes the development of coping skills and includes diaphragmatic breathing, thought stopping, covert rehearsal, guided self-dialogue, and role

playing. In the application phase of treatment, the goal is to have clients integrate and apply the skills they have learned and to use the following steps of stress inoculation: (1) assess the probability of feared event; (2) manage escape and avoidance behavior with thought stopping and the quieting reflex; (3) control self-criticism with guided self-dialogue; (4) engage in the feared behavior; and (5) self-reinforcement for using skills.

PE focuses on confronting the feared stimuli in imagination so that fear and anxiety decrease. This is similar to watching a frightening movie over and over. At first it may be very frightening, but by the 20th viewing it would not be as frightening. Analogously, replaying a frightening memory becomes less frightening as it is recounted numerous times in an objectively safe environment. Clients are also asked to confront fear cues that are not dangerous, but that may have been paired with danger at the time of the traumatic event. In vivo exposure to fear cues is used to extinguish the fear associated with these stimuli. This involves exposure to objects or situations in real life.

CPT, as described by Resick and Schnicke,<sup>14</sup> includes education regarding basic feelings and how changes in self-statements can affect emotions. Clients are also taught how to identify the connections between actions, beliefs, and consequences, and are asked to write accounts of the traumatic event and read it repeatedly. In addition, several of the sessions focus on developing skills to analyze and confront maladaptive self-statements

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regarding the traumatic event. This is followed by a series of sessions which cover the impact of trauma on beliefs about safety, trust, esteem, power/competence, and intimacy.

M-CET includes psychoeducation about trauma, PTSD, and panic. Clients are taught to look at the evidence for their beliefs and to identify when they are overestimating the risk of a negative outcome, catastrophizing, overgeneralizing, basing their thoughts on feelings instead of facts, and disregarding important aspects of a situation. Exposure is conducted through having clients write about their trauma and developing hierarchies of feared activities. Exposure to panic symptoms is done by interoceptive exposure, which includes exercises such as stair stepping and head shaking that may bring on panic-like sensations.

The treatment packages described have many components in common, as well as some components that are unique to each treatment. All of these treatment packages have an educational component. Each of these treatment packages also has exposure components. SIT offers coping skills components that

are unique to this treatment package. CPT and M-CET each have cognitive components that are not a part of prolonged exposure therapy or SIT.

Table 1 outlines the various components of these treatment packages that can be used to generate treatment alternatives to develop a treatment package that best meets each patient's needs.

### Guidelines for Treatment

The following guidelines are offered for the decision-making process of PTSD treatment. However, it should be cautioned that this process is based on clinical experience and is in need of empirical testing. First, as noted in Table 1, all of the PTSD treatments have a psychoeducational component. Which psychoeducational component is most appropriate can be determined by the patient's diagnosis and any comorbid disorders. For example, if a patient suffers from PTSD with comorbid depression, then the CPT psychoeducational component would be the most appropriate fit because it provides information about both PTSD and depressive symptoms, whereas if the patient suffered from comorbid

panic attacks, the psychoeducational component from M-CET would be most relevant. Table 2 presents a summary of the phases of treatment and the decision-making process.

After choosing the most appropriate educational component for treatment, the patient's coping skills and overall level of distress need to be considered. If the patient has very few coping skills, or relies on dysfunctional coping skills such as overeating or substance abuse, providing positive coping skills, such as diaphragmatic breathing or guided self-dialogue, would be an appropriate next step. Furthermore, if the patient's distress level is so high that he or she is having great difficulty disclosing any details about the traumatic event(s), cannot concentrate on what you are doing in session, or is in an acute crisis mode of functioning, then teaching coping skills from SIT before moving on to exposure-based work will assist in reducing anxiety enough that the exposure component may be better tolerated.

The coping skills of SIT can also be targeted to replace substance abuse if the patient is self-medicating. Of course, if there is an indication of physical dependence on a substance, then referring for detoxification and substance abuse treatment prior to trauma-focused treatment may be needed. In many cases, however, trauma victims have increased their substance abuse to lessen anxiety but are not physically dependent. In these cases, substituting healthier coping skills can result in a decrease in substance abuse.

The next component of treatment to be considered is the exposure component. If the patient experiences panic attacks, then conducting interoceptive exposure to the panic symptoms would be the first step in the exposure process. If the patient does not suffer from panic attacks, then prolonged imaginal exposure through either writing or verbal retelling of the event would be the next step to consider in treatment. These two forms of exposure have never been compared to determine if one is more effective than the other, or if one works better with certain types of patients. However, there are some common-sense considerations that may assist in choosing one over the other. For instance, finding out if the patient likes to write or if she or he has good imagery skills, as

**Table 1**  
**Main Components of PTSD Treatment**

#### Educational Components

1. Education about fear and anxiety (SIT)
2. Education about PTSD (PE, CPT, M-CET)
3. Education about depressive symptoms (CPT)
4. Education about panic symptoms (M-CET)

#### Coping Skills Components

1. Diaphragmatic breathing (SIT, MCET)
2. Thought stopping (SIT)
3. Covert rehearsal (SIT)
4. Guided self-dialogue (SIT)
5. Progressive muscle relaxation (SIT)

#### Exposure Components

1. Writing about the traumatic event (CPT, M-CET)
2. Imaginal exposure (PE)
3. In vivo exposure to trauma and/or panic-related cues (SIT, M-CET)
4. Interoceptive exposure to physical symptoms (M-CET)

#### Cognitive Restructuring Components

1. Education about ABC model of connection of events, thoughts, and feelings (CPT, M-CET)
2. Challenging of distorted cognitions regarding the trauma(s) (CPT, M-CET)
3. Challenging of distorted cognitions regarding panic symptoms (M-CET)
4. Addressing specific issues of safety, trust, power, esteem, and/or intimacy issues (CPT, M-CET)
5. Challenging of distorted cognitions associated with depression (CPT)

PTSD=posttraumatic stress disorder; SIT=stress inoculation training; PE=prolonged exposure; CPT=cognitive-processing therapy; M-CET=multiple-channel exposure therapy.

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well as talking about both options with the patient, are important in deciding which form of exposure to implement.

In addition to education, coping skills, and exposure, correcting distorted cognitions is an important element of treatment for PTSD. How much of a focus this requires can be determined from our assessment of cognitions and symptomatology. Depression has been associated with cognitions of helplessness and hopelessness, which may need to be addressed if the patient experiences

comorbid depressive symptoms. If the patient suffers from panic attacks, then addressing panic-related cognitive distortions in addition to trauma-related distortions should be an important component of treatment. CPT offers modules on safety, trust, power/competence, esteem, and intimacy specific to rape victims, that can be used to address trauma-related distortions on these issues. M-CET offers similar modules that are written for more general use with a wide range of civilian trauma victims.

**Table 2**  
**Phases in PTSD Treatment and the Decision-Making Process**

Psychoeducational Phase

1. Education about PTSD
2. If patient has comorbid disorder, provide education about that disorder  
Otherwise, move on to coping skills phase

Coping Skills Phase

1. If patient has panic attacks, teach diaphragmatic breathing
2. If patient has poor coping skills or extremely high anxiety, teach coping skills from SIT
3. If patient has adequate coping skills, skip the coping skills phase and move on to imaginal exposure phase

Imaginal Exposure Phase

1. If patient has comorbid panic attacks, conduct interoceptive exposure to panic symptoms prior to conducting trauma-related exposure
2. If patient has good imagery skills, initiate prolonged imaginal exposure to traumatic events
3. If patient prefers writing and does not have good imagery skills, initiate writing exposure to traumatic events

Cognitive Phase

1. Provide education about how events, thoughts, feelings, and behaviors are connected
2. Teach patient to challenge any trauma, panic, or depression-related cognitive distortions
3. Assist patient in implementing cognitive restructuring skills to relevant schema (eg, safety, trust, power/competence, esteem, and/or intimacy)

Behavioral Task Scheduling Phase

1. Implement exposure to panic-related cues (if patient has comorbid panic attacks) prior to trauma-related in vivo exposure
2. Develop hierarchies for trauma-related cues and implement in vivo exposure

Relapse Prevention Phase

1. Predict for patient times that are high risk for relapse (times of high stress, confronting reminders, developmental phases)
2. Discuss strategies to reduce risk (reviewing materials, implementing coping skills, booster sessions)

Evaluation Phase

1. Review course of panic attacks for patients with comorbid panic attacks
2. Review course of depressive symptoms for patients with comorbid depression
3. Review course of substance use for patients with substance abuse
4. Review course of PTSD symptoms
5. Conduct posttreatment assessment
6. Make decisions about further treatment versus termination

PTSD=posttraumatic stress disorder; SIT=stress inoculation training.

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The next step of treatment is behavioral task scheduling and in vivo exposure to trauma-related conditioned cues to further reduce any remaining avoidance behaviors. For patients with panic attacks, this would also include conducting in vivo exposure to panic-related situations. In vivo exposure can be conducted by having the patient choose three target behaviors. Together patient and therapist develop hierarchies for in vivo exposure to the chosen behaviors. Patients then work their way up the hierarchies beginning with the target behavior associated with the least amount of anxiety.

The relapse-prevention phase of treatment includes the tasks of predicting for the patient times that are high risk for relapse (times of high stress, confronting reminders, developmental phases) for the patient as well as discussing strategies to reduce risk (reviewing materials, implementing coping skills, booster sessions).

### Evaluating the Effectiveness of Treatment

The effectiveness of treatment can be evaluated during treatment or after treatment is completed. M-CET offers the PTSD Daily Symptom Checklist<sup>15</sup> that allows patients to indicate the number of PTSD symptoms experienced each day. This is averaged over the week and charted each week on a graph along with the number of panic attacks experienced each week. If panic attacks are a part of the symptom profile, the number of panic attacks each week can also be monitored and charted over the course of treatments. Subjective Units of Distress ratings are useful for interoceptive, imaginal, and in vivo exposure to evaluate progress. The PTSD Symptom Scale<sup>16</sup> or the Modified PTSD Symptom Scale<sup>17</sup> are also options; these assess symptoms for the 2 weeks prior to administration. The Beck Depression Inventory<sup>18</sup> can be given periodically during the session to assess depressive symptoms during the course of treatment.

After treatment completion, a thorough evaluation of all relevant symptomatology, coping skills, and cognitions should be conducted. If the patient continues to suffer from significant symptoms, then additional treatment may be warranted. The decision-making process can be reactivated to again

determine which components may be most relevant for any remaining symptoms. For example, a patient may no longer be suffering from any re-experiencing or arousal symptoms, but may still be quite avoidant. In this case, further *in vivo* exposure may be necessary. In other cases, PTSD symptoms may have decreased but perhaps depressive symptoms may not have significantly decreased. Further work with distorted cognitions or treatment that is more focused directly to the treatment of depression may be needed.

If CPT was used and the patient had difficulty doing homework, consider simplifying the homework to meet the patient's needs. Falsetti and Resnick<sup>15</sup> have simplified the cognitive worksheets for use in M-CET and find these to be effective in addressing distorted cognitions. If PE was used and the patient could not tolerate exposure, then the patient may need to learn coping skills to tolerate the high levels of affect and arousal before continuing with exposure. If the patient could not tolerate exposure due to fear of physical reactions, the use of education about panic attacks and interoceptive exposure should be considered. This will provide education and exposure to the physical sensations prior to trauma exposure, thereby making the physical arousal symptoms less fearful.

### Empirical Findings

Veronen and Kilpatrick<sup>7</sup> reported that SIT was effective in treating fear, anxiety, tension, and depression. They conducted a comparison, utilizing SIT, peer counseling, and systematic desensitization. They found that the clients who completed SIT had improved from pre- to posttreatment, but unfortunately no comparisons among treatments could be conducted.

Foa and colleagues<sup>9</sup> compared SIT, PE, supportive counseling, and a no-treatment control group. The SIT approach in their study differed from that described by Kilpatrick and colleagues<sup>8</sup> in that it did not include instructions for *in vivo* exposure to feared situations. Foa and colleagues<sup>9</sup> reported that all of the treatments utilized led to some improvement in anxiety, depression, and PTSD. SIT was indicated to be the most effective treatment for PTSD at immediate follow-up, whereas at a 3.5-month follow-up, clients who had participated

in the exposure treatment had fewer PTSD symptoms.

More recently, Foa and colleagues<sup>10</sup> conducted another study comparing PE, SIT, and the combination in female assault victims. As in the previous study, SIT was modified by excluding the *in-vivo* exposure component, so as not to be confounded with PE. Results from the intent-to-treat sample indicated that PE was superior to SIT and PE-SIT on posttreatment anxiety and global social adjustment at follow-up and had larger effect sizes on PTSD severity, depression, and anxiety. SIT and PE-SIT did not differ significantly from each other on any outcome measure. Results using only treatment completers indicated that all three active treatments reduced PTSD and depression compared to women randomly assigned to a wait-list control group and that these gains were maintained at 3-, 6-, and 12-month follow-ups.

In addition to the comparison studies by Foa and colleagues,<sup>9,10</sup> other researchers have also indicated the efficacy of flooding therapy. Marks and colleagues<sup>19</sup> completed a controlled study comparing PE alone, cognitive restructuring alone, combined PE and cognitive restructuring, and relaxation without prolonged exposure or cognitive restructuring. They found that exposure alone, cognitive restructuring alone, and exposure plus cognitive restructuring all produced marked improvement and was generally superior to relaxation training alone. Therapists conducting the treatment reported that doing the combination treatment was more difficult than doing either alone. Interestingly, combining these two treatments did not appear to enhance treatment effects. However, similar to the study by Foa and colleagues,<sup>10</sup> the combination treatment was given in the same amount of time as the other treatments alone, thus participants may not have had enough time to thoroughly integrate all they had learned.

Resick and colleagues<sup>20</sup> compared six 2-hour group sessions of SIT, assertion training, and supportive psychotherapy plus information, and a wait-list control group. They reported that all three treatments were effective in reducing symptoms, with no significant differences between treatments. The clients on the wait list control did not improve. At a 6-month follow-up, improvement was

maintained in relation to rape-related fears, but not on depression, self-esteem, and social fears.

Results of CPT, which is primarily a cognitive treatment for PTSD have been promising. Resick and Schnicke<sup>11</sup> reported significant improvements with CPT on depression and PTSD measures pretreatment to 6 months post-treatment for 19 sexual assault survivors who were at least 3 months post-rape at the start of treatment. Therapy was conducted in group format over 12 weeks and a waiting list control group was also employed (n=20). Rates of PTSD went from a pretreatment rate of 90% to a posttreatment rate of 0%. Rates of major depression decreased from 62% to 42%. Further evaluation of the treatment indicates usefulness of both group and individual formats, with somewhat higher efficacy for treatment administered in individual sessions.<sup>14</sup> More recently, Resick and colleagues<sup>12</sup> compared CPT to PE and a wait-list control group. Results of this study indicated that both active treatments were efficacious and superior to the wait list.

Preliminary results from a controlled treatment outcome study comparing M-CET to a wait-list control group<sup>13</sup> indicated that this may be an effective treatment for PTSD and panic attacks. Future research will need to be conducted to evaluate efficacy relative to other treatments for PTSD that have known efficacy, including prolonged exposure. In the initial study<sup>13</sup> participants were randomly assigned either to 12 weeks of once-weekly M-CET group therapy (n=12) or a minimal attention group (n= 15) that received bimonthly supportive phone counseling. Participants reported a range of multiple traumatic events and the treatment groups were not restricted to those who had experienced one type of event. All participants were women who met criteria for current PTSD and panic attacks at least 3 months posttrauma.

At posttreatment, only 8.3% of subjects in the M-CET treatment condition met criteria for PTSD according to the Clinician Administered PTSD Scale<sup>21</sup> compared to 66.7% of subjects in the minimal attention control group, indicating a significant difference at post-treatment between the treatment and comparison groups. Analyses also revealed that panic attacks and related symptoms decreased significantly.

At the posttreatment evaluation, 93.3% of the minimal attention control group subjects reported experiencing at least one panic attack in the past month, compared to only 50% of the treatment group ( $\chi^2 [1, N=25]=6.51, P<.01$ ). Data also indicated that those in the treatment group reported significantly less frequent panic attacks compared to the control group over time as well as less fear of panic attacks and less interference with activities due to panic symptoms. Both groups improved significantly over time in terms of symptoms of depression.

## Conclusion

There are now several effective cognitive-behavioral treatments available for PTSD and common comorbid disorders. These include SIT, CPT, PE, and M-CET. As always, it is important to first conduct a thorough assessment of trauma history, symptoms, coping skills, and cognitions before considering treatment options. However, there is very little empirical research that investigates matching client variables to treatment components. Until such research is conducted, using a decision-making model such as is illustrated here, can assist the therapist in choosing treatment components to fit each client's needs. Future research testing the effectiveness of a decision-making model is needed. *PP*

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