Cognitive-Behavioral Therapies for Psychological Trauma and Comorbid Substance Use Disorders

Casey O'Donnell, MA
Joan M. Cook, PhD

SUMMARY. In this chapter, a brief explanation of the CBT conceptualizations for PTSD and associated substance abuse are presented and several of the most prominent traditional CBT interventions are discussed. More contemporary CBT interventions such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and Dialectical Behavioral Therapy (DBT; Linehan, 1993) are discussed in the latter section of this chapter.

KEYWORDS. Cognitive-behavioral therapies, psychological trauma, comorbid substance use disorders

Utilizing a cognitive-behavioral approach to the conceptualization and treatment of posttraumatic stress disorder (PTSD) and concomitant substance use disorders (SUD) is both empirically indicated and is intu-

[Haworth co-indexing entry note]: "Cognitive-Behavioral Therapies for Psychological Trauma and Comorbid Substance Use Disorders." O'Donnell, Casey, and Joan M. Cook. Co-published simultaneously in *Journal of Chemical Dependency Treatment* (The Haworth Press, Inc.) Vol. 8, No. 2, 2006, pp. 15-39; and: *Psychological Trauma and Addiction Treatment* (ed: Bruce Carruth) The Haworth Press, Inc., 2006, pp. 15-39. Single or multiple copies of this article are available for a fee from The Haworth Document Delivery Service [1-800-HAWORTH, 9:00 a.m. - 5:00 p.m. (EST). E-mail address: docdelivery@haworthpress. com].

Available online at http://www.haworthpress.com/web/JCDT

doi:10.1300/J034v08n02_02

itively sound in practice. Existing research indicates that various cognitive-behavioral therapies (CBT) show promise in the efficacious and effective treatment of individuals who suffer from trauma-related psychiatric disorders, including but not limited to PTSD and SUD. The CBT tradition has a long history in the intervention for fear reactions, and offers scientifically-informed conceptualizations of the etiology of PTSD and treatments for the associated fear networks, avoidance strategies, learning contingencies and maladaptive belief systems of the individuals suffering from PTSD and SUD (see Harvey, Bryant, & Tarrier, 2003 for a review of randomized clinical trials of CBT for PTSD and Irvin, Bowers, Dunn, & Wang, 1999 for a review for SUD).

Since its beginnings in the 1960s, the behavior therapy movement has pledged itself to the design of psychological interventions using empirical data and well-known behavior principles. Under the umbrella of CBT, there are a multitude of approaches; however, standard theory and practice primarily focuses on cognitions (such as, "The world is a dangerous place" and "I am incapable of managing danger"), and behaviors (such as managing physiological anxiety and systematically facing fearful situations). Over the last decade emerging developments in the CBT tradition are leading to the inclusion of dialectics, spirituality, acceptance and mindfulness-based conceptualizations and interventions (Hayes, 2004). The premises and practices of this "third-wave" of behaviorally-informed therapies may represent an evolution or a revolution against limitations of standard CBT.

In this chapter, a brief explanation of the CBT conceptualizations for PTSD and associated substance abuse are presented and several of the most prominent traditional CBT interventions are discussed. More contemporary CBT interventions such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and Dialectical Behavioral Therapy (DBT; Linehan, 1993) are discussed in the latter section of this chapter.

INTRODUCTION TO THE COGNITIVE-BEHAVIORAL THERAPY MODEL

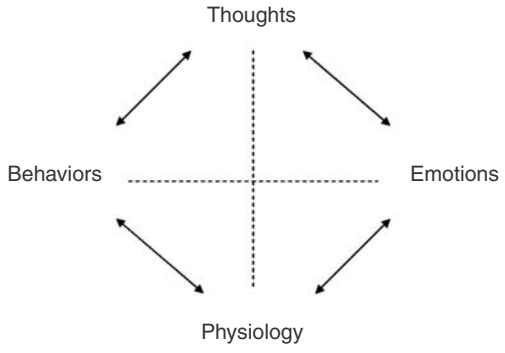
Understanding current cognitive-behavioral practices depends on an examination of the principles of CBT and the associated conceptualizations of PTSD and SUD. Though standard CBT includes a plethora of techniques ranging from the cognitive work of Beck and colleagues (Beck, Rush, Shaw & Emery, 1979) to the behavioral work of Lewin-

sohn (Lewinsohn, Biglan & Zeiss, 1976), its most common and contemporary application is a blend of both cognitive and behavioral techniques.

The foundation of CBT is based on the premise that psychopathology results from maladaptive or distorted thinking which affects both emotion and behavior. In turn, emotions and/or behaviors can reciprocally and cyclically affect thoughts which are reflective of distorted beliefs regarding self, world, and others. Patterns of behaviors are believed to be established and maintained by an individual's history of learning (both operant learning and classical conditioning). These learning patterns often result in impaired functioning later in life. Criticism of CBT has historically focused on the perceived minimizing of the role of emotion; however, on the contrary, emotions are believed to be linked directly to cognition and are thought to be part of the stimulus-response chain that drives both adaptive and maladaptive behaviors.

As depicted in Figure 1, the cognitive-behavioral model accounts for thoughts, emotions, physiological experiences, and behaviors. This model is not linear and conceivably a line could be drawn between any of these elements. That is to say each of these factors can act as a stimulus as well as serve as a response. Take for example a person who intermittently has intrusive images of a recently experienced severe motor vehicle accident. At the end of the day, this person may be at work staring at the clock on the wall. In that moment, the person may be anticipating driving home and may think "there will be a lot of traffic on the road tonight," which may lead to the intrusive image of the accident and stim-

FIGURE 1. Cognitive-Behavioral Model



ulate feelings of anxiety, including increased heart rate. The individual's negative pattern may continue to spiral by stimulating additional thoughts of future dangerous driving conditions as well as the previous car accident (e.g., intrusive thoughts or flashbacks). These thoughts, emotions and physiological experiences might easily lead to the person waiting past rush hour to go home from work or perhaps contribute to the person having an alcoholic beverage in order to "relax" and suppress the stressful reaction (specifically physiological responses). This brief description exemplifies how negative thinking associated with previous learning negatively impacts the functioning of the client. Thus the goal of the traditional CBT therapist is to facilitate the identification, examination, and management of thoughts, associated emotions, physiological responses, and behaviors.

EXPLANATORY THEORIES OF PTSD AND SUBSTANCE ABUSE

The various cognitive-behavioral theories that have emerged to explain the establishment and maintenance of PTSD and SUD are rooted in behavioral learning theories, specifically how the pairing of stimuli, thoughts, fear, and both emotional and experiential avoidance occurs. The following theories (operant learning, classical conditioning, two-factor theory, social cognitive theory, information processing, and duel representation theory) clearly overlap and they each continue to adequately explain at least some portion of trauma-related pathology.

Substance use among other avoidant behaviors is considered by some investigators to be an *operant behavior* learned and reinforced by contingencies that are physiological, cognitive, emotional, and environmental. Often this reinforcement is negative (the removal of painful stimuli) as the use of drugs and/or alcohol provide a means of emotional and experiential avoidance of distressing internal or external events (i.e., distressing symptoms or situations). For example, in the situation described above, drinking alcohol was used to temporarily "relax" when anxiety was provoked by thoughts of the car accident. Conversely, substance use may be positively reinforced (rewarded) as substances might facilitate a sense of control, improve perception of social interactions, or facilitate the expression of emotion such as anger related to trauma (Ruzek, Polusny, & Abueg, 1998). Avoidance of anger may also be accomplished through other maladaptive behaviors such as self-isolation. For example, if a combat veteran finds that he can avoid yelling at his

wife by being alone, he might end up isolating himself constantly to ensure avoiding his negative emotions and his interpersonally destructive behaviors.

Classical conditioning in the case of PTSD describes the pairing of stimuli in the environment (either externally observed such as sounds or imagined such as thoughts and mental images) and the actual feelings associated with the traumatic event (often described as reexperiencing). In the previous example, classical conditioning could explain how thoughts of driving or perhaps the sound of tires screeching could cause a fear reaction. Sitting in his/her office, there was no actual threat in the environment, however, the thought or sound adopted the stimulus properties of the accident.

Rohsenow, Childress, Monti, Niaura, and Abrams (1990) describe substance abuse and relapse to use as a classically conditioned (rather than operantly learned) set of behaviors. Certain stimuli that become paired with use, such as having a drink of alcohol when intrusive flashbacks of a motor vehicle accident occur, become stimuli which evoke the unconditioned response of urges or heightened anxiety due to a lack of substance in the body. Therefore, a client suffering from comorbid PTSD-SUD might not only experience anxiety when he has a trauma-related intrusive thought, but he might also experience an urge or craving for alcohol which further exacerbates the experience. Existing research indicates that when individuals with PTSD-SUD are exposed to trauma-related stimuli, they experience greater levels of withdrawal symptoms (Peirce et al., 1996) than individuals with only one disorder. Those who suffer from PTSD are also thought to experience greater levels of negative emotional intensity and emotional dysregulation due to their trauma exposure (Najavits, Weiss, & Liese, 1996; Taylor, Koch, & McNally, 1992), therefore substance use may be viewed by the patient as a "relief" from a range of negative emotions. In CBT conceptualization, this is viewed as substance use becoming a powerful reinforcer (Villagomez, Meyer, Lin, & Brown, 1995).

Mowrer's two-factor theory (1960) includes both classical conditioning as the means by which fear is acquired and operant learning as the means by which it is maintained. According to this theory, the avoidance resulting from operant learning does not allow normal extinction of conditioned responses because of negative reinforcement (Resick & Calhoun, 2001). That is to say, if someone has a drink every time they have a traumatic flashback, their anxiety will not have a chance to decrease naturally. This is directly associated with the CBT exposure-based techniques which are explained later in this chapter.

Social cognitive theory explains the impact of cognitions within the social context. Although it partly focuses on information processing, it is more concerned with the individual's belief structure and how that structure was impacted by the traumatic events. Therefore interventions are structured around how to "reconcile the traumatic event with prior beliefs and expectations" (Follette, Ruzek, & Abueg, 1998, p. 63). Other social-cognitive theorists conclude that the traumatic experience shatters the individual's beliefs about the world and self. For example, Janoff-Bulman (1992) claimed that traumatic experiences can destroy positive assumptions about the world and self. Bolton and Hill (1996) described how traumatic incidents can have a significantly negative effect on self perception related to one's competence and may leave an individual feeling helpless. Therefore the task of therapy is the development or reconstruction of an adaptive/healthy belief system.

In addition to the examination of thoughts and beliefs, Resick and Schnicke (1993) proposed that the result of trauma also included primary and secondary emotions. Primary emotions are the emotions experienced during the trauma event(s) such as fear, and secondary emotions are those which result from later interpretations of the event such as guilt. Expression and resolution of these emotions is also fundamental for integration and complete processing of traumatic material. These theorists believe that secondary emotions along with intrusive thoughts dissipate as beliefs are challenged and primary emotions are experienced and understood.

Although learning theories continue to offer premises from which to base treatment, Mowrer's two-factor theory does not appear to adequately explain all intrusive recollections in conscious and sleeping states. Chemtob, Roitblat, Hamada, Carlson and Twentyman (1988) proposed that trauma-related memory is unique and is not "processed" like other memories, resulting in psychopathology. *Information processing theories* postulate that trauma-related material needs to be integrated within the wider memory system. Unlike the social-cognitive model, this inability to integrate information is due to the traumatic experience itself rather than preexisting beliefs.

Thus, Foa, Steketee, and Rothbaum (1989) proposed that a fear network is developed in memory which initiates escape and avoidance behaviors. This fear structure includes stimuli, responses and also schemata (ingrained beliefs which are a lens through which events are examined and explained). Over time this network is cued by various stimuli in the environment including events, people, places, sounds, etc., which are thought to be associated with the trauma. Therefore when the

network is triggered, intrusive thoughts, beliefs and images enter into consciousness or dreams. This process is thought to result in avoidant behavior. In part this system is quite functional in that it promotes survival. For example, if an individual was attacked by a dog it would be adaptive to have a fear network that is triggered by any future potential dog attacks.

According to *information processing theory*, exposure to the content of the traumatic memories will result in habituation to the memory, therefore decreasing the experience of fear and changing the fear structure. These changes also include changes in beliefs regarding self (Resick & Calhoun, 2001). Foa et al. (1989) added that traumatic incidents are so influential that they change previously held beliefs regarding safety, and create fear networks that are adaptively stronger than other response networks resulting in PTSD symptoms. They also claimed that these networks have a lower threshold for activation. More recently, Foa and Riggs (1993) and Foa and Rothbaum (1998) have expanded this theory to "*emotional processing*" to explain what occurs during exposure-based therapies and to address how rigidity in thinking affects the etiology of PTSD.

Brewin, Dalgleish and Joseph (1996) introduced a *dual-representation theory* in an effort to integrate information processing and social-cognitive theory. Dual representation theory postulates that conscious memories can be intentionally retrieved and are called "verbally accessible memories" (VAMs). These memories include sensory information, information regarding memory and physiological experience and beliefs regarding the events. These memories are believed to be narrow in range due to the limits of attention during traumatic experiences. Memories that are less accessible are called "situationally accessed memories" (SAMs). This type of memory may be more extensive, but only come into consciousness when they are cued by trauma-related stimuli including thinking about the trauma. This type of memory is considered intrusive memory or intrusive sensory recall of the traumatic event (Brewin & Holmes, 2003).

Similar to the social cognitive model, this theory proposes that there are two categories of emotional reactions. The first type of emotion is that which is conditioned during the traumatic event and often includes fear or anger. The second type of emotion results from interpretation of the traumatic event or associated primary emotions. Like the example in social-cognitive theory this might include, for example, guilt (Rothbaum, Meadows, Resick, & Foy, 2000).

Emotional processing of these memories includes cognitive restructuring through exposure to SAMs along with the challenging of thoughts and relaxation or habituation exercises for the physiological components of anxiety. The social-cognitive portion of the intervention includes regaining a sense of control or meaning through examination and challenging of beliefs regarding the traumatic experience. This would include an effort to resolve cognitive dissonance between beliefs and expectations which existed prior to the event and meaning of the event(s) (Resick & Calhoun, 2001).

CBT TREATMENT MODELS AND TECHNIQUES

PTSD symptoms and substance abuse are often intertwined, yet their treatment is frequently separate and sequential. Often depending on severity, many clinicians require that a client obtain treatment for their substance abuse or dependence first and maintain a period of abstinence prior to entering into treatment for PTSD. This is thought to be in the best interest of the client, as the treatment of trauma-related symptoms is at times intensely fear provoking and often requires adaptive and positive coping strategies. Recently, however, treatments have begun to emerge which, in an integrative fashion, address both PTSD and substance abuse simultaneously. This section will first offer the foremost treatment methods for SUD and PTSD separately, then will address contemporary integrative models.

CBT FOR SUBSTANCE USE DISORDERS

CBT focuses on current, as opposed to historical, factors that maintain drinking. This continues to be true in the case of trauma-related stress symptoms, as these are a current problem despite the historical event. This approach reflects patterns of learning as substance use results from external antecedents due to pairing with positive or negative reinforcement or the anticipation thereof. Therefore individuals may drink to feel better or drink in the hopes of not feeling bad. Both cognition and emotion mediate the relationship between triggers (stimuli) and substance abuse (response).

McCrady (2001) lists seven considerations when treating a substance abusing client which include problem severity, concomitant life problems, client expectations and motivation, therapeutic relationship, vari-

ables maintaining the current drinking system, and maintenance of change. These factors, although relevant, are embedded in the concrete CBT approach which depends on thorough initial and ongoing assessment, motivation and relapse prevention.

Assessment in CBT treatment is an ongoing process, but initially defines targets for intervention. Assessment is a collaborative effort in that successful treatment will depend on the client's ongoing self-monitoring and honest accounting of substances used including frequency and quantity. Most salient to treatment and the structure for self-monitoring is the functional analysis. This analysis, which is used throughout treatment, including during relapse prevention, is an identification (and often recording as part of homework) of what functions the substance use has and under what conditions. This occurs by identifying the antecedent condition, thoughts, emotions, physiological responses, behaviors and outcomes. Often this process begins with the behavior and it may take time for the client to be able to identify and separate other factors. For instance, initially a client might only be able to identify, "I drank last night." With further examination and practice the client reveals, "I drank last night because I was feeling anxious," then "I drank that night because I was feeling anxious after I watched a movie that reminded me of my trauma" and so on.

McCrady (2001) described a "SORC" model for functional assessment which stands for **S**timuli, **O**rganismic factors (thoughts, emotions, physiological experiences like cravings, anxiety, negative self-evaluation), **R**esponses (drinking) and **C**onsequences of drinking that maintain behavior. This model is not specific for substance abuse and can be used in any behavioral analysis. Once this chain of events is identified the therapist and client intervene directly on the behaviors, but additionally on the thinking and the physiological responses (urges and the physiological component of anxiety). Marlatt and Gordon (1985) described the management of urges through acceptance-based approach (e.g., urge surfing) or action-oriented imagery (e.g., attacking urge with a sword; see Hester & Miller, 1995).

The cognitive component includes addressing cognitive distortions. For example, an individual may believe that drinking enables him/her to forget. Since complete removal of traumatic event from memory is near impossible, identification of reminders and triggers is essential to treatment. If a client learns to identify what triggers their use and their comorbid trauma-related symptoms, they can either not put themselves in situations which present triggers or learn to cope more effectively

with triggers. This identification is a large portion of relapse prevention. Abueg and Fairbank (1992) described relapse prevention applied to substance use and PTSD, which includes psychoeducation and identification of stressors.

Because substance abuse affects an individual's ability to use sound judgment, it is essential to facilitate the use of more effective coping strategies for both substance use and PTSD symptoms. New coping strategies may include the challenging of automatic thoughts and irrational responses or finding other sources of positive reinforcement. For many substance abusers, positive reinforcement may occur in the form of social support. This support is essential to successful treatment and may be accessed through family or friend networks or often through programs such as Alcoholics Anonymous. Sober social support is essential in that one frequent trigger is interaction with other people who use. Participation in a support group may also prevent social isolation or detachment which is often a symptom of PTSD.

PTSD and SUD are often associated with interpersonal difficulties, which could pose a problem for both group and individual interaction (also in establishing a therapeutic relationship). It is also possible that a client wants help with PTSD symptoms but does not want treatment for their substance use (or vice versa). In this case, the client and therapist must assess the pros and cons of substance use and focus on motivation for treatment. Miller and Rollnick (1991) offer non-confrontational motivational techniques. These authors claimed that the elements to enhance motivation are represented by the acronym "FRAMES" which is **F**eedback, emphasis on **R**esponsibility of the client for change, clear **A**dvice about the need for change, **M**enu of client options and **E**mpathy and enhancing **S**elf-efficacy. At a minimum, motivational techniques appear to assist in the process of moving through the stages of change that are widely acknowledged in SUD treatment.

The proponents of the stage model have observed though practice and empirical study that tailoring both the intervention and the therapeutic relationship to the client's identified stage of change can enhance outcome as measured by attrition and success of treatment (Ackerman et al., 2001). Prochaska, DiClemente, and Norcross (1992) offer a six stage model to understand the processes of behavioral change for the SUD client. These six stages include precontemplation, contemplation, preparation, action, maintenance and termination. Individuals progress through each stage which includes a specific set of tasks to be achieved, although different clients proceed through each stage at different rates. Addition-

ally, it is believed that these stages of change occur for people who are attempting to overcome their SUD behaviors on their own without professional intervention (Prochaska et al., 1992). Identification of which stage an individual is in can be accomplished through a discrete categorical measure (DiClemente et al., 1991) or a continuous measure which results in scales for each stage (McConnaughy, Prochaska, & Velicer, 1983).

The first precontemplation stage is typified by a client's refusal to admit their problematic SUD use and thus refusal to seek treatment on their own; rather he/she is most often pressured into treatment because of family, friends, or the court system (Prochaska & Norcross, 2001). Once this pressure is removed, the client typically returns to SUD use and other problematic behaviors (Prochaska et al., 1992). Contemplation, the second stage, hinges on the client's awareness that a problem exists and consideration to address the problem, yet is devoid of any effort or commitment to do so. These clients can often be classified by their stating that they intend to take action within the next six months. This stage relies mostly on consciousness raising, self-reevaluation, readiness and decision making (Prochaska & Norcross, 2001). People are known to get stuck in contemplation for a considerable length of time (Prochaska et al., 1992). The third stage is preparation. This includes not only the commitment to take action within the following month, but also the client's having made unsuccessful attempts at overcoming the problem within the past year.

Often the most difficult stage is the following, which is action. During this stage, an individual must make identifiable behavioral changes that are maintained between one day and six months. Prochaska and colleagues (1992) warn therapists not to utilize insight-based techniques during this stage because although necessary for long term maintenance, insight has been shown to be insufficient for behavioral activation or change. This stage requires management of reinforcement contingencies, stimulus control, and "counterconditioning" (Prochaska & Norcross, 2001). The maintenance stage is considered to be continuous behavioral change for greater than six months, where the focus is on relapse prevention. Termination, the last stage, is completion of the intervention with successful prevention of relapse in situations identified as high risk and the absence of SUD urges.

Cognitive techniques are most often utilized in precontemplation and contemplation stages, whereas behavioral techniques are frequently applied in the action and maintenance stages (Norcross, 1993). Prochaska

and Norcross (2001) explain that only 10% to 20% of clients are prepared for action and advise therapists to be cautious in initiating action-oriented interventions. Thirty to forty percent of clients are thought to be in contemplation stage, while the remaining (50%-60%) are in precontemplation (Prochaska & Norcross, 2001). Therefore, therapists must be aware of reasonable treatment goals and proceed according to clients' stage. Additionally, individuals may spiral through stages, and can work through stages several times (Prochaska et al., 1992) often depending on the severity of use. The therapeutic relationship is viewed as essential and requires matching the stage to appropriate interpersonal approach (Norcross, 1993), especially in the case of a client who has lapsed back to use. The APA Division of Psychotherapy Task Force supports this matching and makes additional recommendations regarding client therapist relationships, including tailoring the relationship to the client's diagnosis (Ackerman et al., 2001).

CBT FOR PTSD

In a wide-ranging review of the psychosocial interventions for PTSD, CBT was found to be the most efficacious treatment approach (Foa, Davidson, & Frances, 1999; Foa, Keane, & Friedman, 2000). Of these, the most extensively studied in controlled trials across trauma populations is *exposure therapy* (for review, see Rothbaum, Meadows, Resick, & Foy, 2000). Exposure therapy is a class of treatments that includes imaginal and/or in vivo confrontation with the traumatic memories and with avoided trauma reminders.

One exposure-based therapeutic program, *prolonged exposure* (PE), consists of four components: psychoeducation, breathing retraining, imaginal exposure and in vivo exposure (Foa & Rothbaum, 1998). PE is usually administered in 9 to 12, 90-minute sessions on a once or twice a week basis. The first session comprises presentation of the treatment rationale and goals, description of procedures, and discussion about the traumatic event(s) and associated symptoms, particularly, the reexperiencing and avoidance symptoms. It is explained that PE includes two exposure procedures: imaginal exposure and in vivo exposure. In imaginal exposure clients are asked to close their eyes and give a present tense detailed descriptive account of the traumatic event for 30-60 minutes, including accompanying thoughts and feelings. In in vivo exposure clients are asked to identify situations or objects that are trauma-related

and fear-evoking, but inherently safe (e.g., for motor vehicle accident survivors, driving or riding in a car). These situations or objects are then arranged in a hierarchy according to how much psychological and physiological distress they induce. Subsequently, clients are encouraged to confront these situations or objects systematically, beginning with those that provoke moderate fear and proceeding to those more fear-evoking on the hierarchy.

The treatment rationale for imaginal exposure is that it facilitates emotional processing of trauma by allowing the patients to revisit the details of the traumatic event in a safe and supportive manner and to gain new perspectives (e.g., "The rape was not my fault"; "I did the best under the circumstances"); by sharpening the distinction between remembering and reencountering the traumatic event and thus the realization that the latter but not the former is dangerous; by helping patients create a coherent, organized narrative of the traumatic event; by demonstrating to clients that emotional engagement with the traumatic memory results in reduction rather than increase in anxiety; and by increasing patients' sense of mastery. In vivo exposure provides clients with corrective information that the avoided trauma-related situations are not dangerous. Thus, their anxiety decreases, increasing sense of mastery and broadening positive life experiences. When implementing PE or other exposure-based approaches, it is particularly important to promote emotional engagement with the traumatic memory and to select situations that will demonstrate safety (Foa & Cahill, 2002). A more detailed conceptual theory for PE's mechanism of action is presented in Foa and Kozak (1986) and further elaborated by Foa and Rothbaum (1998).

Cognitive Processing Therapy (CPT; Resick & Schnicke, 1993) is a 12-session empirically-supported intervention based on the information-processing model, which includes exposure plus cognitive therapy. CPT addresses specific thoughts and beliefs affected by the trauma and includes daily homework between sessions. Foa and colleagues (1989) described how traumatic fear structures are established and deconstructed. In order to intervene and reduce fear, it was hypothesized that this structure must be activated and then new dissonant information must be incorporated. The exposure component offers the opportunity for fears to be confronted, reevaluated and habituated to. As discussed previously, this appears to only address the emotion of fear. Other secondary emotions, such as guilt and shame, are thought to be left unaddressed and unresolved.

CPT was designed in part to additionally examine and address these secondary emotions and their associated maladaptive beliefs. The cog-

nitive component addresses the conflict between thoughts and beliefs pertaining to the traumatic event and the beliefs held prior to the event. One example of this is the conflict between the belief that the world is a safe place versus a trauma-related belief that the world is a dangerous place. This type of conflict is described as a "stuck point" (Resick & Calhoun, 2001).

The exposure component of CPT is different from that in PE, as clients are instructed to journal the details of the traumatic event along with their responses and their experiences. During the therapeutic session, the client reads the journal entries aloud, with the therapist assisting in identification and processing of stuck points.

Anxiety Management Training offers coping skills to gain self-mastery and reduce anxiety levels. Kilpatrick and Amick (1985) proposed that mastery over fears was derived from learning coping skills. Mastery and reduced anxiety usually involved stress inoculation training, relaxation skills, and self-talk. *Stress Inoculation Training* (SIT) is based on Meichenbaum's (1985) approach (discussed further below). SIT Phase I is the preparation for treatment, which includes conceptualization of anxiety related to trauma from a social learning perspective. This includes explanations regarding physiological, behavioral, and cognitive responses. Concrete examples are provided by the therapists and clients then explain examples from their own lives. SIT Phase II involves coping skills training with identified target fears. The therapist provides a minimum of two coping strategies per response channel (i.e., physiological, behavioral and cognitive), and the relationships between channels are discussed. This phase includes the use of daily recording of maladaptive thoughts (otherwise known as "thought records") and monitoring of emotional distress (often referred to as an "emotional thermometer").

Explanations are offered by the therapist for the use of coping strategies in regards to how and why they work and demonstrations are conducted. Clients practice these skills in session as well as monitor the use and effectiveness outside of session. Associated coping strategies include Progressive Muscle Relaxation (Bernstein & Borkovec, 1973), Breathing Control or Diaphragmatic Breathing (Rapee & Barlow, 1988), Covert Modeling (Kazdin, 1978; imaginal exposure of an anxiety provoking situation and imagined confrontation), role-playing (in session and with friends or family members), and guided self-dialogue.

Constructive Narrative Perspective (CNP; Meichenbaum, 1994) is another model that focuses heavily on cognition (i.e., beliefs, assumptions and interpretations) in the form of the client's "story." In CNP

treatment, the therapist collects the client's descriptive accounts of self, others, and world, because they are believed to offer meaning and organization to how clients' representations have been altered by trauma. The CNP model posits that individuals do not respond directly to events, but rather respond to their interpretation of events and what they foresee the implications of the events to be, which helps make sense of traumatic experiences.

Thus it is believed that the client becomes a narrator, and the therapist facilitates change through changing understanding of the past and restructuring cognitions. As the narrative script changes, the reactions to events and clients' roles are also thought to change. Intervention also includes gaining some level of acceptance, making favorable social comparisons, identifying positive personal attributes, deriving some possible benefit from the event (such as personal growth) and normalization of their reactions.

For example, clients with trauma-related pathology often need to make changes from a position of blaming, victimization and undoing (e.g., thoughts such as, "Why did the traumatic event happen to me?" or "What if I did something differently, would the trauma not have happened to me?"). These undoing questions thematically arise in the story line. What also appears out of the story line is the use of metaphor(s) due to an inability to adequately describe emotions and reactions. These metaphors offered by clients are used by the therapist to draw out more personalized descriptions. For example, if the client states "I am a ticking time bomb," the therapist might question "When does the bomb explode?," or perhaps "How can the time bomb be diffused?" Therapists may also choose to find a thematic thread to the metaphors offered and assist in the replacement of positive or adaptive ones such as the renovation of an existing structure.

CNP treatment occurs in five phases. The introductory Phase I involves the establishment of therapeutic alliance, facilitatation of sharing of the client's "story," establishment of treatment goals including establishment of safety, assessment of treatment needs and client's strengths, psychoeducation on PTSD, validation and instillation of hope.

CNP Phase II focuses on stabilization and symptom reduction, teaching coping skills for specific situations and assessment to determine if psychotropic medication or adjunctive treatment is warranted. Phase III involves the restructuring of the story and transforming self-perception from victim to survivor. This is accomplished through retelling the story with a sense of mastery and integration and finding meaning, and reexperiencing of memories with a sense of control. Other techniques involve exposure and guided imagery to trauma cues in a supportive

manner, while addressing clients' beliefs through cognitive restructuring and journaling and addressing feelings of guilt and self-blame. Additionally, this phase of treatment includes the therapist's attempts to assist in the strengthening of social supports, a shifting of time orientation from past to present and future, provision of opportunities for improved social interactions and client development of ability to build on own experience. CNP Phase IV involves reconnecting socially and interpersonally and avoiding revictimization. And Phase V is the termination phase where the therapist attempts to bolster self-confidence, discuss relapse prevention and discuss booster sessions.

RECENT CBT INNOVATIONS IN TREATMENT OF PTSD AND/OR SUD

Innovative new advances in CBT or variants thereof continue to be developed and tested for the treatment of PTSD and/or SUD. For instance, Ehlers, Clark, Hackman, McManus and Fennell (2005) described the development of a cognitive therapy for PTSD that is based on a recent cognitive model, and presented promising findings from a small randomized controlled trial comparing this treatment to a waitlist condition. Additionally, there is a growing understanding that CBT treatments must not only be efficacious but must be accessible. Efficient methods of delivering CBT interventions to a wider range of clients (e.g., traumatized patients who live in rural areas) and those in other settings (e.g., primary care medical settings) are also underway. One novel example is a therapist-assisted, Internet-based self-help intervention to treat PTSD, which involves a modified form of stress inoculation training, promoted through daily homework assignments (Litz, Williams, Wang, Bryant, & Engel, 2004).

Client non-adherence, or partial or incomplete treatment responses can occur utilizing any theoretical orientation. In a very thoughtful book on advances in CBT treatments for PTSD, Taylor (2004) attempts to address this dilemma by suggesting that CBT therapists broadened their therapeutic repertoire to include other trauma-related psychopathology.

Treatment of individuals with SUDs and co-occurring psychiatric disorders, including PTSD, is typically delivered using one of three paradigms: parallel, sequential and integrated (Drake & Mueser, 2000). Many programs deliver parallel services where patients receive treatment for SUD in one program and treatment for psychiatric disorders (e.g., PTSD) in another. Parallel treatment can lead to fragmented care

and increased barriers to treatment. Patients with PTSD-SUD may be unable to navigate the separate treatments systems or make sense of different communications about treatment and recovery.

Some treatment programs use the sequential model that focuses first on abstinence from substance use, followed by treatment for trauma-related distress or symptomatology. Consequently patients with PTSD-SUD often find themselves in a situation where important symptoms and problems are unaddressed. For example, patients in abstinence-oriented SUD treatment programs who are not equipped to manage PTSD symptoms may experience worsening as their substance abuse symptoms improve.

An integrated model of treatment involves treating both disorders simultaneously in a coordinated fashion. One integrated CBT for PTSD-SUD that has been acquiring empirical support is Seeking Safety (Najavits, 2002; for a more in-depth discussion of this noteworthy treatment, see chapter 8 of this book). Two other CBT manual-based treatments for SUD-PTSD (Back, Dansky, Carroll, Foa & Brady, 2001; Brady, Dansky, Back, Foa, & Carroll, 2001; Triffleman, Carroll, & Kellogg, 1999) exist and are in various stages of empirical investigation. Both of these contain an exposure-based component.

In a comprehensive book on the causes, consequences, and treatment of PTSD-SUD, Ouimette and Brown (2003) advocate for routine PTSD and SUD screening in all treatment programs. They highlight the importance of educating clients of the link between the two disorders and recommend that PTSD-SUD clients receive integrated treatments. Although they advocate the consideration of exposure treatment, they suggest that it be considered a second stage intervention.

THE THIRD WAVE OF CBT

The next evolutionary stage of CBT, the "third wave" (Hayes, 2004), has developed out of the existing cognitive-behavioral tradition and shares many of the same premises regarding the etiology and maintenance of symptoms, yet expands the processes and goals for behavioral, cognitive and emotional change to include acceptance and non-judgmental present-centered experience. This third wave is most widely represented by Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) but also by Dialectical Behavioral Therapy (DBT; Linehan, 1993). Both offer interventions for PTSD symptoms and substance abuse, although DBT was initially developed for the treat-

ment of borderline personality disorder. Becker and Zayfert (2001) describe promising means of integrating DBT practices into exposure-based therapies for PTSD. Additionally, many leading clinicians have endorsed the integration of acceptance and mindfulness techniques into already well-established CBT treatments (Hayes, Follette, & Linehan, 2004), and ACT is actively being applied as a treatment for comorbid PSTD-SUD with veteran populations (e.g., Batten & Hayes, 2005).

The ACT conceptualization of PTSD shares the existing information processing premise that normal adaptive integration of the information related to trauma does not occur. Also in this model, avoidance continues to be identified as one of the most salient problems in trauma-related distress. Similar to other behaviorally-informed therapies, avoidance is established and maintained by conditioned reinforcement contingencies.

Walser and Hayes (1998) explain that experiential avoidance encompasses cognitive, emotional and behavioral avoidance of trauma-related stimuli or symptoms. Substance abuse is the most relevant example of one of the maladaptive avoidants (Varra & Follette, 2004), along with self injury, social isolation and dissociative features. These avoidant behaviors are thought to be part of the reinforcement contingency which maintains PTSD. In the ACT model the alternative to avoidance is acceptance, which further differentiates ACT from other cognitive-behavioral therapies. Additionally, ACT and more traditional CBT approaches share the basic premise that cognitive processes (i.e., automatic thoughts, intermediate beliefs and core beliefs) are also at the foundation of maladaptive adjustment to traumatic experience (Hayes & Strosahl, 2004).

The primary function of ACT, distinguishing it from other existing CBTs, is alleviation of symptoms. Instead, ACT seeks to increase functioning despite symptoms and reduce the cognitive, emotional and behavioral impact of symptoms. Hayes and other proponents of ACT claim that all individuals, including trauma survivors, need to remain functional and lead successful lives with the cumulative positive and negative events which make up their personal histories (Hayes et al., 2004). Living a successful life and functioning effectively requires addressing and overcoming avoidance and the "fusion" which occurs with cognitions, most specifically language (Hayes, Barnes-Holmes, & Roche, 2001).

ACT specific techniques for both PTSD symptoms and substance abuse begin with the facilitation of "values clarification" to create the context for change (Varra & Follette, 2004). Values are identified in ten

life domains as a means to provide a sense of direction, however, stating a value may also create intense cognitive dissonance that substance abusing clients may also attempt to avoid values identification as they had previously been pushed out of awareness (Wilson & Murrell, 2004). This first fundamental goal of creating a "valued living plan" is in a sense identifying what the client wants. One factor of ACT for SUD is agreement on client committed action based on values. Often the commitment to remain abstinent is in service of fulfilling another commitment such as "being a better father or husband." With successful values clarification, maladaptive behaviors can be examined in regards to their effect on the identified values and on daily functioning.

Additional facets of ACT treatment include creative hopelessness interventions, use of metaphor, mindfulness exercises, cognitive defusion strategies, and willingness and acceptance techniques. Creative hopelessness interventions attempt to create a contrast between the client's identified values and the client's efforts to exert control (a fundamental problem) over emotions and thoughts through their avoidant behaviors such as substance abuse. The therapist and client discuss the "unworkability" of behaviors (Wilson & Byrd, 2004), such as using substances (e.g., making explicit that the client's easy solutions to their problem have not worked thus far so they need to be open to the possibility of change). Metaphor is a fundamental tool in ACT treatment. For example, the *tug of war with a monster,* which illustrates the client letting go of the rope or relinquishing control (see Hayes, Strosahl, & Wilson, 1999 for more examples of ACT metaphors). Defusion strategies show the client how they are fused with the story and language of their trauma. These exercises include deliteralization of words, thoughts, emotions, and physiological experiences. The purpose is to take away the power of the event and the event-related information. Self-as-context exercises are a process of objectively examining self and behavior. This teaches the client that they are not what they feel and think. These exercises are looking to get the client in touch with their immediate private content and have experience without judgment. Willingness and acceptance are basically a form of exposure; however, these efforts are meant to increase psychological flexibility in responding to feared stimuli rather than habituate to it.

Dialectical Behavioral Therapy (DBT) also focuses on coping with negative affect and shares many of the techniques of ACT (such as mindfulness and acceptance) as well as some of the underlying premises, such as the negative impact of avoidant behavior. DBT is a capability deficit and motivational model, which targets emotional dysregulation, impulsive maladaptive behaviors such as substance abuse, and maladaptive cognitive strategies.

The DBT treatment model seeks to facilitate the client's use of "wise mind" which is a learned balance between the rational "reasonable mind" and "emotional mind." Wise mind thinking is thought to result in improved problem-solving, greater experiences of joy, greater capacity to withstand negative emotion, and more validating interpersonal relationships. Validation is fundamental in DBT and needs to occur throughout treatment especially when managing trauma-related information. Linehan (1993) claims that the management of trauma-related stress and substance abuse is purely a matter of sequence in treatment, and that the key to managing trauma-related stress symptoms is adequate coping.

The first phase of therapy includes the management of substance abuse, increasing behavioral skills such as mindfulness skills, interpersonal effectiveness, emotional regulation, distress tolerance and self-management. The second phase of therapy is structured to focus on decreasing posttraumatic stress. Stage three targets increasing self-respect and achieving individual goals. The treatment hopes to replace dichotomous thinking with dialectical thinking, improve the client's motivation for change, and ensures that new capabilities generalize to the natural environment (Linehan, 1993).

CONCLUSION

With the increasing recognition of the effects of traumatic stress including PTSD and SUD, it is imperative that clinicians learn how to recognize and treat these disorders. In addition to comprehensive information collection through interviewing the use of reliable and valid PTSD and SUD assessment measures may improve in the recognition, diagnosis and subsequent treatment of these disorders (for a review of PTSD assessment measures readers are directed to Frueh, Elhai, & Kaloupek, 2004).

CBT has a basic structure which involves the identification and correction of maladaptive thinking and behaviors along with the promotion of more adaptive coping strategies to manage negative emotions and psychological symptoms. CBT for PTSD-SUD typically involves education about trauma and misuse of substances and their effects, challenging unhelpful thoughts with rational more accurate responses (and meaningful and accurate beliefs), learning "triggers" and how to more effectively cope with present and future anxiety and substance use urges, use or development of social supports and exposure to traumatic material in a safe and controlled environment. Additionally, third wave behaviorally informed treatments include the premise and practice of

accepting the presence of negative emotion and symptoms without allowing them to significantly negatively impact the client's functioning or emotional well-being.

The cognitive-behavioral tradition has a commitment to empirical investigation. Although it is recognized that many front-line clinicians are time-restrained and resource-limited, it is advised that they stay well-informed and empirically-minded. On-going randomized clinical trials of psychosocial interventions should provide the field with the latest evidence regarding the efficacy and parameters of interventions as well as the optimal combination and ordering of techniques.

A number of additional factors may influence CBT conceptualization and treatment including chronology and severity of trauma, acuity of symptoms, cultural, ethnic and gender considerations, motivation for and acceptability of treatment, personality, other psychiatric comorbidities and family history of psychopathology. All of these factors require consideration to structure CBT assessment and best practices for psychosocial interventions for those with co-morbid PTSD-SUD.

REFERENCES

Abueg, F. R., & Fairbank, J. A. (1992). Behavioral treatment of co-occurring PTSD and substance abuse: A multidimensional stage model. In P. A. Saigh (Ed.), *Posttraumatic stress disorder: A behavioral approach to assessment and treatment.* Boston: Allyn & Bacon.

Ackerman, S. J., Benjamin, L. S., Beutler, L. E., Gelso, C. J., Goldfried, M. R., Hill, C. et al. (2001). Empirically supported therapy relationships conclusions and recommendations of the division 29 task force. *Psychotherapy, 38*, 495-497.

Back, S. E., Dansky, B. S., Carroll, K. M., Foa, E. B., & Brady, K. T. (2001). Exposure therapy in the treatment of PTSD among cocaine-dependent individuals: Description of procedures. *Journal of Substance Abuse Treatment, 21*, 35-45.

Batten, S. V., & Hayes, S. C. (2005). Acceptance and commitment therapy in the treatment of comorbid substance abuse and posttraumatic stress disorder: A case study. *Clinical Case Studies, 4*, 246-262.

Beck, A. T., Rush, J., Shaw, B., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Becker, D. B, & Zayfert, C. (2001). Integrating DBT-based techniques and concepts to facilitate exposure treatment for PTSD. *Cognitive & Behavioral Practice, 8*, 107-122.

Bernstein, D. A., & Borkovec, T. D. (1973). *Progressive relaxation training*. Champaign, IL: Research Press.

Bolton, D., & Hill, J. (1996). *Mind, Meaning and Mental Disorder*. Oxford: Oxford University Press.

Brady, K. T., Dansky, B. S., Back, S. E., Foa, E. B., & Carroll, K. M. (2001). Exposure therapy in the treatment of PTSD among cocaine-dependent individuals: Preliminary findings. *Journal of Substance Abuse Disorders, 21*, 47-54.

Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*, 670-686.

Brewin, C. R., & Holmes, E. A. (2003). Psychological theories of posttraumatic stress disorder. *Clinical Psychology Review*, *23,* 339-376.

Chemtob, C., Roitblat, H. L., Hamada, R. S., Carlson, J. G., & Twentyman, C. T. (1988). A cognitive action theory of post-traumatic stress disorder. *Journal of Anxiety Disorders*, *2*, 253-275.

DiClemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology, 59,* 295-304.

Drake, R. E., & Mueser, K. T. (2000). Psychosocial approaches to dual diagnosis. *Schizophrenia Bulletin, 26,*105-118.

Ehlers, A., Clark, D. M., Hackmann, A., McManus, F., & Fennell, M. (2005). Cognitive therapy for post-traumatic stress disorder: Development and evaluation. *Behaviour Research and Therapy, 43,* 413-431.

Foa, E. B., & Cahill, S. P. (2002). Specialized treatment for PTSD: Matching survivors to the appropriate modality. In R. Yehuda (Ed.) *Treating trauma survivors with PTSD* (pp. 43-62) Washington: American Psychiatric Publishing.

Foa, E. B., Davidson, J., & Frances, A. J. (1999). Treatment of posttraumatic stress disorder (Expert consensus guideline series). *Journal of Clinical Psychiatry, 60* (supplement 10).

Foa, E. B., Keane, T. M., & Friedman, M. J. (Eds.). (2000). *Effective treatments for PTSD.* New York: Guilford Press.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99*, 20-35.

Foa, E. B., & Riggs, D. S. (1993). Post-traumatic stress disorder in rape victims. In J. Oldham, M. B. Riba, & A. Tasman (Eds.), *American Psychiatric Press Review of Psychiatry, vol. 12* (pp. 273-303). Washington, DC: American Psychiatric Press.

Foa, E. B., & Rothbaum, B. O. (1998). *Treating the trauma of rape: Cognitive behavioral therapy for PTSD.* New York: Guilford Press.

Foa, E. B., Stekeete, G. S., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualizations of posttraumatic stress disorder. *Behavior Therapy, 20*, 155-176.

Follette, V., Ruzek, J. I., & Abueg, F. R. (1998). A contextual analysis of trauma: Theoretical considerations. In V. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive Behavioral Therapies for Trauma* (pp. 1-14). New York: Guilford Press.

Frueh, C. B., Elhai, J. D., & Kaloupek, D. G. (2004). Unresolved issues in the assessment of trauma exposure and posttraumatic reactions. In G. M. Rosen (Ed.), *Posttraumatic Stress Disorder: Issues and Controversies* (pp. 63-84). New York: John Wiley and Sons.

Harvey, A. G., Bryant, R. A., & Tarrier, N. (2003). Cognitive behavioral therapy for posttraumatic stress disorder. *Clinical Psychology Review, 23*, 501-522.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior Therapy*, 35, 639-665.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational frame theory: A post-Skinnerian account of human language and cognition.* New York: Plenum Press.

Hayes, S. C., Follette, V. M., & Linehan, M. M. (Eds.). (2004). *Mindfulness and acceptance: Expanding the cognitive behavioral tradition.* New York: The Guilford Press.

Hayes, S. C., & Strosahl, K. D. (Eds.). (2004). *A practical guide to acceptance and commitment therapy.* New York: Springer Science + Business Media Inc.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford Press.

Hester, R. K., & Miller, W. R. (1995). *Handbook of alcoholism treatment approaches* (2nd ed.). New York: Pergamon.

Irvin, J. E., Bowers, C. A., Dunn, M. E., & Wang, M. C. (1999). Efficacy of relapse prevention: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 67,* 563-570.

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.

Kazdin, A. E. (1978). Covert modeling: The therapeutic application of imagined rehearsal. In J. L. Singer & K. S. Pope (Eds.), *The power of human imagination: New methods in psychotherapy* (pp. 255-278). New York: Plenum.

Kilpatrick, D. G., & Amick, A. E. (1985). Rape Trauma. In M. Hersen & C. Last (Eds.), *Behavior Therapy Casebook* (pp. 86-103). New York: Springer.

Lewinsohn, P. M., Biglan, T., & Zeiss, A. (1976). Behavioral treatment of depression. In P. Davidson (Ed.), *Behavioral management of anxiety, depression and pain* (pp. 91-146). New York: Brunner/Mazel.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder.* New York: Guilford Press.

Litz, B. T.,Williams, L., Wang, J. L.,Bryant, R. A., & Engel, C. C. (2004). A therapist-assisted internet self-help program for traumatic stress. *Professional Psychology: Research and Practice, 35,* 628-634.

Marlatt, G. A., & Gordon, J. R. (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors.* New York: Guilford Press.

McConnaughy, E. A., Prochaska, J. P., & Velicer, W. F. (1983). Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy, 20*, 368-375.

McCrady, B. S. (2001). Alcohol Use Disorders. In Barlow, D. H. (Ed.), *Clinical Handbook of Psychological Disorders* (pp. 376-433). New York: Guilford.

Meichenbaum, D. H. (1985). *Stress inoculation training*. New York: Pergamon Press.

Meichenbaum, D. H. (1994). *A clinical handbook/practical therapist manual for assessing and treating adults with Posttraumatic Stress Disorder (PTSD).* Clearwater, Florida: Institute Press.

Miller, W. R., & Rollnick, S. (1991). *Motivational Interviewing: Preparing people to change addictive behaviors.* New York: Guilford Press.

Mowrer, O. H. (1960). *Learning theory and behavior.* New York: Wiley.

Najavits, L. M. (2002). *Seeking Safety: Cognitive-behavioral therapy for PTSD and substance abuse*. New York: Guilford Press.

Najavits, L. M., Weiss, R. D., & Liese, B. S. (1996). Group cognitive-behavioral therapy for women with PTSD and substance use disorder. *Journal of Substance Abuse Treatment, 13,* 13-22.

Norcross, J. C. (1993). The relationship of choice: Matching the therapist's stance to the individual clients. *Psychotherapy, 30*, 402-403.

Ouimette, P., & Brown, P. J. (2003). *Trauma and Substance Abuse: Causes, consequences, and treatment of comorbid disorders.* Washington, DC: American Psychological Association.

Peirce, J. M., Brown, J. M., Long, P. J., Nixon, S. J., Borrell, G. K., & Holloway, F. A. (1996). Comorbidity and subjective reactivity to meaningful cues in female methadone maintenance patients. Paper presented at annual meeting of the Association for Advancement of Behavior Therapy, New York.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist, 47*, 1102-1114.

Prochaska, J. O., & Norcross, J. C. (2001). Stages of change. *Psychotherapy, 38*, 443-448.

Rapee, R. M., & Barlow, D. H. (1988). Cognitive-behavioral treatment. *Psychiatric Annals, 18*, 473-477.

Resick, P. A., & Calhoun, K. S. (2001). Posttraumatic stress disorder. In D. H. Barlow (Ed.), *Clinical Handbook of Psychological Disorders* (Third Ed.) (pp. 60-113). New York: Guilford.

Resick, P. A., & Schnicke, M. K. (1993). *Cognitive processing therapy for rape victims: A treatment manual.* Newbury Park, CA: Sage.

Rohsenow, D. J., Childress, A. R., Monti, P. M., Niaura, R. S., & Abrams, D. B. (1990). Cue reactivity in addictive behaviors: Theoretical and treatment implications. *International Journal of the Addictions, 25*, 957-993.

Rothbaum, B. O., Meadows, E. A., Resick, P., & Foy, D. W. (2000). Cognitive behavioral therapy. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), *Effective treatments for PTSD* (pp. 60-83). New York: Guilford Press.

Ruzek, J. I., Polusny, M. A., & Abueg, F. R. (1998). Assessment and treatment of concurrent posttraumatic stress disorder and substance abuse. In V. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive behavioral therapies for trauma*. New York: Guilford Press.

Taylor, S. (2004). Advances in the treatment of posttraumatic stress disorder: Cognitive-behavioral perspectives. New York: Springer.

Taylor, S., Koch, W. J., & McNally, R. J. (1992). How does anxiety sensitivity vary across the anxiety disorders? *Journal of Anxiety Disorders, 6*, 249-259.

Triffleman, E., Carroll, K., & Kellogg, S. (1999). Substance dependence posttraumatic stress disorder therapy: An integrated cognitive-behavioral approach. *Journal of Substance Abuse Treatment, 17,* 3-14.

Varra, A. A., & Follette, V. M. (2004). ACT with posttraumatic stress disorder. In S. H. Hayes & K. D. Strosahl (Eds.), *A practice guide to acceptance and commitment therapy* (pp. 133-152). New York: Springer Business + Science Media Inc.

Villagomez, R. E., Meyer, T. J., Lin, M. M., & Brown, L. S. (1995). Post-traumatic stress disorder among inner city methadone maintenance patients. *Journal of Substance Abuse Treatment, 12,* 253-257.

Walser, R. D., & Hayes, S. C. (1998). Acceptance and trauma survivors: Applied issues and problems. In V. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive Behavioral Therapies for Trauma* (pp. 256-277). New York: Guilford Press.

Wilson, K. G., & Byrd, M. R. (2005). ACT for substance abuse and dependence. In: S. C. Hayes & K. D. Strosahl (Eds.), *A practical guide to acceptance and commitment therapy* (pp. 153-184). New York: Springer Science + Business Media Inc.

Wilson, K. G., & Murrell, A. R. (2004). Values work in acceptance and commitment therapy. In S. C. Hayes, V. M. Follette & M. M. Linehan (Eds.), *Mindfulness and acceptance: Expanding the cognitive behavioral tradition* (pp. 120-151). New York: The Guilford Press.