Published in final edited form as:

Prof Psychol Res Pr. 2010 February 1; 41(1): 34–40. doi:10.1037/a0018235.

Exposure therapy for posttraumatic stress disorder in a residential substance use treatment facility

Amber M. Henslee and Scott F. Coffey

The University of Mississippi Medical Center

Abstract

Clinical lore abounds when discussing the issue of treating trauma-related symptoms in substance dependent clients. Historically, clinicians have wondered whether they should wait until the client has gained substantial abstinence from abused substances before initiating trauma treatment or if trauma treatment should be conducted during substance use treatment. Furthermore, questions arise with regard to exactly how trauma-related symptoms should be addressed and how trauma treatment should be incorporated into the recovery process. In this article, the growing literature suggesting that posttraumatic stress disorder (PTSD) can be treated concurrently with substance use disorders is reviewed. In addition, the unique challenges of implementing treatment for PTSD with substance dependent clients seeking treatment in a residential treatment facility are discussed. Specifically, we provide concrete suggestions about how to utilize prolonged exposure, a very effective treatment for PTSD, with clients in a residential substance use treatment facility, including use of the internet to facilitate exposure therapy.

Keywords

prolonged exposure; residential substance use treatment; comorbidity; PTSD

Professional psychologists face many challenges in treating clients with substance use disorders. One such challenge clinicians frequently confront when working with substance dependent clients is the presence of trauma-related issues. In fact, between 25% and 42% of patients seeking substance use treatment also satisfy diagnostic criteria for current posttraumatic stress disorder (PTSD; Brady, Back, & Coffey, 2004; Jacobsen, Southwick, Kosten, 2001). Thus, when treating such a population, questions arise such as “Should I wait until my client has obtained a certain amount of abstinence before addressing trauma-related symptoms?” or “How do I best address the client’s trauma within the context of recovery?” Given the prevalence of PTSD in substance dependent individuals and that there is evidence that PTSD is associated with poorer substance use treatment outcomes (e.g., Ouimette, Moos, & Finney; 2003), these questions are not merely theoretical in nature, but indeed relevant to the practicing clinician.

The conventional wisdom in substance use treatment has been to address the addiction-related issues first and then, after the client obtains abstinence, to provide treatment (or a referral for

Dr. Coffey can be contacted at The University of Mississippi Medical Center, Department of Psychiatry & Human Behavior, 2500 N. State Street, Jackson, MS 39216, 601-815-5199 (phone), 601-984-4489 (fax), scoffey@psychiatry.umsmed.edu.

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treatment) to address the trauma-related issues. The primary basis for this logic has been out of concern for the patient's recovery; specifically, that to treat trauma-related issues early in substance abuse treatment might jeopardize the client's well-being by triggering a relapse of substance use (see Triffleman, Carroll, & Kellogg, 1999; Pitman et al., 1991). However, there is growing support to argue against such logic. Coffey and colleagues have provided laboratory-based evidence to demonstrate that when substance dependent individuals with PTSD experience an experimentally induced intrusive memory of their subjectively-rated worst traumatic event, substance craving increases (Coffey et al., 2002; Saladin et al., 2003). These data are consistent with studies from other investigators in which substance abusers with PTSD report that when their PTSD symptoms worsen, their substance misuse symptoms worsen, and when their substance misuse symptoms worsen, their PTSD symptoms worsen (Back, Brady, Jaanimagi, & Jackson, 2006; Brown, Stout, & Gannon-Rowley, 1998). Coffey and colleagues have also demonstrated that reducing trauma-related negative affect via exposure therapy reduces experimentally induced craving. Moreover, study drop-out did not differ between exposure and relaxation therapy conditions (Coffey, Stasiewicz, Hughes, & Brimo, 2006). These authors have argued that the findings from laboratory-based studies support the provision of trauma-focused treatment to addicted patients with PTSD. Several preliminary clinical studies have suggested that treating PTSD symptoms in substance dependent clients may positively impact substance-related variables (Brady, Dansky, Back, Foa, & Carroll, 2001; Back, Brady, Sonne, & Verduin, 2006; Coffey et al., 2006; Ouimette et al., 2003). Thus, given the preliminary support for treating trauma-related symptoms in substance dependent individuals, it appears that the more appropriate question for the professional psychologist is not "should I" treat, but "how do I" treat these clients. It is the question of "how do I" treat these clients that we will focus on in this paper.

The development of combined PTSD and substance use disorder treatment regimes has grown in recent years to include Seeking Safety (Najavits, Weiss, Shaw, & Muenz, 1998), Concurrent Treatment of PTSD and Cocaine Dependence (CTPCD; Brady et al., 2001), and Substance Dependence PTSD Treatment (SDPT; Triffleman et al., 1999). CTPCD and SDPT include an integrated cognitive-behavioral therapy for substance abuse and exposure-based therapy for PTSD in outpatient settings. In addition, CTPCD has been modified to address the needs of clients in outpatient community mental health centers by deconstructing the integrated treatment so that it can be administered in a parallel fashion to take advantage of differential skill sets often found in therapists treating substance abusers. This paper will move one step forward and focus on how to treat trauma-related symptoms in the context of a residential substance use treatment facility. This is an important treatment context because according to the 2006 SAMHSA Treatment Episode Data Set (SAMHSA, 2008), almost 40% of individuals seeking substance use treatment nationwide received care at a residential facility (not including 24-hour inpatient detoxification). Assessment issues will be discussed first, and then prolonged exposure (PE; Foa, Hembree, & Rothbaum, 2007) will be reviewed, followed by concrete suggestions for how PE may be adapted to fit the constraints of a substance abuse residential treatment setting.

Trauma Assessment

While it is true that many people seeking substance use treatment also report experiencing numerous potentially traumatic events over the course of their lives (Brady et al., 2004; Jacobsen et al., 2001), a thorough psychological evaluation should be conducted prior to establishing a PTSD diagnosis. Exposure to a traumatic event does not necessarily equate a PTSD diagnosis. For example, in a sample of American adult women, lifetime exposure to a traumatic event was 69%, but the prevalence of lifetime PTSD was 12.3% (Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Thus, it is important to firmly establish a current diagnosis of PTSD rather than assuming that because a client has experienced a potentially traumatic

event, PTSD treatment is required. It is also true that many clients who have experienced one or more traumatic events may experience considerable distress following these events yet not satisfy diagnostic criteria for PTSD. While the current article focuses on treating substance abusing clients who satisfy diagnostic criteria for PTSD, many of the issues described below will be pertinent when treating traumatized substance abusers with subclinical PTSD.

Given that multiple people may be admitted to a residential treatment program during the course of a week, initial PTSD symptom assessment can be conducted by administering a brief screening questionnaire and several psychometrically sound options are available. The Impact of Event Scale – Revised (IES-R; Weiss & Marmar, 1997) is a widely used, reliable and valid measure of past-week trauma-related symptoms and has been used with substance abusing clients (Rash, Coffey, Baschnagal, Drobles, & Saladin, 2008). The IES-R is a 22-item measure and scores can range from 0 to 88. For optimal sensitivity and specificity, Rash et al. (2008) suggest a cutoff score of 22 when screening for PTSD in a substance abusing population.

Alternatively, the PTSD Checklist – Civilian Version (PCL-C; Weathers, Litz, Huska, & Keane, 1993) is another widely used, reliable, and valid screening measure of PTSD (Blanchard, Jones-Alexander, Buckley & Forneris, 1996). A cut off score to screen for PTSD in substance abusers has not been established, although a total score of 43 is often used in civilian non-substance abusing populations (Weathers et al., 1993). It should be noted that screening measures often produce high false positive rates due to the inclination to sacrifice overall accuracy to reduce false negative results. In other words, exceeding a cut off score should not be equated with a positive diagnosis of PTSD.

For those individuals who report a score above the cutoff when screening for trauma-related symptoms, a more comprehensive assessment of PTSD is required. The first step in assessing PTSD is establishing DSM-IV-TR Criterion A: the traumatic event that precipitates the symptoms of PTSD. There are several very good questionnaires and semi-structured interviews that can be used to assess Criterion A. The Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000) is a self-report measure assessing exposure to traumatic events. Events are described in behavioral terms without emotionally charged words that may have a stereotyped meaning for some individuals. The TLEQ has been tested with a sample of substance abusers and found to have good reliability for most items and strong validity (Kubany et al., 2000).

Another measure designed to obtain a detailed, behaviorally specific assessment of an individual's trauma history is The National Women's Study PTSD Module (NWS PTSD Module; Resnick, 1996). The NWS PTSD Module is a clinician-administered interview that has been used to assess for a wide range of potentially traumatic events and can establish PTSD Criteria A. The NWS PTSD Module has been used to evaluate the trauma histories of both male and female substance abusers (Brady et al., 2001; Coffey et al., 2002; Coffey et al., 2006).

Following assessment of Criterion A, the Clinician Administered PTSD Scale (CAPS; Blake, Weathers, Nagy, Gusman, Charney, & Keane, 1995) can be utilized to assess PTSD symptoms across the three symptom clusters: reexperiencing, avoidance, and hyperarousal. Alternatively, the full version of the CAPS can be used as a stand-alone measure to assess Criterion A and the remaining criteria for PTSD. Other options for assessing PTSD include the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First & Gibbon, 2004) and the PTSD Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997). The SCID-I is a clinician administered structured interview used to provide psychiatric diagnoses, including PTSD. The PTSD Diagnostic Scale is a self-report measure that yields both a PTSD diagnosis and a level of symptom severity.

At the initiation and throughout the duration of trauma treatment, the client's self-reported severity of PTSD symptoms can be quickly and easily measured by the IES-R or the PCL-C (described above). Utilization of such brief symptom assessments throughout the course of treatment take a minimal amount of time and will assist in documenting the client's progress.

Overview of Prolonged Exposure for PTSD

Prolonged Exposure (PE; Foa et al., 2007; Rothbaum, Foa, & Hembree, 2007) is a first-line treatment for PTSD (Cloitre, 2009; Foa, Keane, & Friedman, 2000) with considerable evidence supporting its use. PE is an individual cognitive-behavioral therapy that largely focuses on reducing symptoms of PTSD through extended contact with feared or avoided trauma-related stimuli, including thoughts, objects, places, and people. We will review the elements of PE, but interested readers are referred to the treatment manuals (Foa et al., 2007; Rothbaum et al., 2007) for a more detailed description of PE. Our discussion of PE will also highlight the relationship between trauma and substance use. In the context of treating a substance abuser with PTSD, PE consists of four main components: psychoeducation about trauma and the relationship between trauma and substance use, a relaxation exercise focused on breathing retraining, *in vivo* exposure, and imaginal exposure.

The first session of PE provides education to the client about trauma treatment. This information includes not only details about the length and timing of therapy sessions, but also information about the components of PE. Clients are given examples to understand better the learning theory upon which PE is based and their target traumatic event is confirmed (i.e., the traumatic memory that will be the focus of treatment). If a client has experienced more than one traumatic event, the subjectively-rated "worst" event is agreed upon as the focus of treatment (see Tolin & Foa, 1999). An overview of the relationship between trauma and substance use is provided and clients are encouraged to identify personal examples of this relationship in their lives. For example, substance abusers often report a direct relationship between symptoms of trauma and substance abuse symptoms so that when one condition worsens, the other condition worsens (e.g., Back et al., 2006). Finally, a relaxation exercise is explained and then modeled for the client. This relaxation exercise teaches the client how to take slow and controlled breaths and to utilize this exercise in response to any anxiety-provoking situation, either trauma-related or substance use-related.

The first session is concluded with client and therapist signing a treatment contract. The contract states that the treatment is intended for individuals who are not abusing drugs or alcohol, and thus, underscores the emphasis of treating trauma in the context of maintaining abstinence. The first homework assignment (i.e., to practice the breathing exercises) is given to the client. Given the sheer volume of paperwork often accrued by clients in residential treatment settings, it is helpful to provide the client with a distinct folder in which to keep all trauma-related treatment paperwork. Clients are encouraged to keep all homework in their folders and bring their folders with them to each session. As the treatment progresses, clients and therapists will establish a routine in which the client turns in the previously completed assignment and the therapist provides another form for the next assignment. Thus, a distinct folder in which to store all homework or papers is quite helpful.

The second session of PE continues the psychoeducation component by providing a more detailed review of PTSD. The Common Reactions to Victimization and Trauma Experiences handout, developed at the National Crime Victims Research and Treatment Center at the Medical University of South Carolina (included as an appendix in Coffey, Schumacher, Brimo, & Brady, 2005), includes a comprehensive review of trauma-related responses. Clients are provided with a copy of the handout. The PE treatment manuals include a similar handout for patients to read (Foa et al., 2007). The second homework assignment is to read the handout

several times before the next treatment session (this assists the client in learning and encoding this information) as well as to continue practicing the breathing exercises.

Psychoeducation is continued in the third session of PE by reviewing the concepts of classical conditioning, negative reinforcement, and habituation as they apply to the development of trauma-related symptoms. The Subjective Units of Distress Scale (SUDS) is introduced and SUDS anchors are established. The SUDS ranges from 0-100 and “anchors” are established at 0, 25, 50, 75, and 100. Ideally, these anchors are distressing events that are unrelated to the client’s trauma. Non-trauma-related anchors are preferred since the goal of the treatment is to reduce distress to trauma-related stimuli and memories and, therefore, relatively static anchors are more helpful to accurately assess treatment progress. An example of a client’s SUDS scale might be: 0 = being on vacation, 25 = losing \$40.00, 50 = going into substance use treatment, 75 = having bills to pay and being unemployed, 100 = the traumatic event. The SUDS ratings enable the therapist and client to “speak the same language” regarding the client’s subjective experience of the exposure. As treatment progresses, SUDS ratings can also serve as a tangible example of the client’s habituation to fear-evoking cues.

During the third session, a hierarchy of feared or avoided cues is developed. The items on this hierarchy are objectively-rated distressing cues that remind the client of his or her trauma, and, thus, are situations, objects, places, or people that the client has been avoiding since the traumatic event or, upon exposure, have caused considerable distress in the client. Examples of items on a client’s hierarchy may be: 30 = seeing a belt, 40 = a picture of a woman with bruises on her body, 50 = hearing a man and woman argue, 60 = watching a domestic violence scene from a movie, 70 = the smell of her attacker’s cologne, 80 = holding a belt in her hands, 90 = feeling the metal and leather of a belt against her body, 100 = being beaten with a belt. The first *in vivo* homework assignment is given in the third session. Clients pick an item on the *in vivo* hierarchy that is rated around the 40-60 mark on a scale ranging from 0-100. Clients are specifically advised to start relatively low on the hierarchy and gradually expose themselves to more distressing cues, rather than jumping too far up on the hierarchy and risking premature exposure to a highly distressing item. The psychologist provides a form which allows the client to document the day and time each *in vivo* exposure occurred, as well as their SUDS rating before, during, and after the exposure. Clients are instructed to expose themselves to the selected hierarchy item every day between sessions and to continue the exposure until their distress has decreased by at least 50% within an exposure trial. For example, using the aforementioned hierarchy, at the end of the third session the client would be given a tape recording of a man and woman arguing and instructed to listen to the tape daily until his/her distress decreased from a SUDS score of 50 to 25. The client is instructed to complete this assignment on his/her own time in between therapy sessions. Again, the rationale for such exposure is to allow clients to habituate to a feared, but objectively safe, item (i.e., a place, object, sound, or smell) such that they are able to encounter the item without intolerable distress and their functioning is no longer as impaired by avoidant behaviors.

It is important to note that a client’s objective safety is always considered when conducting PE. That is, if the client was assaulted at night in a dark alley located in a dangerous part of town, *in vivo* exposure would not involve having the client return to such an area. Dark alleys at night in crime-ridden neighborhoods are objectively unsafe places and the purpose of *in vivo* exposure is to allow the client to feel the negative affect associated with the cue without actually being harmed. By strengthening a conditioned response (i.e., safety) that competes with the conditioned fear response, extinction occurs. An objectively dangerous cue on a hierarchy can be modified so that the client is asked to visit a similar, yet safe, location (i.e., an alley in broad daylight while accompanied by a friend), although it is likely the SUDS rating of the item and rank on the hierarchy will change in response to these modifications.

Imaginal exposure begins on the fourth session and involves having the client relive the traumatic memory, within the safety of the therapy office, in as much detail as he or she can recall. As the client describes the traumatic event, the clinician asks for SUDS ratings (again using the same 0-100 scale) and vividness ratings (0 = not at all vivid, 100 = very vivid). Vividness ratings, obtained approximately 4-5 times during the exposure session, assist the clinician in assessing how well the client is able to relive the event. One technique utilized to help the client relive the event vividly is having him or her recount the story in the present tense (i.e., he is coming at me) instead of past tense (i.e., he came at me). The event description is audio-taped, and the client is asked to listen to the tape daily between therapy sessions, in addition to completing their *in vivo* exposure homework assignments. If the client becomes overwhelmed with completing both *in vivo* and imaginal exposure homework, this would be discussed in the following therapy session, giving attention to both logistical problem-solving issues (i.e., assisting the client in finding a quiet environment in which to complete the homework) and to the role of avoidance in PTSD. Similar to *in vivo* exposure, the rationale for imaginal exposure also is based in learning theory. Victims of traumatic experiences attempt to avoid memories of the event in order to avoid negative affect (i.e., feelings of fear) associated with the event. Repeated and prolonged exposure to the memories, and thus the negative affect, results in habituation such that the client is able to recall the memory, even discuss it, without experiencing debilitating fear. This rationale is reviewed with the client and he/she is encouraged to attempt the exposure homework again.

Imaginal exposure can be conducted for 40-45 minutes within a 60-minute session or for 45-60 minutes in a 90-minute session. When combined with initial sessions of psychoeducation, breathing retraining, SUDS training and development of the hierarchy, the entire treatment typically lasts 9-12 sessions, of which 6-9 sessions are devoted to imaginal exposure. Consistent with Foa's recommendations (e.g., Foa et al., 2007), after the eighth treatment session, a client's trauma-related symptoms should be re-assessed with one of the PTSD measures used during the initial assessment. If the client reports a 70% or greater reduction from baseline in trauma-related symptoms, a ninth and final session is scheduled. However, if trauma symptoms continue to be bothersome, the psychologist should recommend and/or the client could request additional sessions of treatment. Foa has reported an additional four sessions is typically adequate but clients with extremely complex trauma histories may require more than four additional sessions. When exposure therapy is properly administered, however, rarely more than 12 sessions are required, even for clients with substantial childhood sexual abuse (Cahill, Zoellner, Feeny, & Riggs, 2004; Coffey et al., 2006). The ability to re-assess symptoms and make a sound recommendation regarding the course of treatment is grounded in having obtained a proper diagnosis and consistent symptom assessment, as discussed previously.

Treating Trauma in Residential Substance Use Treatment Programs

There is growing evidence that exposure therapy is effective in treating the trauma-related symptoms of substance dependent clients (Brady et al., 2001; Coffey et al., 2006; Najavits, Schmitz, Gotthardt, & Weiss, 2005). However, a practitioner treating clients in a residential substance abuse treatment facility may have to work within the constraints of the treatment program when implementing PE. For example, many residential facilities are structured around a 4-6 week treatment program. Imagine a very expeditious screening process in which the client is admitted to the facility, identified as an individual with PTSD, and PE is initiated within the first week. Even in such an ideal scenario, given the structure of PE (i.e., psychoeducation, breathing retraining, SUDS ratings, constructing a hierarchy, etc.) a client may not participate in the first imaginal exposure session until the fourth week, or near the termination, of his or her residential treatment program.

This scheduling difficulty may be overcome by conducting PE sessions twice a week. Implementing twice weekly sessions allows a client to complete eight sessions by the fourth week of treatment, and, if necessary, arrangements can be made to continue additional sessions while the client is in an aftercare program. A similar structure of twice weekly sessions has been implemented with PE in outpatient settings (Rothbaum et al., 2006), including outpatient treatment of substance abusers (Back, Dansky, Carroll, Foa, & Brady, 2001). More research is warranted in comparing the efficacy of twice weekly to weekly sessions of PE.

Another aspect to consider when implementing imaginal exposure is the between-session homework. Clients are instructed to listen to the audio-recorded description of the imaginal exposure daily between sessions. However, clients in residential treatment settings often share living quarters, including bedrooms, and thus may lack the privacy desired to listen to their recorded imaginal exposure sessions. Providing cassette tape or digital audio players and headphones will assist the client in being able to complete the between-session homework. Furthermore, given pre-existing sleep difficulties that the client may experience (e.g., Waldrop, Back, Sensenig, & Brady, 2008), we recommend that the exposure homework assignments, neither imaginal nor *in vivo*, be completed within two hours of the client's typical bedtime. Although more research is needed to understand exactly how our night-time behaviors affect our dreams, conventional wisdom would suggest that exposing oneself to memories or reminders of a traumatic event just prior to falling asleep may increase the occurrence of nightmares, or in the least, may contribute to sleep disturbance.

As with the imaginal exposure homework, *in vivo* exposure homework typically occurs between therapy sessions and, for this reason, there may be similar difficulties regarding scheduling and privacy when implementing *in vivo* exposure with clients in a residential treatment setting. However, resolving conflicts with the client's treatment schedule may be as simple as coordinating services with other staff members or the clinical supervisor of the facility. Often concessions can be made, such as allowing clients to miss an afternoon leisure group activity or setting aside an extra hour before dinner, so that the client is able to engage in trauma-related homework assignments without adversely affecting his or her substance use treatment. Ensuring adequate privacy for clients to engage in *in vivo* homework sessions can be accomplished by allowing them to close their bedroom door or providing access to extra unused office space in the facility.

Perhaps the most difficult challenge in implementing PE, and *in vivo* exposure in particular, with clients in a residential setting is the restriction upon the clients' ability to leave the premises. Often when constructing a hierarchy of feared or avoided cues, clients will identify the place at which the trauma occurred or a neighboring area. Typically, *in vivo* exposure would involve having the client spend time in this place or neighborhood in order to habituate to the conditioned fear response. However, if the client is unable to leave the treatment premises, *in vivo* exposure can be adapted by making use of similar cues and by accessing the internet. For example, if a client was assaulted in a rural area, providing pictures of trees and woods may sufficiently represent the cue to evoke a fear response. Likewise, if a client was assaulted in an urban area, pictures of businesses located near the place of the assault (i.e., fast food restaurants, bank signs, store fronts) may be appropriate cues. If the clinician has access to the internet in the therapy room, a few minutes can be set aside during the session to do a quick Google Images search with the client present. This allows the client to offer feedback as to which particular images are the closest representations of the cue and the most salient.

It should be noted that, although helpful, these pictures may not evoke as much distress as if the client actually returned to the scene. Thus, these pictures may be rated lower on the hierarchy. However, they may still be useful "starting points" for *in vivo* exposure. As the client progresses through treatment and approaches termination, the psychologist can discuss the

appropriate time and manner in which the client can continue *in vivo* exposure on their own, after discharge from the residential facility, including perhaps returning to the scene of the traumatic event. Thus, although some *in vivo* cues may be more ideally suited for an outpatient setting, PE can still be initiated with clients in a residential facility, and the first *in vivo* exposure cues addressed on the hierarchy would be simulated cues.

Utilizing simulated cues in a residential setting versus actual cues in an outpatient setting could be interpreted as a compromise in the provision of PE. However, this approach can still yield beneficial treatment effects especially when one considers, as previously stated, that 40% of individuals seeking substance use treatment did so at a residential facility (SAMSHA, 2008). Furthermore, it should be noted that the use of simulated *in vivo* cues, or virtual exposure, in PE have long been used in situations in which exposure to the actual cue was not feasible. For example, in treating an individual who has lost his/her home to a natural disaster, visiting the home may not be feasible (i.e., if nothing remains of the home or if the client currently lives in another geographic region). However, the psychologist could encourage the client to look at a picture of the lost home as one of several cues on the *in vivo* exposure hierarchy. Modifying *in vivo* exposure is an acceptable, and at times, necessary process to successful trauma treatment (see Foa et al., 2007). It should also be noted that there is support for the use of imaginal exposure alone, without *in vivo* exposure, to reduce PTSD symptoms (e.g., Coffey et al., 2006; Tarrier, Sommerfield, Pilgrim, & Humphreys, 1999). These data provide additional support for initiating trauma-focused exposure therapy with clients in a residential facility, even if *in vivo* cues are simulated or cannot be replicated.

Sometimes the client is not distressed by more general pictures or rates them so very low on the hierarchy (i.e., around the 10-20 mark on the hierarchy) that they are not useful starting points. In this situation, utilizing the client's social support system can be helpful in implementing *in vivo* exposure. Clients can ask family or friends to bring or mail pictures to them. In doing so, the client can share as much or as little about their traumatic event as he or she desires. For example, if a client has been traumatized by the sudden death of a loved one and has since avoided visiting the gravesite, general pictures of cemeteries or tombstones may not elicit a sufficiently distressing response. Thus, the client could ask a family member to mail them a picture of the deceased's tombstone and explain the request in a manner which is comfortable to the client (e.g., "It's part of the trauma treatment I'm doing in recovery"). This same option holds true for other items such as pieces of clothing, trinkets, or mementos.

Often a client's cue cannot be captured by a still picture. Particular noises (i.e., a car engine revving) or certain songs can become associated with the traumatic event and elicit distress. Once again, the internet can be a helpful tool. If the treatment facility is equipped with internet capabilities, arrangements can be made with the staff so that the client is allowed internet access. Client access to existing computer files can be restricted by establishing a password protected user account on the computer. Utilizing a firewall will help prevent unapproved downloads or viewing of illicit material. Furthermore, bookmarking approved sites for *in vivo* exposure homework will make locating the correct internet site easier for the client. However, caution should be used when bookmarking internet sites so that the nature of the client's trauma is not revealed to other computer users. By using these techniques and taking a few minutes in the therapy session to demonstrate them, even clients who have limited knowledge of computers or the internet will be able to access their *in vivo* cue.

Clinicians are encouraged to be proactive in suggesting various adaptations to cues established on the hierarchy. Whether in an attempt to continue avoidant behaviors or from lack of insight, clients may not readily accept the idea of similar, but not identical, *in vivo* cues. For example, initially a client may firmly believe that only the smell and touch of live roses will evoke a fear response. However, after engaging in *in vivo* exposure using pictures of roses, the client may

report being surprised by how much emotion the pictures evoked. Again, the level of distress may not be as high as if the cue had been live flowers, however the client can still benefit from the exposure exercise. To be clear, we are not suggesting that actual *in vivo* cues be excluded from the PE as they are an important part of PE and not equivalent to simulated cues. However, as previously stated, the inclusion of such cues may be reserved for when the client transitions to outpatient or aftercare treatment and until the client is able to access the cue (i.e., real roses), the use of a simulated cue (i.e., a picture of roses) may be an acceptable “starting point” for *in vivo* exposure.

Another important aspect to consider when conducting *in vivo* exposure with a substance dependent population is the client’s safety. As previously discussed, a client’s objective safety is always considered when establishing *in vivo* exposure homework. In a similar manner, a psychologist treating trauma-related symptoms in a substance dependent client will need to consider the safety of certain cues as it pertains to the client’s recovery. For example, if a client was assaulted in a bar, it is most likely objectively safe to return to a bar (there is nothing inherently dangerous about an establishment that serves alcoholic beverages). However, it would most likely not be safe for the client’s recovery to return to a bar. Thus, this type of cue would be modified such that both the client’s objective safety and recovery are protected (i.e., the client returns to the bar only in the presence of a supportive, drug-free friend) or, perhaps, this item would be removed from the hierarchy. This specification to the standard PE protocol again underscores the importance of maintaining abstinence and elucidates the connection between trauma and substance use treatments.

Implications and Applications

The preliminary efficacy of PE in treating trauma-related symptoms has been demonstrated in a range of populations and settings including an inner city community mental health center (Coffey et al., 2005; Coffey et al., 2006), a cocaine-dependent outpatient treatment sample (Brady et al., 2001), and an outpatient sample of substance abusing men (Najavits et al., 2005). This paper describes aspects of providing trauma treatment in a residential treatment facility in which the practicing psychologist may be called upon to provide more frequent sessions or to use his or her creativity when establishing *in vivo* homework assignments.

The implications of modifying PE to suit a residential facility go beyond the aforementioned concrete suggestions. There is a developing line of research which investigates the effects of implementing PE with substance dependent and posttraumatic stress disordered individuals while they are in substance use treatment programs in an attempt to not only treat PTSD but also improve their substance use treatment outcomes. Contrary to conventional wisdom, preliminary data suggest that using exposure therapy with substance dependent clients does not negatively affect the rate of attrition from treatment any more than providing relaxation training (Coffey et al., 2006) or other non-exposure based treatments (Brady et al., 2001) even though the retention of substance users with PTSD has frequently been problematic in clinical studies of this population (e.g., Brady et al., 2001; Coffey et al., 2006; Najavits et al., 1998). In fact, Coffey et al. demonstrated that reducing the negative affect associated with PTSD via exposure therapy reduced trauma-elicited alcohol craving. At this point, prospective studies, although ongoing, have not been completed so it is not known whether a reduction in PTSD symptoms and experimentally induced alcohol craving leads to improved substance use outcomes. However, there is evidence from completed studies that PTSD symptoms decrease in response to trauma-focused exposure therapy (Brady et al., 2001; Coffey et al., 2006). Given the strong support for the effectiveness of PE in treating trauma, including with substance dependent clients, providing modified PE to suit residential treatment clients appears to be clinically justified at this time.

In summary, psychologists treating clients within a residential substance use treatment facility are encouraged to consider the client's trauma-related symptoms and, specifically, how to treat these symptoms within the context of their recovery. Practitioners are encouraged to conduct a thorough assessment of trauma exposure and current symptoms and then to initiate trauma treatment expeditiously. Prolonged exposure, a very effective trauma treatment, can be successfully implemented with this population with some slight modifications described in this article. Additional resources for conducting PE include the treatment manuals, both for the therapist and the client (Foa et al., 2007; Rothbaum et al., 2007), and a video of Dr. Foa conducting the initial imaginal exposure therapy session. The video is available via the Association for Behavioral and Cognitive Therapies website (www.aabt.org).

Acknowledgments

The writing of this manuscript was supported, in part, by a grant from the National Institute on Alcohol Abuse and Alcoholism (R01AA016816, PI: Coffey).

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Biographies

AMBER M. HENSLEE received her PhD in clinical psychology from Auburn University. She is a postdoctoral research fellow at The University of Mississippi Medical Center in the Department of Psychiatry and Human Behavior. Her clinical and research interests include substance use disorders, posttraumatic stress disorder (PTSD), brief interventions, motivational interviewing and translating research in to practice.

SCOTT F. COFFEY received his PhD in clinical psychology from The University of Mississippi. He is Associate Professor and Director of the Division of Psychology in the Department of Psychiatry and Human Behavior at The University of Mississippi Medical Center. His research interests include substance use disorders, posttraumatic stress disorder (PTSD), the co-occurrence of PTSD and substance abuse, cue reactivity, psychotherapy treatment development, and impulsivity.