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Post-traumatic Stress Disorder

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6.22.1 DEFINITIONS

Post-traumatic stress disorder (PTSD) is an anxiety disorder that consists of a sustained and dysfunctional emotional reaction to an extreme stressor. The revised third edition of the *Diagnostic and statistical manual of mental*

disorders (DSM-III-R; American Psychiatric Association [APA], 1987) defined a trauma as an event that is outside the range of normal human experience and that would be markedly distressing to almost anyone. However, a normative definition of a trauma proved inadequate as epidemiological studies found

high prevalence rates of traumatic experiences in segments of the general population (e.g., Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Therefore, in *DSM-IV* (APA, 1994) the criteria were modified to include two aspects: the objective characteristics of the stressor, and the subjective experiences of the victim. Specifically, the traumatized person must have experienced or witnessed a situation involving actual or threatened bodily injury or death, or threat to physical integrity, and must have felt helpless, horrified, or terrified during the experience.

According to *DSM-IV*, PTSD symptoms fall into three general clusters: re-experiencing, avoidance, and arousal. To be eligible for a diagnosis of PTSD, three criteria must be met. First, the individual must re-experience the trauma in one of the following ways: nightmares, flashbacks, intrusive thoughts, and emotional distress or physiological arousal in response to internal or external cues that serve as reminders of the trauma. Second, the individual must have at least three avoidance symptoms: avoidance of thinking about the trauma, avoidance of reminders of the event, emotional numbing, detachment or distance from other people, less interest in activities, psychogenic amnesia, or a sense of a foreshortened future. Finally, individuals must experience at least two of the following arousal symptoms: sleep disturbance, hypervigilance, exaggerated startle response, irritability or outbursts of anger, or difficulty concentrating. If these symptoms persist for at least one month and cause considerable impairment in daily living, a diagnosis of PTSD is appropriate. In addition to the anxiety symptoms of PTSD itself, there is also high comorbidity between PTSD and depressive symptoms, other anxiety disorders, and substance abuse (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), and these can exacerbate dysfunction in daily living.

Although PTSD cannot be formally diagnosed unless symptoms persist for at least one month, many individuals show marked symptoms and impairment beginning immediately after a trauma and may benefit from some psychological intervention. Interest in this initial reaction to trauma gave impetus to the introduction of a new disorder called "acute stress disorder" into *DSM-IV* (APA, 1994). This disorder includes symptoms of PTSD with a special emphasis on dissociative symptoms and lasts anywhere from two days to four weeks post-trauma.

6.22.2 SCOPE OF THE PROBLEM

Both the prevalence of traumatic experiences and the rate of PTSD are alarming. Approxi-

mately 39% of people in the USA have experienced at least one traumatic event in their lifetime. Lifetime prevalence of PTSD is estimated at 24% among trauma victims and at 9% in the general population, with up to a third (3.4%) of these cases having chronic PTSD (Breslau, Davis, Andreski, & Peterson, 1991). In addition to individuals who meet full criteria for PTSD, up to 15% of the general population suffer from subthreshold symptoms (Davidson, Hughes, Blazer, & George, 1991).

Women appear to be somewhat more likely than men to develop PTSD following trauma (10.4% and 5%, respectively; Kessler et al., 1995). In a national sample of women, 69% had experienced some type of trauma, and 36% had been victims of crime: sexual assault, aggravated assault, or the homicide of a close friend or relative. The lifetime prevalence of PTSD in this sample was 12.9%, with six month prevalence of 4.6% (Resnick et al., 1993).

The experience of trauma according to *DSM-IV* includes not only the direct experience of a trauma, but also witnessing or learning about a traumatic event (APA, 1994). Symptoms can therefore develop in those who have little or no direct exposure to the trauma, although the symptom severity is directly related to degree of exposure (March, 1992). For example, ferry workers who were *not* among the crew of the capsized *Herald of Free Enterprise* ferry manifested PTSD symptoms, presumably because they identified strongly with co-workers who were in the ferry disaster (Dixon, Rehling, & Shiwach, 1993). This phenomenon has been referred to as the "ripples outward" effect.

Certain professionals are at risk for PTSD by virtue of increased probability of repeated direct exposure to trauma. In one study, 26% of police officers reported symptoms severe enough to meet symptom criteria of PTSD (Martin, McKean, & Veltkamp, 1986). Firefighters, emergency medical technicians, emergency room staff, and disaster workers are also thought to be at risk. For example 30% of firefighters of an Australian bushfire had chronic PTSD 29 months after the event (McFarlane, 1989).

6.22.3 RISK FACTORS FOR CHRONIC POST-TRAUMA PSYCHOPATHOLOGY

Factors related to risk of developing chronic disturbance may be divided into three types: pretrauma factors, factors related to the trauma itself, and post-trauma factors. We will briefly review research relevant to each of these factors.

Research on demographic variables has not identified reliable predictors of who will develop chronic PTSD (e.g., Foa & Riggs, 1993; Green, 1994). In contrast, it appears that poor psychological and social functioning prior to the trauma renders the individual vulnerable to developing chronic disturbances (Ruch & Leon, 1983). Also, a history of prior traumatic events in childhood or adulthood augments the response to subsequent traumas (Ellis, Atkeson, & Calhoun, 1981; Riggs, Foa, Rothbaum, & Murdock, 1992; Roth, Waylan, & Woolsey, 1990; Ruch & Leon, 1983).

It is safe to state that traumas differ in their likelihood of producing PTSD. In a retrospective study mentioned earlier, Resnick et al. (1993) found that 17.8% of female victims of aggravated assault and 12.4% of rape victims had current PTSD. In contrast, only 3.4% of female victims of noncrime trauma had PTSD. Three prospective studies of female victims of rape and nonsexual assault revealed higher rates of PTSD among the former at each data point up to three month postassault (Jaycox et al., 1996; Riggs, Rothbaum, & Foa, 1995; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). The severity of the trauma also appears to influence subsequent severity of PTSD: the degree of combat exposure among Vietnam veterans predicted pathology (Foy, Sippelle, Rueger, & Carroll, 1984; Pitman, Altman, & Macklin, 1989), and the perception of imminent life threat appears to predict post-trauma pathology among rape victims (Girelli, Resick, Marhoefer-Dvorak, & Hutter, 1986; Kilpatrick et al., 1989; Resick, 1986).

Just as traumas differ in their likelihood to produce PTSD, so do individuals differ in their reaction to a traumatic experience. Several post-trauma factors have been found to exacerbate symptoms. Dissociative experiences during the traumatic encounter or immediately after have been found to predict later distress or PTSD (e.g., Bremner et al., 1992; Koopman, Classen, & Spiegel, 1994; Marmar et al., 1994; Nishith, Mechanic, Griffin, & Resick, 1995; Tichenor, Marmar, Weiss, Metzler, & Ronfeldt, 1996). Also, on average, assault victims who exhibit more severe initial reactions to the trauma evidence more symptoms later on (Perry, DiFede, Musgni, Frances, & Jacobsberg, 1992; Riggs et al., 1995; Rothbaum et al., 1992; Shalev, Peri, Canetti, & Schreiber, 1996) although delayed peak PTSD symptoms were associated with more severe pathology compared with early peak (Gilboa & Foa, 1997). Evidence on the role of social support as facilitating or hindering recovery is equivocal. Indeed, empirical studies indicate that negative social interactions (e.g., victim blame or

disbelief) have strong negative effects on victim adjustment, whereas positive reactions from others have little impact on adjustment (Davis, Brickman, & Baker, 1991; Ullman, 1995). Excessive anger or guilt following the trauma also appear to block readjustment (Amir, Foa, & Cashman, 1997; Riggs, Dancu, Gershuny, Greenberg, & Foa, 1992).

Thus, a number of factors must be taken into account in evaluating a trauma victim, including the nature of the trauma, the victim's prior psychological adjustment and trauma history, and the level of distress in the aftermath of the trauma. As will be discussed further in the sections on theory, the meaning of the trauma and changes in beliefs about the self and world are also important factors to consider.

6.22.4 THEORIES ABOUT PTSD

For over 100 years, reactions to trauma have captured the interest of theorists of psychopathology. Janet (1889) was among the first to develop an integrated theory about trauma, suggesting extreme stressors besiege the individual with an excess of thoughts and feelings too numerous or intense to integrate. Consequently, some individuals selectively attend away from the trauma, focusing instead on trauma-irrelevant thoughts and feelings. In this way certain trauma-related ideas become split off (dissociated) from consciousness, where they cause fragmented reliving of the trauma in the form of visual images, somatic states, emotional disturbances, or behavioral re-enactment. As will be evident in the discussion below, Janet's ideas about reactions to trauma have influenced both early and contemporary theorists.

6.22.4.1 Psychodynamic Theories

Freud's thoughts about the effects of trauma on the psyche have shifted over time (van der Kolk, Weisaeth, & van der Hart, 1996). In his early writing Freud was highly influenced by Janet, elaborating the dissociation phenomenon (Breuer & Freud, 1955). He later abandoned the dissociation theory, proposing instead that trauma reactions persist because of an association between the traumatic event and childhood repressed conflicts (Freud, 1953), thus rejecting the possibility that a traumatic event alone can cause severe emotional impact. Confronted by the grim effects on people of World War I, Freud focused again on external reality and returned to the view that the emotional upheaval generated by trauma is the source of traumatic neurosis. He suggested that the intensity of the trauma, the inability to find conscious expressions for it,

and the unpreparedness of the individual cause a breach to the stimulus barrier and overwhelm the defense mechanisms (Freud, 1955).

6.22.4.2 Cognitive-behavioral Theories

Current cognitive-behavioral theory about the development and maintenance of PTSD stems from two lines of thinking. First is learning theory, which includes both classical and operant conditioning principles. Second is cognitive or schema theories, which propose evaluative processes as mediators in the development and maintenance of pathological anxiety. We will discuss how post-trauma psychopathology is conceived of within these two theoretical approaches and then present a third approach, emotional processing theory, that incorporates elements of the two within an information processing framework.

6.22.4.2.1 Learning theory

Mowrer's two-factor theory (1960) has been the most influential in the explanation of the pathological anxiety seen in PTSD. In this theory, fear is acquired through classical conditioning, in which a neutral stimulus (CS) is paired with an aversive stimulus (UCS), so that the CS comes to elicit a conditioned fear response (CR). Several theorists invoked this theory to explain the symptoms of PTSD (e.g., Foa, Steketee, & Rothbaum, 1989; Keane, Fairbank, Caddell, Zimering, & Bender, 1985; Kilpatrick et al., 1985), such that previously neutral stimuli that were present during the trauma come to elicit anxiety themselves. Through generalization and second-order conditioning, additional stimuli that are associated with either the feared stimuli or neutral stimuli that were present during the trauma also come to evoke fear. For example, words, thoughts, and images acquire the capacity to cause anxiety.

Subsequently, avoidance behavior is established through the process of operant conditioning. In this process, an individual learns to reduce trauma-related anxiety through avoidance of, or escape from, the CS. Escape and avoidance behaviors become established through the process of negative reinforcement, via their predicted capacity to end the aversive fear state. Because avoidance obstructs the realization that the CS has ceased to be followed by the UCS, fear is maintained.

6.22.4.2.2 Cognitive theories

Even during the influence of Mowrer's theory, discontent with non mediational accounts of anxiety stimulated the development of

cognitive approaches. However, the originators of cognitive theory for anxiety disorders gave little attention to PTSD itself. They did suggest, though, that people with traumatic neuroses do not discriminate between safe and unsafe signals, and that their "thinking is dominated by the concept of danger." They also proposed that traumatic fear can be maintained through a sense of incompetence to handle stressful events (Beck, Emery, & Greenberg, 1985).

More specific hypotheses about cognitive factors that mediate emotional responses to trauma were advanced by scholars who employed personality and social psychology theories (e.g., Epstein, 1991; Janoff-Bulman, 1992; McCann & Pearlman, 1990). Central to their theories is the concept of schemas: core assumptions and beliefs that guide the perception and interpretation of incoming information. These theories share the supposition that processing a traumatic experience requires modification of existing assumptions. Based on Piaget's (1971) model of cognitive development, it is thought that such modification is accomplished through two mechanisms: assimilation and accommodation.

Both Epstein (1991) and Janoff-Bulman (1992) hold the position that people in general assume that the world is benevolent, the world is meaningful, the self is worthy, and that these assumptions are incompatible with a traumatic experience. Therefore, the victim must struggle either to assimilate the traumatic experience into the old set of assumptions or, more often, to change the assumptions such that they can accommodate the traumatic experience. Expanding on this view, McCann and Pearlman (1990) proposed seven fundamental psychological need areas: frame of reference, safety, dependency/trust of self and others, power, esteem, intimacy, and independence. Trauma, they argue, may cause disruptions in any of these need areas and thereby lead to troublesome emotions and thoughts or images.

Drawing on both psychoanalytic and information processing concepts, Horowitz (1986) suggested that individuals have a basic need to match trauma-related information with their "inner models based on old information" (p. 92). Recovery from trauma is a process of repetitive "revision of both [sources of information] until they agree" (p. 92), called the completion tendency, which is reflected in the re-experiencing symptoms observed in individuals with PTSD.

6.22.4.2.3 Emotional processing theory

Foa and her colleagues (Foa & Jaycox, in press; Foa & Riggs, 1993; Foa et al., 1989; Foa,

Zinbarg, & Rothbaum, 1992) advanced a theory of PTSD that integrates learning, cognitive, and personality theories within an information processing framework, to explain why some individuals recover from a traumatic experience while others develop chronic disturbances. The starting point is the observation that emotional experiences are often relived well after the original emotional events have occurred, although the frequency and the intensity of emotional reliving usually decreases over time (Foa & Kozak, 1991). When these natural recovery processes are impeded, psychopathology emerges. To explain this pathological anxiety, Foa and Kozak (1985, 1986) adopted Lang's (1979) conceptual framework in which fear is viewed as a cognitive structure that serves as a program for escaping danger. Accordingly, fear is represented as a cognitive structure that includes three kinds of information: information about the feared stimulus; information about verbal, physiological, and overt behavioral responses; and interpretive information about the meaning of the stimulus and response elements of the structure. A fear structure is distinguished by the information that stimuli and/or responses are dangerous. In a subsequent exposition of emotional processing theory, Foa and Kozak, (1991) took the position that it is essentially this meaning information that distinguishes the fear structure from other information structures. With regard to PTSD, Foa and her colleagues (Foa & Jaycox, in press; Foa & Riggs, 1993) suggested that two classes of pathological cognitions underlie this disorder are: the world is utterly dangerous and the self is completely incompetent; a corollary of these is the idea that persistent PTSD symptoms are dangerous and are indicators of self-incompetence.

6.22.5 EFFICACY OF PSYCHOSOCIAL TREATMENTS FOR PTSD

Several types of psychosocial treatment have been employed for post-trauma disturbances, including hypnotherapy, psychodynamic psychotherapy, and cognitive-behavioral therapies. However, most outcome studies have focused on examining the efficacy of the latter (see Foa & Meadows, 1997, for a critical review). This section will review these studies.

6.22.5.1 Hypnotherapy

Hypnosis has long been used in the treatment of post-trauma disturbances (Spiegel, 1989). Freud used hypnosis to facilitate abreaction and catharsis, which he felt were necessary for recovery. Spiegel advocates the use of hypnosis

in treating PTSD because processes akin to hypnotic trance, such as dissociation, occur naturally and are commonly used during or after a trauma. Spiegel proposes that hypnosis may facilitate the remembering of traumatic experiences that were encoded in a dissociative state.

Several case reports have described the usefulness of hypnosis for individuals with PTSD stemming from a variety of traumas (e.g., Jiranek, 1993; Kingsbury, 1988; Leung, 1994; MacHovec, 1983; Peebles, 1989; Spiegel, 1988, 1989). However, most of these lack methodological rigor and therefore the conclusions that can be drawn from them about the efficacy of hypnosis are limited.

One large controlled study compared hypnosis, desensitization, and psychodynamic psychotherapy with a wait-list control group among individuals who had experienced stressors (Brom, Kleber, & Defres, 1989). The majority of the participants, however, did not directly experience the traumatic event, but rather had lost a loved one. All three conditions produced superior improvement to the wait-list condition on self-report measures, but no differences across the three treatments were observed. Specifically, improvement in post-trauma symptoms was 29% for psychodynamic therapy, 34% for hypnotherapy, and 41% for desensitization, compared with about 10% improvement in the wait-list condition. This study offers evidence for the efficacy of hypnosis and other psychosocial therapies in reducing bereavement-related symptoms.

6.22.5.2 Psychodynamic Treatments

A variety of psychodynamic concepts have been utilized in individual and group therapy for trauma survivors (e.g., Horowitz, 1976; Yalom, 1995). For example, Horowitz's brief dynamic therapy emphasizes the concepts of denial, abreaction, catharsis, and stages of recovery from trauma in the treatment for post-trauma difficulties. The target of this brief psychodynamic therapy is the resolution of the intrapsychic conflict arising from the traumatic experience.

Only a few studies have been conducted to evaluate psychodynamic interventions for PTSD, and many have methodological difficulties that make their results difficult to interpret. One study used brief psychodynamic therapy to address difficulties following the Beverly Hills Supper Club fire (Lindy, Green, Grace, & Titchener, 1983). In this study, survivors included those present at the scene, rescue workers, people who lost significant others, and individuals who identified the

bodies. Only 9 of 30 met criteria for PTSD prior to treatment. Survivors who agreed to be in the research study but did not request psychotherapy served as the comparison group. Patients who completed treatment exhibited somewhat lower symptoms than did patients who did not complete treatment and the non-treated comparison group did not improve as much as treatment completers.

Another study examined the efficacy of a group therapy based on Horowitz's (1976) model of responses to trauma with 13 sexual assault victims (Roth, Dye, & Lebowitz, 1988). The control group comprised 13 women who agreed to undergo assessments, and random assignment was not used. There were no clear effects at post-treatment, but high attrition rates in both the treated and control groups may have obscured effects. Results over a longer time period showed greater improvement in the therapy. Again, methodological problems render these results inconclusive. As described above, a study comparing Horowitz's (1976) brief psychodynamic therapy did as well as hypnosis, and desensitization; all did better than the wait-list control group (Brom et al., 1989).

In a study of psychodynamic treatment for conjugal bereavement, Marmar, Horowitz, Weiss, Wilner, & Kaltreider (1988) randomized bereaved individuals (widows) to 12 weekly sessions of either brief dynamic therapy or mutual help group treatment. Although death of a husband does not necessarily qualify as a *DSM-IV* trauma, some of the women in this study were diagnosed as having PTSD. Results indicated that patients in both conditions improved slightly, but there were no differences between groups. On one of many measures (the total score of the Symptom checklist, SCL-90) the dynamic therapy conditions showed greater reduction in symptoms at follow-up.

Scarvalone, Cloitre, & Difede (1995) used a quasi-experimental design to compare interpersonal process group therapy (IPGT) with a naturally occurring wait-list control in a sample of female childhood sexual abuse survivors, many of whom were diagnosed with PTSD. Patients in the IPGT group improved on a number of measures and fewer evidenced PTSD at post-treatment than in the wait-list group. However, because the evaluators were not blind to treatment condition, the extent to which expectancy for improvement influenced the evaluation is unknown.

6.22.5.3 Cognitive-behavioral Therapy

As noted earlier, cognitive-behavioral treatments have been evaluated far more extensively than have other psychosocial treatments for

PTSD, via case reports and well-controlled studies. In this section, we will focus on controlled studies only that evaluate the efficacy of cognitive-behavioral programs developed to ameliorate PTSD symptoms: exposure therapy, anxiety management training, cognitive therapy, and their combinations.

6.22.5.4 Studies of Imaginal and *In Vivo* Exposure

Exposure therapy is a set of procedures that involve confrontation with feared stimuli, either *in vivo* or in imagination (e.g., flooding, systematic desensitization), which will be described in detail in the next section. With PTSD, exposure therapy typically includes repeated reliving of the traumatic event (in imagination) and *in vivo* confrontation with trauma-related situations that evoke fear but are not realistically dangerous.

Three controlled studies of male Vietnam veterans, each examining 6–16 sessions of imaginal exposure to the traumatic experience, have been conducted. In one study, patients were given up to nine sessions of imaginal flooding exposure in addition to “standard” treatment, or standard treatment alone (weekly individual and group therapies) (Cooper & Clum, 1989). In the second study, imaginal exposure (45 minutes of exposure preceded by relaxation) was compared with a no-treatment wait-list condition (Keane, Fairbank, Caddell, & Zimering, 1989). In the third study, all patients received group treatment. In addition to group treatment, half the patients received weekly imaginal exposure and the other half received weekly individual traditional psychotherapy (Boudewyns & Hyer, 1990; Boudewyns, Hyer, Woods, Harrison, & McCranie, 1990).

These three studies found that imaginal exposure produced some improvement in PTSD compared with the control groups, but the effects were rather small. In the Cooper and Clum (1989) study, imaginal exposure improved the PTSD symptoms, but had little effect on depression or trait anxiety. In the Keane et al. (1989) study a mixed picture emerged: therapists rated patients who received exposure as more improved on PTSD symptoms than control subjects, but on self-report measures of PTSD symptoms, no group differences emerged. However, patients who received exposure did rate themselves as more improved on general psychopathology measures than did those in the wait-list control. Boudewyns and Hyer (1990) found no group differences on psychophysiological measures, but the exposure group had improved more than controls on the Veterans Adjustment Scale at the three month follow-up.

Two completed studies of female assault victims examined the efficacy of exposure treatments for PTSD in comparison to other treatments and to wait-list controls. The assaults targeted for treatment occurred in all cases at least three months prior to treatment, to control for the effect of natural decline in symptoms that occurs shortly following an assault (Rothbaum et al., 1992). Exposure treatment consisted of nine twice-weekly individual sessions, seven of which included active exposure exercises and two of which were devoted to information gathering and education.

In the first study (Foa, Rothbaum, Riggs, & Murdock, 1991), exposure treatment (PE) was compared with stress inoculation training (SIT, which will be described later), to supportive counseling (SC), and to a wait-list control. Immediately post-treatment, patients in the PE and the SIT groups improved on all three clusters of PTSD symptoms. Patients in the SC and wait-list conditions evidenced improvement on arousal symptoms, but not on avoidance or re-experiencing symptoms. A follow-up evaluation that was conducted approximately three months after treatment revealed no differences between the active treatments; however, on all measures of psychopathology the PE group had less pathology. At follow-up, 55% of those receiving PE, 55% of patients who received SIT, and 45% of those receiving SC did not meet criteria for PTSD.

The second study compared PE, SIT, and a group treated with the combination of SIT and PE with one another and with a wait-list control group. All three active treatments showed significant improvement in PTSD symptoms, state anxiety, and depressive symptoms at post-test, and the wait-list did not improve. These treatment effects were maintained at the 3, 6, and 12 month follow-ups. On an index of good end-state functioning (defined as 50% improvement in PTSD symptoms, Beck Depression Inventory less than 9, and State-Trait Anxiety Inventory less than 40), 50% of patients who received PE achieved this criterion, whereas 37% and 38% of patients who received SIT and SIT/PE achieved the criterion, respectively; none of the patients in the control group reached this status (Foa, Dancu, Hembree, Jaycox, & Meadows, 1997). Moreover, those that received PE (PE or SIT/PE) improved more on all symptoms measures as compared with those who did not receive PE (SIT or wait-list).

Two additional studies with female assault victims are in progress. Resick and colleagues (Resick, Nishith, & Astin, 1996) are examining the relative efficacy of PE and cognitive processing therapy (CPT), a therapy that will be described later when we discuss combined

treatments. At post-treatment and at follow-up, both interventions resulted in large reduction of PTSD symptoms, but no clear group differences have emerged from the preliminary data. The second ongoing study (Foa, Jaycox, Meadows, Hembree, & Dancu, 1996) compares 9–12 sessions of PE alone with a program that includes PE and cognitive restructuring. Again, preliminary analysis suggests that both programs were highly effective but, unexpectedly, PE alone appears slightly more effective than the combined treatment.

One study that utilized a cross-over design examined the efficacy of PE with victims of diverse traumas, comparing the efficacy of *in vivo* and imaginal exposure by randomly assigning 14 patients with PTSD to one of two conditions: four sessions of *in vivo* exposure followed by four sessions of imaginal exposure; or eight sessions in the reverse order (Richards, Lovell, & Marks, 1994). Considerable improvement was observed in both groups, with symptom reduction between 65% and 80% and all patients losing the diagnosis of PTSD at post-test and at one-year follow-up. Results indicated that phobic avoidance was more reduced by *in vivo* than by imaginal exposure, regardless of the order in which it was received.

6.22.5.4.1 *Studies of eye movement desensitization and reprocessing*

A recently developed exposure technique called “eye movement desensitization and reprocessing” (EMDR; Shapiro, 1995), which combines imaginal exposure with saccadic eye movements, is beginning to be examined in empirical studies. However, to date, many of the outcome studies conducted have been plagued with methodological problems, making them difficult to interpret.

Several studies have compared EMDR to standard treatments in veterans, but none used independent evaluations of symptoms (e.g., Boudewyns, Stwertka, Hyer, Albrecht, & Sperr, 1993; Jensen, 1994). Another study that utilized a mixed sample of traumatized individuals, only some of whom had PTSD, showed that victims who received EMDR reported decreases in presenting complaints and in anxiety at post-test, whereas the wait-list group reported no such changes (Wilson, Becker, & Tinker, 1995). In an attempt to evaluate the effect of the saccadic eye movements, Pitman et al. (1996) compared EMDR to eyes-fixed exposure in a cross-over design using male veterans. No differences were found between EMDR and the eyes-fixed exposure condition on self-reported distress within sessions, with both groups showing modest gains on self-reported

symptoms. Because these studies all relied solely on self-report data, the results may reflect expectancies for improvement after treatment rather than specific effects of EMDR.

Two studies did use independent evaluations of PTSD symptoms. The first used victims of heterogeneous traumas to compare EMDR with imagery habituation training and with applied muscle relaxation training (Vaughan et al., 1994). All three groups improved equally on independent ratings of PTSD symptoms after treatment. The second controlled study utilized female assault victims who had PTSD, and found EMDR to be more effective compared with a wait-list control group (Rothbaum, 1995). After four weekly sessions of EMDR, assessor's ratings of PTSD indicated 57% symptom reduction, and a self-report measure indicated 74% symptom reduction, and these gains were maintained at a three month follow-up.

In summary, the two controlled studies that used blind assessment provide preliminary evidence that EMDR is effective in the treatment of PTSD, but its value over and above other more established treatments is as yet unknown. Further studies about the efficacy of EMDR are clearly needed.

6.22.5.4.2 *Studies of cognitive therapy and anxiety management training*

Cognitive techniques aim at teaching patients systematically to examine and challenge maladaptive cognitions which are thought to underlie negative emotions. Early work with rape victims used cognitive therapy to address post-rape anxiety and depression, but these studies did not evaluate PTSD symptoms *per se* (Frank et al., 1988; Frank & Stewart, 1984; Turner & Frank, 1981). The therapy produced positive change on ratings of fear, anxiety, depression, and social adjustment. However, some patients had been recently raped, and therefore their improvement could reflect natural recovery. Although the effects of cognitive therapy on PTSD has not yet been studied, this therapy is often included as a component of anxiety management programs.

Anxiety management training (AMT) provides patients with a repertoire of strategies to handle anxiety. These include relaxation training (Bernstein & Borkovec, 1973; Jacobson, 1938), self-instruction (Meichenbaum, 1974), breathing retraining (Clark, Salkovskis, & Chakley, 1985), biofeedback (e.g., Blanchard & Abel, 1976), social skills training (e.g., Becker, Heimberg, & Bellack, 1987), and distraction techniques (Wolpe, 1973). AMT does not target specific mechanisms presumed to underlie

anxiety, as exposure and cognitive therapy do, but instead aims to provide the patient with ways to manage anxiety when it occurs (Suinn, 1974). Because of the multiple elements contained in most AMT programs, it is not possible to determine the contribution of any specific procedure to overall outcome.

SIT (Kilpatrick, Veronen, & Resick, 1982) was developed as a treatment for rape victims with chronic disturbances. Modifying Meichenbaum's (1974) stress inoculation training, it included deep muscle relaxation training, breathing control, role playing, covert modeling, thought-stopping, and guided self-dialogue. In a sample of rape victims, Resick, Jordan, Girelli, Hutter, & Marhoefer-Dvorak (1988) compared the efficacy of a modified SIT, assertion training, and supportive psychotherapy with a naturally occurring wait-list control group. All three treatments were equally but only moderately effective in reducing trauma-related symptoms, depression, self-esteem, and social fears; gains were maintained at six month follow-up on rape-related fear measures but not on other measures. No improvements were found in the wait-list control group.

Two studies, described in Section 6.22.5.4, examined the efficacy of SIT with female rape and nonsexual assault victims who met criteria for PTSD (Foa et al., 1997, 1991). The SIT program in both studies was adapted from the Kilpatrick et al.'s (1982) program described above. In the first study, both SIT and PE produced significantly more improvement on PTSD symptoms than the wait-list group and supportive counseling immediately following treatment. However, patients who received PE continued to improve after treatment termination, whereas patients in the SIT and supportive counseling conditions evidenced no change between post-treatment and follow-up (Foa et al., 1991). In the second study, SIT, PE, and the combination both showed immediate and long-term (up to one year) treatment effects as compared with the wait-list. However, when patients who received SIT were compared with patients who did not, no significant differences emerged on any of the measures. Also the effect size for PE relative to the control condition was larger than that for SIT on all measures (Foa et al., 1997).

6.22.5.4.3 *Studies of combination therapies*

The success of both PE and SIT for rape-related symptoms spurred the development of combination programs that include confrontations with feared stimuli in combination with cognitive therapy or anxiety management skills. Two such programs have been studied with

female assault victims who manifested chronic PTSD and a third one is currently being evaluated. The first consisted of the combination of SIT and PE (SIT/PE), already described above (Foa et al., 1997). Contrary to the expectations that SIT/PE would enhance treatment benefit, all three active treatments (SIT, PE, and SIT/PE) were effective in reducing PTSD severity. In fact, it appeared that PE was superior to SIT and their combination (Foa et al., 1997). Foa et al. suggested that since the combined treatment was delivered in the same number of sessions, it is possible that patients did not receive as much imaginal exposure as the PE group. Also, the SIT program contained seven different techniques, some of which may not be effective. As noted above, Foa and her colleagues are currently examining the relative efficacy of PE combined with cognitive restructuring to PE alone and to a wait-list control group (see Jaycox, Zoellner, & Foa, 1997, for a case example and discussion).

The second combined program for rape victims with PTSD is CPT and which has been tested in a quasi-experimental design (Resick & Schnicke, 1992). CPT can be conducted in a group format. It includes education, an exposure component consisting of writing the trauma narratives and sharing it with the therapist and group members, and cognitive restructuring. The efficacy of CPT was compared with that of a naturally occurring wait-list, but no random assignment was instituted. Patients who received CPT showed significant and lasting improvement whereas those on the wait-list did not. As noted earlier in the section on exposure therapy, Resick (Resick et al., 1996) is conducting a study comparing CPT delivered individually with PE alone. Preliminary results suggest that both programs are highly effective and do not differ from one another.

6.22.6 PREVENTION PROGRAMS

Many trauma researchers and mental health professionals emphasize the need for intervention immediately after a trauma, with the aim of preventing chronic disturbances (e.g., Bell, 1995). While there is scant evidence in support of the efficacy of immediate intervention, many programs have followed the "critical incident debriefing" model developed by Mitchell and Bray (1990). This program typically includes seven phases conducted in small groups and delivered within three days of the traumatic event: establishing the purpose of the debriefing and the ground rules, "recreating" the event by having all participants give their perspective on

what occurred, discussion of individuals' thoughts during the event, description of the worst part of the event for each individual, discussion of reactions to the event, a presentation of common reactions to trauma by group leaders to normalize participants' responses, and a wrap-up phase.

These types of interventions have been applied to survivors of a variety of traumatic situations, including bank employees held at gunpoint (Manton & Talbot, 1990), emergency workers (e.g., Armstrong, O'Callahan, & Marmar 1991), and military personnel (e.g., Fitzgerald et al., 1993). However, the efficacy of these programs has not been ascertained in well-controlled studies and some uncontrolled trials suggest that the debriefing can have a deleterious effect. As noted by Raphael, Meldrum, and McFarlane (1995), randomized well-controlled studies of such programs have not yet been conducted.

The recognition that victims who exhibit severe reactions shortly after the trauma are more likely to develop chronic dysfunction (Riggs et al., 1995; Rothbaum et al., 1992) has prompted researchers to implement interventions that aim to prevent chronic PTSD. Foa and colleagues conducted a study to compare PTSD severity of 10 female assault victims who received a brief prevention (BP) program (four individual therapy sessions) with that of 10 matched victims who underwent an assessment procedure (Foa, Hearst-Ikeda, & Perry, 1995). Victims who received the brief prevention program showed symptom reductions of 74%, compared with a mean reduction of 33% in the assessment control group. Although the small sample size and lack of random assignment precludes drawing definitive conclusions as to the efficacy of the BP, the results are encouraging, and Foa and her colleagues are now studying this intervention in a larger sample of female trauma victims.

In summary, there is no evidence to date that the commonly used crisis interventions are effective, but they have not yet been rigorously tested. With female assault victims, short-term behavioral interventions may help in preventing chronic post-trauma problems. Foa and Meadows (1997) noted that one difference between the crisis intervention programs and the Foa, Hearst-Ikeda, and Perry (1995) study is the time frame in which the intervention was delivered. A typical crisis intervention is employed within three to four days after the traumatic event, whereas the BP program was instituted about two weeks post-trauma. Clinical observations suggest that during the first few days after the trauma victims are still disoriented and preoccupied with immediate logistical concerns,

such as interaction with law enforcement or medical systems. Perhaps then a program that is implemented during this period cannot be processed adequately to provide benefit and may even add to the already existing state of confusion. Studies should investigate the optimal time for the delivery of crisis interventions.

6.22.7 PROLONGED EXPOSURE THERAPY FOR PTSD: THEORY AND PRACTICE

Despite a wide array of treatments that are being employed with trauma victims, most outcome studies focus on cognitive-behavioral programs which, as note above, were proven to be quite effective in ameliorating PTSD and related disturbances. Of these, exposure therapy seems to occupy a favored position. First, variants of exposure used with a variety of trauma populations, including veterans, assault victims, and sample victims of mixed traumas, have all indicated at least some degree of success. Second, the evidence for the efficacy of exposure comes from controlled studies conducted in different research centers, thus reducing the possibility of researchers' bias. In contrast, the two controlled studies on SIT were conducted in a single center, as were the studies of CPT. Third, PE has the advantage that compared with SIT and CPT, it is relatively straightforward and thus therapists can easily be trained to deliver it. Because of the apparent advantage of PE, we will focus on PE in the next section. We will first discuss the mechanisms thought to underlie exposure techniques as a background for understanding the subtleties of how to implement it successfully.

6.22.7.1 Mechanisms Underlying Prolonged Exposure

Emotional processing theory discussed earlier (Foa & Kozak, 1985, 1986) posits that, regardless of the type of therapeutic intervention, two conditions are required for fear reduction to occur. First, the fear structure must be activated via introduction of fear-relevant information, because if the fear structure is not activated (fear is not evoked), the structure would not be available for modification. In other words, successful treatment requires that the patient be engaged emotionally with the feared or traumatic material. Second, new information must be provided that includes aspects that are incompatible with the pathological elements, so that these can be corrected. Accordingly, successful therapy can be understood as correcting

erroneous associations in the pathological fear structure targeted in treatment. In the case of PTSD, Foa and colleagues (Foa & Jaycox, in press; Foa & Riggs, 1993) suggested that treatment should correct the mistaken beliefs that "the world is extremely dangerous" and "I [the victim] am extremely incompetent."

As noted earlier, exposure procedures for PTSD consist of confronting the patient with trauma-related information, thus activating the trauma memory (i.e., eliciting the trauma-related fear). This activation constitutes an opportunity for corrective information to be integrated, and thus for the pathological elements of the trauma memory to be modified. Foa and Kozak (1986) suggested that fear reduction (habituation) within and across exposure sessions is an indicator that meaning changes in the fear structure have taken place. Several studies lend support to the proposition that emotional engagement or fear activation enhances treatment efficacy (c.f. Foa & Kozak; Kozak, Foa, & Steketee, 1988). Of particular relevance to PTSD are two studies demonstrating that emotional engagement with the trauma memory during treatment predicts successful outcome (Foa, Riggs, Massie, & Yarczower, 1995; Jaycox, Foa, & Morral, in press).

Several mechanisms have been proposed to underlie observed improvement of PTSD (Foa & Jaycox, in press; Foa & Riggs, 1993). First, repeated, prolonged, imaginal reliving of the trauma is thought to promote habituation of the anxiety previously associated with the trauma memory, thus correcting the erroneous belief common to patients with PTSD that anxiety stays forever unless avoidance or escape is realized. Second, deliberate confrontation with the feared memory blocks negative reinforcement, the process whereby relief of anxiety following cognitive avoidance of trauma-related thoughts and feelings reinforces avoidance behavior. Third, exposure to the trauma memory in a safe and supportive therapeutic setting incorporates safety information into the trauma memory, thereby refuting the belief that remembering the trauma is dangerous. Fourth, focusing on the trauma memory for a prolonged period helps the patient to discriminate between the trauma and other nontraumatic events, thereby rendering the trauma as a specific occurrence rather than a representation of a dangerous world and of an incompetent self. Fifth, successful reliving changes the belief that PTSD symptoms are a sign of personal incompetence to a belief that they are a sign of courage and competence. That is, the patient realizes that the distress experienced during reliving (PTSD symptoms) does not lead to anticipated loss of control or "going crazy."

Sixth, prolonged, repeated reliving of the traumatic event allows the patient to focus on specific elements of the trauma that drive negative evaluations about themselves, and to modify those evaluations. For example, a 25-year-old patient who suffered from PTSD following a rape by an acquaintance was convinced at the beginning of treatment that she was weak because she had not been able to prevent the rape. Through the process of imaginal reliving, she spontaneously realized “He was a very big man, and I am small,” and this realization helped to modify her negative self-image.

In addition to the six mechanisms suggested above, Foa and Riggs (1993) suggested that the fear structures of traumatic memories are more disorganized than nontraumatic memories. A disorganized memory, they proposed, is particularly resistant to modification. Repeated, prolonged trauma reliving generates a more organized memory record that can be more readily integrated with existing schemas. Support for this contention comes from a study analyzing the victims’ narratives of the trauma during exposure (Foa, Molnar, & Cashman 1995). Indices of disorganization, such as unfinished thoughts and repetitions, decreased from the first to the last narrative and this decrease was correlated with improvement.

Most of the mechanisms discussed above are also thought to operate in *in vivo* exposure. However, the most salient mechanism during *in vivo* exposure is the correction of overestimates of the probability of danger. As will be described in the next section, the trauma victim with PTSD often comes to fear a certain time of day, a physical characteristic of an assailant, or a part of the city because the fear has generalized to situations that bear similarity to the original trauma even when he or she is objectively safe. Some situations are avoided because they are reminders of the trauma and thus elicit distress and PTSD symptoms. Repeated confrontation with such objectively harmless situations is thought to prompt a more realistic appraisal of danger.

6.22.7.2 How To Implement Exposure-based Therapy

Often, cognitive-behavioral therapy (CBT) researchers neglect to discuss the therapeutic relationship when reporting outcome data. However, in CBT, just as in any other therapeutic environment, the therapist-patient alliance is indispensable. This is usually established in the first two sessions when the therapist elicits information about the trauma and its

aftermath. This discussion provides an opportunity to express empathy and personal concern with the well-being of the patient. The therapy is presented as a collaborative effort, where the therapist and patient work together to achieve specific goals. With trauma victims, the explicit goal is the reduction of PTSD symptoms. Often patients are preoccupied with a number of other life issues, such as relationship problems, work stress, or parenting issues. These issues, while important, can divert attention away from the work on trauma-related disturbances and hinder treatment efficacy. Therefore, the therapist and the patient should come to an understanding from the outset that such issues will be set aside to be addressed after the exposure therapy has successfully been implemented. If daily crises around such issues are too pressing, the therapist and the patient may decide to delay exposure therapy.

6.22.7.2.1 Information gathering

Therapy begins with a comprehensive evaluation of PTSD and related symptoms, as well as information about the trauma itself. Objective characteristics of the trauma (e.g., extent of injury, time of day, characteristics of assailant) are important for treatment planning, so that the therapist can plan exposures that effectively address trauma reminders. Subjective factors of the assault (e.g., fear of death, dissociation during the trauma) are also important, since they will help guide the therapist to include these details in the imaginal reliving. A detailed trauma history will help the therapist identify the trauma or traumas that generate PTSD symptoms and make it the focus of treatment. In some cases, it is possible to work on more than one traumatic event sequentially during the course of treatment, especially if the traumas are similar.

6.22.7.2.2 Breathing retraining

Since exposure techniques involve direct confrontation with feared stimuli, PTSD symptoms often increase in the beginning of therapy and this should be discussed with the patient before exposure sessions begin. Training patients to use a simple relaxation technique helps ease this initial increase in distress. We have chosen breathing retraining in our program because of its versatility: patients can use this technique in almost any life situation without disruption of their activity or attracting the attention of others. Teaching this technique at the end of the first session seems to help the patient calm down after discussing in detail the traumatic experiences.

In breathing retraining the patient is taught to inhale a “normal” amount of air, and then to exhale very slowly (four or five seconds). During exhalation, the patient is asked to repeat the word “calm” or “relax” mentally and to hold his or her breath for about four seconds before inhaling again. Ideally, the therapist would practice this technique in the session, and to make an audiotape of the instructions and the demonstration for the patient’s use at home. Patients are instructed to practice the breathing when they are relatively calm at first, and then begin implementing the technique when they are anxious.

6.22.7.2.3 Education about symptoms

Patients with PTSD interpret PTSD symptoms as a sign that they are “losing their minds,” or “going crazy.” It is extremely important to educate the patient about common reactions to trauma in order to provide them with a framework for understanding their own symptoms and to help them comprehend the treatment rationale. Education about reactions to trauma includes information about PTSD symptoms: the nature of fear and anxiety in response to triggers and cues, re-experiencing the trauma, concentration problems, feeling overly alert and on guard, avoidance of thoughts and feelings as well as reminders of the trauma, emotional numbing, and anger. In this context some related difficulties are discussed, including sadness about losses related to the trauma, feeling out of control or crazy, negative self-image and ideas of incompetence, lack of trust in others and thoughts about the whole world or all people being dangerous, relationship problems, sexual dysfunction or fears (usually following sexual assault), and a rekindling of emotion related to prior traumatic experiences. The education component is best delivered in an interactive, collaborative style, providing the patient with the opportunity to discuss his or her own symptoms and disturbing thoughts.

6.22.7.2.4 In vivo exposure

A crucial component of exposure therapy is its rationale. In exposure therapy the therapist is asking the patients to abandon their avoidance strategies used to manage their symptoms and instead to engage in imagery and in activities that are likely to cause some emotional distress in the beginning. Understanding the rationale for this therapy that “asks them to suffer” is essential for enlisting the patient’s motivation. *In vivo* exposure aims at reducing the anxiety that patients with PTSD experience when they confront trauma reminders, and thereby return

the patient to their pretrauma level of functioning. The rationale is explained as follows:

In this program, we are going to focus on the fears that you are experiencing, and your difficulty coping, both of which are directly related to your assault. We’ve talked about the feelings, thoughts, and memories that are connected with the assault. We’ve also talked about some of the ways in which you are coping with that distress, such as avoiding situations and memories that remind you of the assault.

Although most of the symptoms that you and I have talked about gradually decline with time after the trauma, for many victims like yourself, some of these symptoms endure and continue to cause marked distress. It is possible to spend up your recovery process by understanding what causes your reactions.

A major factor is *avoidance* of situations, memories, thoughts, and feelings. It is quite normal for people to want to escape or avoid memories, situations, thoughts, and feelings that are painful and distressing. However, while the strategy of avoiding painful experiences works in the short-run, it actually prolongs the post-trauma reactions and prevents you from getting over your trauma-related difficulties. (The therapist may want to elicit examples of the client’s avoidance based on previous discussion of common reactions.)

When you *confront* the painful experiences, rather than avoid them, you will have the opportunity to process the traumatic experience. For example, if you avoid assault-related situations that are objectively safe, you do not give yourself the opportunity to get used to being in these situations. Unless you confront the situations, you may continue to believe that they are dangerous and that your anxiety in these situations will remain indefinitely. However, if you confront these situations you will find out that they are not actually dangerous and that your anxiety will diminish with repeated, prolonged confrontations. As a result of this process your symptoms will decline. The same is true for painful memories. For this reason we will ask you to relive repeatedly in your imagination the assault and to confront relatively safe situations that you are now avoiding.

Today we are going to concentrate on your tendency to avoid situations and people that are related to the trauma. In order to help you stop avoiding situations and people that were once enjoyable or important to you, we are going to work together to make a list of situations that you have been avoiding since the assault. I call this list “the hierarchy.” I also want to find out from you how much distress or discomfort these situations would cause you if you weren’t avoiding them. Therefore I will teach you a method to indicate your level of distress. Of course we will not ask you to confront unsafe situations. The goal is not to help you view dangerous situations as safe, but rather to help you stop avoiding situations that are realistically quite safe. (Foa & Rothbaum, 1998)

After explaining the rationale, the therapist and patient construct a hierarchy of feared situations, listing all the situations or objects that the patient either avoids or endures with intense anxiety. The hierarchy may include situations that are directly related to the trauma (e.g., being in the place where the trauma occurred), or situations that have come to evoke anxiety through generalization (e.g., sleeping with lights off). A list of about 10 to 12 items is constructed and the therapist describes the “subjective units of distress” (SUDs) scale. The SUDs scale is anchored individually for each patient, so that a 0 indicates the most calm and relaxed that the patient has ever felt (e.g., lying on the beach); and a 100 indicates the most fearful or distressed the patient has ever been (e.g., during the trauma). The therapist then elicits SUDs ratings for each of the situations on the hierarchy, indicating the level of distress expected when confronting that situation. For example, Bonnie is a 37-year-old African-American woman who was raped by a male acquaintance in a friend’s home. During the information gathering, she reported fear that had generalized to being alone in many public situations. Her *in vivo* exposure hierarchy follows:

- 50 sleeping with the door closed and curtains closed
- 50 taking the bus alone in the early evening
- 60 going to sister’s house (near assault)
- 60 wearing a skirt on the bus in the early evening
- 75 sitting on a bench in a mall or shopping center
- 75 taking a walk alone (daytime)
- 75 walking by house where assault occurred with friend
- 100 sitting in park alone (daytime)
- 100 looking at pictures of assailant
- 100 sitting on steps of building where assault occurred with friend

After the hierarchy is constructed, specific instructions about how to implement exposure exercises between sessions are given:

When you are practicing in the mall, for example, you may initially experience anxiety symptoms, such as your heart beating rapidly, your palms sweating, feeling faint; you may want to leave the situation immediately. But in order to get over the fear it is important that you remain in the situation until your anxiety decreases. Once your anxiety has decreased at least 50%, then you can stop the exposure and resume other activities. (Foa & Rothbaum, 1998)

In each session, *in vivo* homework assignments are reviewed to gauge progress and to make modifications if the patient has difficulty. Avoidance of homework is gently confronted and the rationale reviewed if necessary. New assignments are explicitly planned with the patient each session, and some discussion of logistical constraints, anticipated problems, and alternate plans are helpful. Of course, some *in vivo* exposure may also be conducted in session (e.g., looking at picture of the assailant) with the therapist’s guidance.

6.22.7.2.5 Imaginal exposure

As described earlier, the first step in exposure treatment is explaining the rationale for the procedure. The following is an example of the rationale being explained to a patient:

Today we are going to spend most of the session having you relive the memory of your assault in your imagination. It is not easy to understand and make sense of traumatic experiences. When you think about the rape, or you are reminded of it, you may experience extreme anxiety and other negative feelings such as shame or anger. The assault was a very frightening and distressing experience, so you tend to push away or avoid the painful memories. You may tell yourself, “Don’t think about it; time heals all wounds” or, “I just have to forget about it.” Other people often advise you to use these same tactics. Also, your friends, family, and partner may feel uncomfortable hearing about the assault, and this may influence you not to talk about it. But, as you have already discovered, no matter how hard you try to push away thoughts about the assault the experience comes back to haunt you through nightmares, flashbacks, phobias, and distressing thoughts and feelings. These symptoms signal us that your assault is still “unfinished business.” In this treatment our goal is to help you process the memories connected with the assault by having you remember them for an extended period of time. Staying with these memories, rather than running away from them, will help decrease the anxiety and fear that are associated with them. It is quite natural to want to avoid painful experiences such as memories, feelings, and situations that remind you of the assault. However, as we already discussed, the more you avoid dealing with the memories, the more they disturb your life.

What we are going to do today is to begin helping you process the memories associated with your assault. The goal of imaginal exposure as well as *in vivo* exposure is to enable you to have thoughts about the rape, talk about it, or see triggers associated with it without experiencing intense anxiety that disrupts your life. This part of the program includes having you confront situations and memories that generate both anxiety and an urge to avoid. Gradually, the memories will become less painful. You will get used to them.

Remember, we call this “habituation.” Before we begin, do you have any questions about anything that I have said?

Repeated reliving of the trauma will also help you in other ways. It will teach you that remembering is not re-experiencing the trauma. In other words, it will help you discriminate between remembering the trauma and being traumatized again. There is no danger in remembering and therefore there is no good reason to become overwhelmed with anxiety every time that you think about the rape. Also repeated reliving will teach you that you are not going to lose control or go crazy if you engage with the traumatic memory. On the contrary, through repeated reliving of the rape you are going to gain control over your memories instead of them having control over you.

And finally, engaging with the traumatic memory repeatedly will allow you to differentiate between the traumatic event and other events that are similar but not dangerous. For example, now you are afraid of all bald men because you were raped by a bald man. By repeated reliving of the rape you will realize that “baldness” itself is not dangerous. (Foa & Rothbaum, 1998)

After explaining the rationale, the therapist explains the method for prolonged imaginal exposure or reliving of the traumatic experience. The patient is asked to relive the trauma vividly by describing it in the present tense, with eyes closed. Patients are instructed to include in the trauma recounting details of the physical environment, their actions; others’ actions; their thoughts and feelings; and bodily sensations that had occurred during the trauma. Because of the findings that emotional engagement enhances treatment efficacy, the therapist emphasizes the importance of reliving the emotions that were experienced at the time of the trauma. An example of the instructions is as follows:

I’m going to ask you to recall the memories of the assault. It is best for you to close your eyes so you won’t be distracted and so that you can envision these events in your mind’s eye. I will ask you to recall these painful memories as vividly as possible. We call this “reliving.” I don’t want you to tell a story about the assault in the past tense. What I would like you to do is describe the assault in the present tense, as if it were happening now, right here. I’d like you to close your eyes and tell me what happened during the assault in as much detail as you remember.

We will work on this together. If you start to feel too uncomfortable and want to run away or avoid it by leaving the image, I will help you to stay with it. We will audiotape the narrative so you can take the tape home and listen to it for homework. From time to time, while you are reliving the assault, I will ask you for your anxiety level on the 0 to 100 SUDS scale, in which 0 indicates no anxiety or discomfort and 100

indicates panic-level anxiety. Please answer quickly and don’t leave the image. Do you have any questions before we start? The rating should indicate how anxious you are at the time I ask, sitting here in my office, not how you felt during the assault. (Foa & Rothbaum, 1998)

The therapist may probe for more information if the patient does not provide enough detail. The reliving exercise is maintained continuously for 45–60 minutes, without discussion or interruptions, and is tape-recorded. If recounting the entire trauma takes less than the allotted time, the therapist asks the patient to repeat it over again, until the full time is completed. Thus, several repetitions of the trauma may occur in each session. Ideally, reliving should continue until some reduction in anxiety takes place, but it is sometimes necessary to end the exercise without reduction in SUDS. In the first few sessions, reliving should focus on the entire trauma, but in successive sessions, the therapist and patient select the most distressing parts, as indicated by high SUDS levels, as the focus of the reliving. We call these parts “hot spots” and they usually represent the most distressing moments during the trauma. The entire session can be focused on one or two hot spots. Once these hot spots are being processed and habituation occurs, the distress during the remaining parts of the trauma narrative usually diminishes. We advise that towards the end of treatment the entire trauma be relived again so that any newly emerging hot spots can be addressed before therapy is completed.

The patient takes home the audiotape of the reliving exercise, and is instructed to listen to it daily while imagining the trauma as vividly as possible. At the end of each reliving session, the therapist and patient discuss changes in the reliving experience within and between sessions, and the therapist reinforces the patient’s ability to confront such painful information without losing control or going crazy.

6.22.7.3 Indications and Contra-indications

As noted earlier, often in the beginning of exposure treatment, the patient experiences an increase in anxiety owing to the confrontation with trauma reminders. Because of this initial increase in anxiety, patients should be relatively stable prior to the beginning of therapy. Thus, active psychosis, alcohol or drug dependence, or self-injurious behavior should be addressed prior to implementing exposure therapy. In addition, there is some indication that exposure to an event about which the patient feels intense

guilt or shame, rather than fear, is contraindicated, since imaginal exposure in such cases can accentuate guilt and shame (Pitman et al., 1991).

Other factors that require attention may not become apparent until exposure is initiated. These include severe anger, overwhelming anxiety, and emotional numbing (see Jaycox & Foa, 1996; Jaycox, Zoellner, & Foa, 1997).

6.22.7.3.1 Anger

Anger is a natural response to a traumatic event. Often there is an identifiable party that can be blamed for the trauma (e.g., the manufacturer of faulty equipment, the assailant), and anger towards these parties appears to be justified. Even when the blame cannot be clearly ascribed to another, as in some cases of natural disaster, trauma victims often experience a basic sense of injustice (e.g., "Why me?"). Not surprisingly, then, anger is one of the defining symptoms of PTSD.

While some anger is a frequent feature of the PTSD clinical picture, studies suggest that anger may have a role in the formation or maintenance of chronic post-trauma disturbances. For example, Riggs et al. (1992) found that female victims of a recent crime who reported higher anger within two weeks of the assault, also reported higher PTSD symptom scores one month later. The authors hypothesized that intense anger impedes the natural recovery process by interfering with activation of the fear associated with the trauma, thereby obstructing emotional processing.

During treatment, intense anger appears to impede improvement in therapy by hindering emotional engagement. Facial fear expressions during the first reliving of rape memory during therapy predicted improvement following exposure therapy and were inversely related to self-reported anger prior to treatment (Foa, Riggs, Massie, & Yarczower, 1995). Moreover, anger at pretreatment was negatively correlated with improvement. The latter result was replicated in a larger sample (Jaycox, Perry, Freshman, Stafford, & Foa, 1995).

In contrast to severe and constant anger, clinical observations suggest that moderate episodic anger and irritability do not seem to impede improvement in therapy. That is, a certain degree of increase in anger is expected as anxiety increases during the initial stage of therapy, and this anger usually dissipates as arousal decreases. Thus, the therapist is advised to contract with the patients to delay addressing anger-related issues until other emotions such as fear have been processed.

6.22.7.3.2 Emotional Numbing

Numbing of emotions, such as anger, is part of the definition of PTSD. Numbing is usually defined as including several symptoms that constitute part of the avoidance cluster in PTSD: disconnection or detachment from others, blunted emotional responsiveness or expression, and lack of enjoyment in activities (e.g. Foa & Riggs, 1993; Foa, Riggs, & Gershuny, 1995; Litz, 1993). Foa and Riggs noted that the inclusion of numbing with effortful avoidance symptoms reflects the view that these symptoms are motivated and maintained by their capacity to reduce distress. It follows that direct confrontation with feared stimuli will exacerbate numbing in patients who use it as a coping strategy. However, increased numbing would be expected to obstruct emotional processing since it would hinder fear activation, thereby decreasing the effect of treatment. One way to overcome the obstacle presented by numbing during the exposure exercise is to remind the patient of the rationale for reliving. The therapist is also advised to probe for details, thoughts, and feelings during the imaginal exposure.

6.22.7.3.3 Overwhelming anxiety

Although a rare occurrence, patients may become so engaged in the reliving exercise that they experience the traumatic memory as if the trauma is actually reoccurring. Consequently, the patient experiences the same overwhelming anxiety and lack of control as he or she did during the trauma. This flashback usually happens when the patient fails to incorporate into the traumatic memory the information that he or she is in a safe place, that is, in the therapist's office. The therapist can take measures to remind the patient that he or she is remembering the trauma, not re-experiencing it. For example, the therapist can instruct the patient to relive the trauma with eyes open rather than closed, or can insert additional encouraging and reassuring comments during the procedure.

In summary, the therapist should be attentive to these obstacles to exposure therapy, and should modify procedures, when needed, to overcome them (Jaycox & Foa, 1996). In addition to modification of the exposure techniques, the therapist may wish to consider alternative techniques, such as relaxation training to address overwhelming anxiety, or cognitive restructuring to address anger and guilt. These techniques are clearly helpful for trauma victims, as reviewed earlier, and can therefore be used to augment or replace exposure techniques in difficult cases.

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