

An Evaluation of Three Brief Programs for Facilitating Recovery After Assault*

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Ninety female recent assault survivors who met symptom criteria for posttraumatic stress disorder (PTSD) were randomized to one of three interventions: Brief Cognitive Behavioral Intervention, which focused on processing the traumatic event (B-CBT); assessment condition (AC); or supportive counseling (SC). Within 4 weeks of an assault, participants met weekly with a therapist for four 2-hr sessions. Across all interventions, participants reported decreases in PTSD symptoms, depression, and anxiety over time. At postintervention, participants in B-CBT reported greater decreases in self-reported PTSD severity and a trend toward lower anxiety than those in SC. At 3-month follow-up, participants in B-CBT evidenced lower general anxiety than those in SC and a trend toward lower self-reported PTSD severity. At last available follow-up (on average, 9-months postassault), all three interventions were generally similar in outcome. These findings suggest that a trauma-focused intervention aimed at those with severe PTSD symptoms after an assault can accelerate recovery.

Exposure to traumatic events results in long-term chronic disturbances including posttraumatic stress disorder (PTSD; Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), depression (Resick & Schnicke, 1992), and general anxiety (Mayou, Bryant, & Ehlers, 2001). Kessler et al. (1995) found that one third of traumatic-event survivors who met diagnostic criteria for PTSD were unlikely to spon-

taneously remit even after many years. Even prior to the results of large epidemiological studies and before the introduction of PTSD into the *Diagnostic and Statistical Manual of Mental Disorders*, third edition (*DSM-III*; American Psychiatric Association, 1980), an awareness of the potential long-lasting and debilitating effects of trauma had emerged from convenience samples (e.g., Frank, Turner, & Stewart, 1980; Kilpatrick, Veronen, & Resick, 1979).

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This awareness has prompted trauma experts to examine whether providing psychological interventions shortly after traumatic events would facilitate the recovery process.

Accordingly, Kilpatrick and Veronen (1984) conducted a study in which 49 recent rape survivors (6–21 days after the trauma) were assigned to one of three programs: brief behavioral intervention, repeated assessment, or delayed assessment. The behavioral intervention involved 4 to 6 hr of clinical contact in which participants received an affect-induced interview about the rape or relaxation training, education about common reactions to rape, discussion about rape-related guilt and blame, and coping skills such as assertion and thought stopping. The behavioral treatment was standardized, and assessment measures were self-report. Regardless of condition, all participants reported reductions on measures of psychopathology at the 3-month assessment. The authors' interpretation of these findings was that the behavioral treatment did not improve recovery beyond that which occurs during the first 3 months following rape. In another study, Frank et al. (1988) compared early versus delayed systematic desensitization and cognitive therapy to an assessment control condition. Although the treated participants were significantly less symptomatic than the participants in the assessment group, by 3 to 4 months all groups exhibited similar levels of depression and anxiety (Frank et al., 1988). The results of this study are difficult to interpret because participants were not assigned randomly to the three conditions, and those who received early treatment did not achieve improvement greater than that seen in assessment studies (see Kilpatrick & Calhoun, 1988). As evidenced by these studies, the benefit of an early intervention needs to exceed the decrease of symptoms expected by natural recovery processes to be judged as useful.

Since the mid-1980s, two major types of early interventions have been developed and received the most study: The first intervention consists of a one-session intervention aimed at all individuals exposed to a traumatic event (e.g., psychological debriefing, Critical Incident Stress Debriefing), and the second intervention consists of several sessions delivered to individuals at high risk for developing chronic disturbances. Common to the two types of

interventions is the notion that processing the traumatic memory via telling the story enhances recovery, a notion that is imbedded earlier in current theories that underlie cognitive behavioral therapies (CBT) for anxiety disorders, including PTSD (Foa & Rothbaum, 1998).

Debriefing interventions (DeGyregrove, 1989; Mitchell, 1983) have been widely used with a variety of trauma-exposed individuals. Typically, these one-session interventions are delivered shortly after trauma exposure (i.e., usually within 3 days). They consist of discussing psychological reactions to potentially traumatic events (PTEs), encouraging survivors to talk about their related emotions and thoughts (i.e., processing the trauma), and discussing possible follow-up interventions. Several controlled studies have been conducted on psychological debriefing. A Cochrane review (Rose, Bisson, & Wessely, 1998) concluded that there is no current evidence that psychological debriefing is a useful treatment for the prevention of posttrauma symptoms after traumatic incidents. Moreover, at least two controlled studies (i.e., Bisson, Jenkins, Alexander, & Bannister, 1997; Mayou, Ehlers, & Hobbs, 2000) have shown negative effects at long-term follow-up of this type of early intervention. The absence of clear benefit and the possible harm associated with debriefing has generated substantial controversy regarding the routine administration of such interventions shortly after a trauma (e.g., Litz, Gray, Bryant, & Adler, 2002). In another investigation of a one-session intervention, Resnick, Acierno, Holmes, Kilpatrick, and Jager (1999) evaluated a brief videotaped intervention ($n = 13$) in comparison to standard hospital care for rape survivors ($n = 33$). The video was administered prior to a forensic medical exam and was designed to reduce distress during the exam. Although PTSD did not differ between groups at 6 weeks, distress at the time of the medical exam was related to later PTSD symptoms, and the video intervention reduced distress during the exams.

The second set of early interventions aimed at preventing chronic posttrauma disturbances employs cognitive behavioral procedures. CBT interventions differ from psychological debriefing interventions in three important ways: (a) They usually are employed within 2 to 5 weeks

after trauma exposure rather than within a few days, (b) they consist of several sessions rather than one session, and (c) they target individuals who exhibit severe post-trauma reactions rather than targeting PTE survivors in general. However, like debriefing, they include procedures aimed at processing the PTE (i.e., recounting the traumatic event). Three studies to date have examined the efficacy of early CBT programs (Bryant, Harvey, Dang, Sackville, & Basten, 1998; Bryant, Sackville, Dang, Moulds, & Guthrie, 1999; Foa, Hearst-Ikeda, & Perry, 1995). In the first study by Foa et al. (1995), a four-session CBT program, termed Brief Prevention (BP) was compared to a four-session control condition consisting of repeated assessment of posttrauma reactions (AC). Influenced by the notion that processing the traumatic event enhances recovery, the BP program included in vivo exposure to traumatic-event reminders and imaginal exposure to the traumatic memory, as well as cognitive restructuring, psychoeducation, and relaxation. This small study ($N = 20$) utilized a matched-group design. Participants were recent female assault survivors whose posttrauma reactions were severe enough to meet all criteria for PTSD according to the revised edition of the *DSM-III* (*DSM-III-R*; American Psychiatric Association, 1987), with the exception of symptom duration. The results indicated that at postintervention, the BP program was more effective than the AC program at reducing PTSD severity and diagnoses; however, at 5 months' posttrauma these differences disappeared as the participants in AC continued to improve, thus catching up with those in BP. Notably, at 5 months' posttrauma, BP participants reported less depression than did those in AC.

In a second small study, Bryant and colleagues (1998) extended BP to a five-session program and employed it with 24 survivors (12 in each condition) of motor vehicle or industrial accidents who met criteria for acute stress disorder according to criteria of the fourth edition of the *DSM* (*DSM-IV*; American Psychiatric Association, 1994). A comparison of this CBT program with supportive counseling (SC) revealed that the former was more effective than the latter at postintervention on PTSD severity, diagnosis, and anxiety; this superiority was retained at 6-month follow-up. In a subsequent study, Bryant and colleagues

(1999) compared the effects of this five-session program with those of another CBT intervention that included prolonged exposure only (i.e., no anxiety-management skills) and with SC for motor vehicle accident and crime survivors. Again, the sample size was relatively small (i.e., 14–16 per group). The two CBT programs did not differ from one another, and both were superior to SC on PTSD severity, diagnosis, anxiety, and depression posttreatment and at a 6-month follow-up. A 4-year follow-up of the participants in the aforementioned two studies showed that those who received CBT evidenced less severe symptoms of avoidance and less intense overall PTSD symptoms than those who received SC (Bryant, Moulds, & Nixon, 2003).

The present study is a replication and extension of Foa et al.'s (1995) study and was designed to address several of its limitations, including small sample size, lack of randomization, and relatively short follow-up (i.e., 5 months). In addition, this is the largest published study looking at early interventions in a sample of female assault survivors.

As we did in the 1995 study, in the current investigation we compared the effects of BP (renamed brief cognitive behavior therapy, or B-CBT) to an assessment condition (AC) in which PTSD and associated symptoms are repeatedly revisited. One year into this study, we added a third intervention, SC, to provide a control condition in which neither the traumatic experience (as in B-CBT) nor related symptoms (as in AC) are the focus of the intervention. Thus, B-CBT, AC, and SC represent three interventions that vary with respect to their degree of focus on, and processing of, the traumatic event. In B-CBT, the survivor's reactions and symptoms are addressed via psychoeducation, trauma processing (i.e., recounting the traumatic event and approaching reminders), and cognitive restructuring. In AC, symptoms related to the traumatic event are addressed via repeated assessment of the symptoms, but no direct trauma processing (i.e., exposure), is implemented. In SC, symptoms related to the traumatic event are not addressed, and exposure to the traumatic event is not conducted. As in Foa et al. (1995), these conditions were delivered to female recent sexual- and non-sexual assault survivors who met symptom criteria for *DSM-IV* PTSD. We hypothesized that the efficacy of these interventions

would be influenced by the degree of trauma focus. Accordingly, we predicted that (a) B-CBT would be superior to AC in reducing psychopathology related to the traumatic event, and (b) B-CBT would be superior to SC in reducing psychopathology related to the traumatic event.

METHOD

Participants

Participants were 90 female recent survivors of sexual assault ($n = 57$) and nonsexual assault ($n = 33$). All met *DSM-IV* symptom (not duration) criteria for PTSD. Participants were recruited via referrals from emergency rooms, police officers, medical professionals, local victim-assistance agencies, and media advertisements. Eligibility was determined in the initial evaluation conducted by experienced clinicians, including the PTSD Symptom Scale-Interview Version (Foa, Riggs, Dancu, & Rothbaum, 1993). Women who were assaulted by an intimate partner with whom they had an ongoing relationship and those with primary diagnoses of organic mental disorder, schizophrenia, bipolar disorder, or current alcohol/drug dependence were excluded. Individuals abusing substances, who otherwise met all eligibility criteria, were entered into the trial. Individuals who were not eligible or declined participation were given appropriate referrals. Unfortunately, the participation rate could not be calculated because data on nonparticipation was not recorded.

All participants were interviewed at the Center for the Treatment and Study of Anxiety in urban Philadelphia, Pennsylvania. Participants were reimbursed \$50 for the initial interview and self-report questionnaires, \$100 for completion of the postevaluation and self-report questionnaires, and \$50 for each follow-up up to the 1-year follow-up, when they received \$100. Thus, participants who completed all seven assessments (pre, post, 2-, 3-, 6-, 9-, and 12-month follow-up) were compensated \$450.

Participants had a mean age of 33.7 years ($SD = 11.14$). Sixty-three percent (62.7%) were African American, 31.3% Caucasian, 3.6% Hispanic, 1.2% Asian, and 1.2% were of other ethnicity. The average time since

assault to initial assessment was 20.5 days, with a range of 2 to 46 days. Sixty-three percent of the women were single, 15% married or cohabitating, and 22% separated, divorced, or widowed. Thirty-seven percent (36.5%) had a high-school education or less, 43.9% had some technical school or college education, and 4.9% had a college education. Twenty-seven percent (27.2%) reported a total income of over \$30,000 per year, 42.9% between \$10,000 and \$30,000, and 29.9% below \$10,000 per year.

Clinician-Administered Interviews

Structured Clinical Interview for DSM-IV PTSD and acute stress disorder (ASD) module (First, Spitzer, Gibbon, & Williams, 1995). The SCID is a diagnostic interview used to acquire information about *DSM-IV* Axis I disorders and was used to assess exclusion criteria. The module was utilized to assess for the presence of ASD. The SCID has acceptable joint interview interrater reliabilities, with kappas between .70 to .94 (Skre, Onstad, Torgersen, & Kringlen, 1991). In a multisite test-retest reliability study, kappas were .60 or above for current and lifetime in clinical samples (Williams et al., 1992).

PTSD Symptom Scale-Interview (PSS-I; Foa et al., 1993). The PSS-I is a 17-item interview assessing the severity of each of the *DSM-IV* PTSD symptoms during the past 2 weeks and ascertaining PTSD diagnostic status. Each symptom is rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*very much*). In the present study, the PSS-I was the primary measure of PTSD, generating a total PTSD severity score and diagnostic status. Foa, Cashman, Jaycox, and Perry (1997) found high internal consistency ($\alpha = .85$), moderate to high correlations with other measures of psychopathology, high test-retest reliability ($r = .80$), and interrater reliability ($k = .91$).

Standardized Assault Interview (SAI; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). The SAI is a 136-item semistructured interview that gathers information regarding demographic variables, previous victimization history, assault characteristics, and legal-system contact. The SAI

assesses other Criterion A potentially traumatic events, either in adult or childhood, based on the *DSM-IV*. Regarding the index assault-related characteristics, the SAI assesses the time since assault, perception of life threat during the assault, and injury during the assault. An earlier version of this measure reported an interrater reliability of .90 (Rothbaum et al., 1992).

Self-Report Measures

PTSD Symptom Scale-Self-Report (PSS-SR; Foa et al., 1997; Foa et al., 1993). The PSS-SR and the symptom section of its revised version, the Posttraumatic Diagnostic Scale (PDS), consists of 17 questions that correspond to the *DSM-III-R* PTSD symptoms, each rated on a 0- to 3-point scale (0 = *not at all or only one time*, 3 = *five or more times per week/almost always*) for frequency and severity. In the present study, the PSS-SR was a self-report measure of PTSD severity. The scale has been found to be internally consistent ($\alpha = .91$) and stable over a period of 1 month ($r = .74$). Subscales assessing reexperiencing, avoidance, and arousal also are internally consistent and stable. Higher scores on this measure indicate more severe symptoms.

Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a 21-item self-report measure that assesses the severity of depression in adolescents and adults with scores ranging from 0 to 63. Test-retest reliability (.60) and internal consistency (.81) are good.

Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). The BAI is a 21-item inventory measure for trait anxiety with good internal consistency, acceptable reliability, and acceptable convergent and discriminant validity (Fydrich, Dowdall, & Chambless, 1992; Hewitt & Norton, 1993).

Expectancy of Therapeutic Outcome (ETO; Foa, Rothbaum, Riggs, & Murdock, 1991). The ETO is a four-item scale that evaluates the credibility of treatment. Items are rated on an 8-point Likert scale (0 = *not at all*, 8 = *extremely*) and a total range of 4 to 32. Across conditions, this

measure was administered after the intervention rationale had been delivered in the first session.

Usefulness of Techniques Inventory (UTI). This inventory (developed in house) is designed to assess utilization and usefulness of the specific B-CBT treatment techniques clients received. The items are scored on a 5-point Likert scale where 0 = *not at all* and 5 = *more than 10 times*. Each session, clients who received B-CBT rated their utilization and the usefulness techniques assigned for homework each session. The UTI provided a measure of homework compliance.

Independent Evaluations

Interviewers blind to treatment assignment conducted independent evaluations. Evaluations were conducted before and after the intervention, and at 2-, 3-, 6-, 9-, and 12-month follow-ups.

Female evaluators who had either a master's or doctoral degree in psychology and had extensive training in instrument administration conducted these interviews. The pre-intervention interview included the SCID and the PSS-I. After ascertaining eligibility, participants were given a series of self-report measures that they returned at the first intervention session. Postintervention evaluations were conducted within 1 week of intervention completion and included the same self-report measures. Follow-up assessments were conducted using similar interview measures and self-report questionnaires.

Interventions

At the start of the study, participants were randomly assigned to either four sessions weekly of B-CBT or AC; 1 year into the study, the SC condition was added, and randomization was adjusted accordingly to increase the probability of participants being assigned to the SC condition rather than either the AC or the B-CBT condition. Thirty-one participants received B-CBT, 30 the AC, and 29 the SC. Master's- and doctoral-level therapists who received ongoing supervision and followed manuals that specified

guidelines for each session conducted the interventions. Tapes of intervention sessions were reviewed in weekly supervision to ensure adherence. Specifically, supervision focused on ensuring that in the B-CBT condition, exposure was conducted according to protocol, and that in the AC and SC conditions, no systematic exposure occurred in the form of prolonged discussion about the traumatic event. The same clinicians conducted all interventions. Sessions were 2 hr in length. The only intervention that included homework assignments was the B-CBT.

B-CBT. B-CBT consisted of four meetings weekly, 2 hr each, of cognitive-behavioral procedures that have been found effective for alleviating chronic PTSD in assault survivors (Foa et al., 1999; Foa et al., 1991). These included (a) education about the normal reactions to assault, (b) breathing/relaxation training, (c) recounting the assault (imaginal exposure), (d) approaching feared, but safe, situations (in vivo exposure), and (e) cognitive restructuring. The format of each meeting in the B-CBT is described next.

The first meeting was devoted to information gathering, education, and an overview of the program. The clinician evaluated the participant's PTSD symptoms using the PSS-I, presented an overview of the program, and described the agenda of the meeting. The normal reactions to assault were discussed to educate the participant about post-assault reactions and normalizing these reactions. Next, the clinician, with the help of the participant, constructed a list of situations, objects, and people that she had been avoiding since the assault. This information was used during the in vivo hierarchy construction in Meeting 2. Finally, the participant was instructed in slow, regular breathing and in deep muscle relaxation. The deep muscle-relaxation procedure was audiotaped for later practice as a homework exercise.

The second meeting began with a discussion of problems that arose during the past week. Then the following rationale for recounting the memories of the assault was presented.

"It is quite natural to want to avoid painful experiences. However, by avoiding thoughts of the assault or talking about it with people that you trust, you are preventing

yourself from integrating and understanding the assault. Symptoms such as flashbacks, nightmares, and troublesome thoughts continue to occur because a trauma has not been adequately digested. 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, fears or distressing thoughts. These symptoms are signs that the assault is still unfinished business. I'd like to help you put your assault memories into perspective. We will do that by talking about the memories and I will also ask you to relive the assault as if it is happening now. Recovering from a traumatic experience requires organizing these distressing memories so you can move on with your life."

The Subjective Units of Discomfort Scale (SUDS; Jaycox, Foa, & Morral, 1998) was explained to the participant, and construction of the list of phobic situations was completed. The rest of the meeting consisted of 30 to 45 min of prolonged recounting of the memory of the assault including details of the assault, related emotions, and thoughts. The participant was instructed to describe her assault using the present tense, and this narrative was audiotaped. SUDS and imagery vividness ratings were taken every 10 min during the recounting to assess the participant's fear reactions to the assault memories. Suggestions were made by the clinician for the participant to listen to this audiotape and to confront feared, but safe, situations each day.

The third meeting began with a review and discussion of homework completed during that week. Next, there were 45 min of recounting the memories of the assault. The remainder of the session was devoted to cognitive restructuring, starting with a rationale for cognitive restructuring and a description of common cognitive distortions. The clinician helped the participant to identify distorted cognitive assumptions about her coping abilities and dangerousness of the world. Homework suggestions included daily recounting of the assault memories, using the audiotape from the session, approaching feared, safe situations, recording and challenging negative cognitions, and practicing relaxation and calm breathing.

The final meeting began with a review of homework. Recounting the assault memories was conducted for 30 min,

followed by 45 min of cognitive restructuring that included a discussion of thoughts and feelings that were recorded in a daily diary. The clinician reviewed the skills that the participant learned during the program, her progress was discussed, and the schedule of follow-up assessments was reviewed.

AC. The AC consisted of four meetings weekly, 2 hr each, which focused on a thorough assessment of each of the PTSD symptoms using the format of the interview version of the PTSD Symptom Scale (Foa et al., 1993), and post-assault functioning across work, social and leisure activities, and intimate relationships using the format of the Social Adjustment Scale (SAS; Weissman & Paykel, 1974). Each assessment was conducted using the same format, with the exception of Session 1, in which the SAI (Rothbaum et al., 1992) was administered. No detailed discussion of the traumatic event occurred during these meetings, and no homework was assigned. This assessment control was different from previously utilized assessment controls (e.g., Foa et al., 1995) in that it was conducted by PTSD clinicians and not research assistants, was matched in time to active intervention (2 hr each session), and included a discussion of not only current PTSD symptoms but also the impact of the assault on general functioning across a variety of domains (SAS; e.g., work/home, social/leisure functioning, family, partner relationships, child relationships, finances). At the end of each session, participants completed self-report questionnaires (PSS-SR, BDI, BAI).

SC. SC consisted of four meetings weekly, 2 hr each. This intervention consisted of active listening only. Neither discussion of assault-related symptoms nor procedures aimed at promoting processing of the traumatic event were implemented. Accordingly, participants in this condition did not recount the assault, did not discuss common reactions to assaults, were not taught anxiety-management techniques or cognitive restructuring, and were not assigned homework. The intervention was introduced as follows:

“The program you are in is called Supportive Counseling. What this means is that today and for the next three sessions, I am here to listen and talk about whatever is on

your mind. If you want to talk about the trauma, that’s okay, but it’s okay if you don’t want to talk about it also.”

Whenever participants referred to their assault, the clinician listened but did not encourage a detailed description or emotional engagement. Clinicians were nondirective and empathic, conveying an attitude of “unconditional positive regard.” After the first session, the client dictated the content of the session. Therapists were encouraged to respond to their clients with reflection (e.g., “It seems you are saying . . .”), acknowledgment (e.g., “Uh huh”), and clarifying questions.

RESULTS

Preliminary Analyses

Participants in the AC and in the B-CBT and SC conditions did not differ in terms of initial psychopathology or demographic variables. There was a difference in assault type across intervention conditions, $\chi^2(2, N = 90) = 12.00, p < .05$. Seventy-seven percent of individuals in the B-CBT condition and 73% in the AC reported the index trauma as a sexual assault; however, only 38% of women in the SC reported a sexual assault as the index trauma. Because the rate of recovery is slower for sexual than for nonsexual assault (Rothbaum et al., 1992), this significantly higher proportion of nonsexual assault in the SC condition could bias the results in favor of this condition. Therefore, we controlled for assault type in subsequent analyses as a covariate (0 = *nonsexual assault*, 1 = *sexual assault*). No pre-intervention differences in psychopathology were detected across assault type. Further, B-CBT ($M = 26.41, SD = 5.55$), AC ($M = 25.00, SD = 4.31$), and SC conditions ($M = 26.16, SD = 5.50$) did not differ in terms of preprogram expectancy of outcome, $F(2, 58) = 0.42, ns$.

Twenty-four participants (26.7%) dropped out of the intervention, leaving 66 completers. Dropouts were distributed as follows: 9 (29%) in the B-CBT condition, 10 (33.3%) in the AC, and 5 (17.2%) in the SC condition. The dropout rate did not differ across conditions, $\chi^2(2, N = 90) = 2.09, ns$. No significant differences between

completers and dropouts emerged on pre-intervention psychopathology and demographic variables. Therefore, given our primary interest in testing the efficacy of a brief, four-session intervention, only data for completers will be presented here. All analyses also were conducted using the last observation carried forward method (LOCF), with pre-intervention scores for dropouts included in all analyses. Accordingly, in LOCF analyses, for missing data due to dropout, the last observation for that participant was used as their data for all subsequent analyses. Missing data for the completer analyses were counted as missing and not imputed in any way. The overall pattern of results did not substantially differ between the completer and LOCF analyses. Differences between completer and LOCF analyses are explicitly noted later. Accordingly, unless otherwise noted, the pattern of significance did not differ between completer and LOCF analyses.

Means and standard deviations are provided in Table 1 for the main dependent measures. Greenhouse-Geiser correction to degrees of freedom for violation of homogeneity of variance did not change the results; therefore, uncorrected results are presented.

Short-Term Effects of CBT

Because we had specific, directional hypotheses regarding the relative efficacy of the three interventions (B-CBT > AC; B-CBT > SC), we conducted planned comparisons to test these hypotheses (Keppel, 1991; Maxwell & Delaney, 2004): (a) B-CBT versus AC, and (b) B-CBT versus SC on postmeasures of psychopathology, controlling for initial levels of psychopathology and assault type (0 = *nonsexual assault*, 1 = *sexual assault*).

CBT versus AC. The AC and the B-CBT condition did not differ on postintervention measures of PTSD severity (PSS-I, PSS-SR), depression (BDI), and anxiety (BAI) nor did they differ on postintervention PTSD diagnosis. Overall, 54.5% of the B-CBT and 45% of the AC no longer met diagnostic criteria for PTSD. The AC and the B-CBT condition did not differ on these postintervention indices for either sexual- or non-sexual-assault survivors.

CBT versus SC. Similarly, a series of planned comparisons were conducted between the B-CBT and SC conditions

Table 1. Mean Psychopathology by Intervention Program and Assessment Point (Completers)

Condition	Pre			Post			3 Months			Last Follow-Up		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Interviewer-rated PTSD Severity (PSS-I)												
B-CBT	31	34.03	7.86	22	16.64	11.42	21	15.62	12.98	22	13.23	13.22
AC	30	33.17	6.48	20	16.05	11.33	19	15.00	10.76	20	12.25	10.52
SC	29	35.07	7.63	23	20.70	12.99	21	18.71	14.07	24	11.88	11.80
Self-Reported PTSD Severity (PSS-SR)												
B-CBT	29	32.28	8.73	21	13.96	12.07	19	12.21	11.93	22	11.56	12.27
AC	30	31.30	8.20	20	12.35	11.32	19	14.07	9.24	20	12.10	10.29
SC	29	31.08	10.65	23	20.13	13.92	19	16.74	13.67	24	13.75	12.21
Depression (BDI)												
B-CBT	29	18.55	9.07	21	8.37	9.31	19	8.47	10.09	22	8.09	8.50
AC	30	20.61	8.82	20	7.50	7.19	19	8.34	7.93	20	6.35	7.71
SC	29	18.84	9.64	23	11.43	12.15	19	9.00	8.06	24	8.83	9.59
Anxiety (BAI)												
B-CBT	29	25.62	10.86	20	7.80	11.38	19	7.35	9.06	22	5.88	7.02
AC	30	21.70	10.31	20	7.16	10.49	19	7.74	8.88	20	7.01	8.74
SC	29	22.50	12.53	23	12.77	12.65	19	13.38	12.34	23	10.87	14.73

Note. PSS-I = Posttraumatic Stress Disorder Symptom Scale-Interview; PSS-SR = Posttraumatic Stress Disorder Symptom Scale-Self-Report; B-CBT = Brief Cognitive Behavioral Therapies; AC = Assessment Condition; SC = Supportive Counseling; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory.

on postmeasures of psychopathology, controlling for initial levels of psychopathology and assault type. At postintervention, participants in the B-CBT condition reported lower scores than did participants in the SC condition on self-reported PTSD severity, B-CBT: adjusted $M = 13.13$, $SE = 2.08$; SC: adjusted $M = 21.13$, $SE = 2.08$, $F(1, 42) = 7.21$, $p < .05$, partial $\eta^2 = .16$, and evidenced a trend toward lower general anxiety symptoms, B-CBT: adjusted $M = 6.94$, $SE = 2.30$; SC: adjusted $M = 13.56$, $SE = 2.30$, $F(1, 41) = 3.52$, $p = .068$. Participants in the B-CBT and SC conditions did not differ on postintervention measures of interviewer-rated PTSD severity (PSS-I) or depression (BDI) nor did they differ on postintervention PTSD diagnosis. Overall, 54.5% of the B-CBT and 47.8% of the SC condition no longer met diagnostic criteria for PTSD. B-CBT and SC conditions did not differ in outcome for either sexual- or non-sexual-assault survivors.

Good end-state functioning. Good end-state functioning was defined as being at or below a specific score on the three main outcome measures (i.e., PSS-I, BDI, BAI). For the PSS-I, a cutoff of 20 was used as suggested in the manual for the self-report version of the PSS-I (Foa et al., 1993). The commonly used cutoff of 10 was adopted for the BDI and the BAI (Beck et al., 1988; Kendall, Hollon, Beck, Hammen, & Fagram, 1987). Using this criteria for completers, 65% of the B-CBT condition, 45% of the AC, and 34.8% of the SC condition achieved good end-state functioning. Planned comparisons revealed that the AC and the B-CBT condition did not reliably differ. In contrast, when comparing B-CBT and SC conditions, for the sexual-assault-survivor level of the chi-square, a greater proportion of women in the B-CBT condition achieved good end-state functioning (71.4%) than did women in the SC condition (25%), $\chi^2(1, N = 22) = 4.43$, $p < .05$; however, this difference did not approach significance using last observation carried forward analyses, $\chi^2(1, N = 35) = 2.47$, *ns*. For the non-sexual-assault survivor level of the chi-square, there was no difference in good end-state functioning between B-CBT and SC conditions, $\chi^2(1, N = 21) = .18$, *ns*.

Clinically significant change. To further investigate symptom change, we computed recovery cut scores based on Jacobson and colleagues (Jacobson, Foa, & Morral, 1991; Jacobson, Follette, & Revenstorf, 1984; Jacobson & Truax, 1988), indicating the likelihood of an individual moving from a dysfunctional to a functional distribution. Given that base rates of recovery shift with both time and assault type, we utilized Doctor's (1999) suggested adjustments to this calculation. To calculate clinically significant change, means and standard deviations on the PSS-SR for PTSD and non-PTSD samples were taken from Foa et al. (1997). In addition, we utilized data from Rothbaum et al. (1992) for base rates of PTSD diagnosis across assault type (sexual vs. nonsexual) and over time (2 months, 3 months, and last available follow-up).

For completers at posttreatment, 85.7% of the B-CBT condition, 90% of the AC, and 69.6% of the SC condition met criteria for clinically significant improvement. Planned comparisons did not reveal significant differences among conditions.

Three-Month Follow-Up Effects of CBT

To evaluate outcome at the 3-month chronic marker for PTSD according to the *DSM-IV*, planned comparisons were conducted for the AC versus the B-CBT condition and B-CBT versus SC conditions on 3-month follow-up measures of psychopathology, again controlling for initial levels of psychopathology and assault type.

CBT versus AC. The AC and the B-CBT condition did not differ on any measure of psychopathology (PSS-I, PSS-SR, BDI, BAI) nor did they differ on number of participants who met criteria for chronic PTSD. Overall, 61.9% of the B-CBT condition and 47.4% of the AC no longer met diagnostic criteria for PTSD at 3-month follow-up. The AC and the B-CBT condition did not differ for either sexual- or non-sexual-assault survivors.

CBT versus SC. At 3 months, participants in the B-CBT condition evidenced a trend toward lower scores than did participants in the SC condition on self-reported PTSD

severity, B-CBT: adjusted $M = 10.91$, $SE = 2.49$; SC: adjusted $M = 18.40$, $SE = 2.49$, $F(1, 37) = 3.78$, $p = .06$, and significantly lower general anxiety symptoms, B-CBT: adjusted $M = 5.53$, $SE = 2.22$; SC: adjusted $M = 15.19$, $SE = 2.22$, $F(1, 37) = 8.78$, $p < .05$, partial $\eta^2 = .21$. However, unlike the completer analysis, using last observation carried forward analyses, the effect for BAI was no longer significant, $F(1, 54) = 1.67$, $p = .20$, partial $\eta^2 = .03$. Participants in the B-CBT and SC conditions did not differ on 3-month follow-up measures of interviewer-rated PTSD severity (PSS-I) and depression (BDI) nor did they differ on number of participants who met criteria for chronic PTSD. Overall, 61.9% of the B-CBT and 57.1% of the SC condition no longer met diagnostic criteria for PTSD at 3-month follow-up. B-CBT and SC conditions did not differ for either sexual- or non-sexual-assault survivors.

Good end-state functioning. For completers of the intervention, 57.9% of the B-CBT condition, 52.6% of the AC, and 47.8% of the SC condition achieved good end-state functioning at 3 months. Planned comparisons revealed that AC and B-CBT conditions and B-CBT and SC conditions did not reliably differ.

Clinically significant change. For completers, 94.7% of the B-CBT condition, 89.5% of the AC, and 78.9% of the SC condition met clinically significant change criteria at 3 months. Similar to postintervention, planned comparisons did not reveal any differences among conditions.

Long-Term Follow-Up Effects of CBT

Last available follow-up data were used to evaluate the long-term effects of B-CBT. On average, last available follow-up data were collected at 9.48 months' post-assault ($SD = 3.86$). There was no difference across B-CBT, AC, and SC conditions in duration of follow-up.

CBT versus AC. Planned comparisons were conducted comparing the AC and the B-CBT condition on last available follow-up measures of psychopathology, controlling

for initial levels of psychopathology and assault type. At last available follow-up, the AC and the B-CBT condition did not differ significantly on measures of PTSD severity (PSS-I, PSS-SR), depression (BDI), and anxiety (BAI) nor did they differ on PTSD diagnosis. Overall, 68.2% of the B-CBT condition and 70% of the AC no longer met diagnostic criteria for PTSD at last available follow-up. The AC and the B-CBT condition did not differ for either sexual- or non-sexual-assault survivors.

CBT versus SC. Planned comparisons were conducted comparing the B-CBT and SC conditions on last available follow-up measures of psychopathology, controlling for initial levels of psychopathology and assault type. At last available follow-up, participants in the B-CBT condition evidenced a trend toward lower general anxiety symptoms than those in the SC condition, B-CBT: adjusted $M = 4.92$, $SE = 2.33$; SC: adjusted $M = 11.88$, $SE = 2.45$, $F(1, 43) = 3.85$, *ns*. Participants in the B-CBT and SC conditions did not differ significantly on other measures of PTSD severity (PSS-I, PSS-SR) and depression (BDI) nor did they differ on PTSD diagnosis. Overall, 68.2% of the B-CBT and 70.8% of the SC conditions no longer met diagnostic criteria for PTSD at last available follow-up. B-CBT and SC conditions did not differ for either sexual- or non-sexual-assault survivors.

Good end-state functioning. At last available follow-up, among completers of the intervention programs, 54.5% of the B-CBT condition, 65% of the AC, and 60.9% of the SC condition achieved good end-state functioning. Planned comparisons revealed that the AC and the B-CBT condition did not reliably differ nor did B-CBT and SC conditions.

Clinically significant change. Among completers, 90.9% of the B-CBT condition, 85% of the AC, and 87.5% of the SC condition met clinically significant change criteria. Similar to postintervention and 3-month follow-up, planned comparisons did not reveal any significant differences among conditions at last available follow-up.

Table 2. Planned Comparisons (Completers)

Planned Comparison	Post			3 Months			Last Follow-Up		
	<i>F</i>	<i>df</i>	Effect Size (partial η^2)	<i>F</i>	<i>df</i>	Effect Size (partial η^2)	<i>F</i>	<i>df</i>	Effect Size (partial η^2)
Interviewer-rated PTSD Severity (PSS-I)									
B-CBT vs. AC	0.06	1,41	.00	0.04	1,39	.00	0.01	1,41	.00
B-CBT vs. SC	0.33	1,44	.01	0.24	1,41	.01	1.53	1,45	.04
Self-Reported PTSD Severity (PSS-SR)									
B-CBT vs. AC	0.01	1,39	.00	1.47	1,37	.04	0.19	1,40	.01
B-CBT vs. SC	7.21*	1,42	.16	3.78	1,37	.10	0.48	1,44	.01
Depression (BDI)									
B-CBT vs. AC	0.55	1,39	.02	0.00	1,37	.00	1.01	1,40	.03
B-CBT vs. SC	0.36	1,42	.01	0.00	1,37	.00	0.00	1,44	.00
Anxiety (BAI)									
B-CBT vs. AC	0.38	1,37	.01	0.02	1,36	.00	0.63	1,39	.02
B-CBT vs. SC	3.52	1,41	.09	8.78*	1,37	.21	3.85	1,43	.09

Note. PSS-I = Posttraumatic Stress Disorder Symptom Scale-Interview; PSS-SR = Posttraumatic Stress Disorder Symptom Scale-Self-Report; B-CBT = Brief cognitive Behavioral Therapies; AC = Assessment Condition; SC = Supportive Counseling; BDI = Beck Depression Inventory; BAI = Beck Anxiety Inventory. * $p < .05$

Post Hoc Analyses: Comparison of Those With and Without Initial ASD Diagnosis

Overall, 52.2% of the participants met *DSM-IV* diagnostic criteria for ASD based on the initial SCID-IV interview, with 64.5% of those in the B-CBT condition, 50.0% in the AC, and 41.4% of those in the SC condition. At postintervention, individuals with initial ASD did not differ from those without ASD on interviewer-rated PTSD severity, $F(1, 64) < 1$, *ns*, self-reported PTSD severity, $F(1, 62) < 1$, *ns*, depression, $F(1, 62) = 1.53$, *ns*, or anxiety, $F(1, 60) < 1$, *ns*. Further, there were no ASD Diagnosis \times Condition interactions. This pattern of findings held across all main measures at 3-month follow-up and last available follow-up as well. Thus, ASD diagnosis was not related to outcome.

DISCUSSION

In the present study, three brief interventions were compared with respect to their efficacy in facilitating natural recovery. We hypothesized that the B-CBT, which included procedures aimed at promoting traumatic-event processing (e.g., imaginal and in vivo exposure), would yield supe-

rior outcome to the AC, which consisted of clinician-administered and self-report measures of assault-related symptoms; and the SC condition, which focused on providing general support and empathy and did not address the traumatic event or related symptoms. The results did not support the first hypothesis. B-CBT and AC did not differ on any symptom measures at any assessment point. Partial support was obtained for the second hypothesis at posttreatment and the 3-month follow-up. At postintervention, B-CBT showed significantly more reduction in self-reported PTSD than did SC, and a trend in the same direction was observed for general anxiety. At 3 months' post-assault, a similar pattern remained. Notably, the latter finding regarding general anxiety is consistent with Foa et al. (1999), where prolonged exposure (on which the B-CBT condition was based) was more effective in reducing general anxiety than stress inoculation training in a sample of women with chronic PTSD. At postintervention, B-CBT also yielded higher rates of sexual-assault survivors who recovered from PTSD and no longer displayed elevated levels of depression and anxiety (good end-state functioning) than did SC. Thus, the B-CBT invention appears particularly effective for female sexual-assault survivors, who typically experience a more severe and chronic

post-assault reaction than do non-sexual assault survivors (Rothbaum et al., 1992). This superiority disappeared at follow-up. Interestingly, these differences were achieved despite comparable expectancy for improvement across interventions.

Our results are partially consistent with three previous studies showing that an early, four- to five-session CBT intervention can facilitate recovery following trauma (Bryant et al., 1998; Bryant et al., 1999; Foa et al., 1995). Our results are not consistent with those of Foa et al. (1995), in that the present study failed to detect superiority of B-CBT over AC on any measure at any assessment point. These differences may be explained in three important ways. First, unlike the present study, the Foa et al. (1995) study was not a randomized controlled trial. Second, the AC in the Foa et al. (1995) study was not conducted within the context of an intervention study (initially, AC was part of a prospective assessment study) and was not presented to the participants as an active intervention. In contrast, in the present study, we deliberately strove for and succeeded in equating expectancy for improvement by presenting AC as an active intervention. Moreover, in the present study, AC was delivered by the same experienced clinicians who delivered B-CBT whereas in the previous study, experienced clinicians delivered CBT and research assistants delivered AC. Third, based on discomfort expressed by some CBT participants in the previous study with being perceived as “patients” who needed treatment, we relaxed homework requirements, instead giving homework “suggestions” and “recommendations.” This shift may have reduced the efficacy of the B-CBT intervention, as evidenced by differences in effect sizes between the two studies. Indeed, in this study, homework compliance was strongly associated with better outcome: For both imaginal exposure ($r = -.64, p < .05$) and in vivo exposure ($r = -.75, p < .05$), homework completion was associated with lack of PTSD diagnosis at postintervention.

Our results are partially consistent with those reported by Bryant and colleagues (Bryant et al., 1998; Bryant et al., 1999). In all three studies, the CBT program yielded superior results to SC; however, in the previous two studies, the superiority of CBT continued through 6-month follow-up

whereas in the present study no differences among the three conditions were found after the 3-month assessment. This is because in the two studies by Bryant and colleagues (Bryant et al., 1998; Bryant et al., 1999), participants who received SC showed little or no symptom reduction following the intervention whereas consistent with the rates of natural recovery, participants who received SC in the present study continued to improve over time. Immediately after the intervention, 47.8% of them no longer met criteria for PTSD, at 3-month follow-up, 57.1% were diagnosis free, and at last available follow-up (on average, 9.48 months' posttreatment), 70.8% no longer met criteria for PTSD. In contrast, Bryant and colleagues (1998, 1999) found that at 6-month follow-up, only 33% of SC participants did not have PTSD, a rate lower than would be expected from natural recovery alone.

Divergence in several study characteristics may explain this difference. First, the majority of our participants were low-income, African American survivors of sexual assault, living in inner city Philadelphia. While Bryant and colleagues (Bryant et al., 1998; Bryant et al., 1999) did not provide information about the race and socioeconomic status of their participants, none of the participants in either study were rape survivors. Second, all participants in the Bryant and colleagues (Bryant et al., 1998; Bryant et al., 1999) studies met full or partial criteria for ASD, which has been associated with hindered natural recovery (Bryant & Harvey, 1998; Harvey & Bryant, 1998). In the current study, all participants met symptom criteria for PTSD, but only 52% met ASD diagnosis; however, the explanation that differences in ASD prevalence may account for the different findings is inconsistent with our finding that ASD diagnosis was not related to worse outcome. A third difference between the current study and the Bryant and colleagues' studies (Bryant et al., 1998; Bryant et al., 1999) is the emphasis on compliance with homework assignments. As we mentioned earlier, we relaxed homework requirements such that homework was presented in the form of “suggestions” or “recommendations” rather than firm instructions. The emphasis on the necessity of homework compliance was greater in the Bryant and

colleagues studies (Richard Bryant, July 18, 2001, personal communication). This reduced emphasis on the importance of homework compliance may have reduced the efficacy of B-CBT. Indeed, as noted earlier, homework compliance was highly related to B-CBT efficacy in the present study.

It is crucial to consider how rates of recovery following early interventions compared to rates of natural recovery. Indeed, it would be hard to justify the delivery of an intervention that fails to “beat” natural recovery either in terms of acceleration of recovery or severity of traumatic-event-related symptoms. To address this question, we compared the prevalence of PTSD diagnosis found in a prospective study of recent sexual-assault survivors (Rothbaum et al., 1992) to the rates in the current study. In the Rothbaum et al. (1992) study, of the women who had PTSD at 19 days’ postsexual assault, 67% retained the diagnosis 5 weeks later. In the current study, on average, women entered the study at 21 days’ postsexual assault, and all had PTSD; 43.8% of them retained the diagnosis 5 weeks later (i.e., 4 weeks of sessions with postassessment on average 1 week after last session), across the AC and the B-CBT condition. The differential rate of decline across these time points (33% in Rothbaum et al., 1992, study; 56.2% in current study) suggests that early interventions may accelerate natural recovery of sexual-assault survivors who exhibit severe PTSD symptoms weeks after the assault. Indeed, our clinical significant change analyses accounted for shifting natural-recovery base rates over time and found that the majority of all participants in the study made clinical significant changes. Thus, while all three interventions were comparable in the long run, B-CBT was more effective than was SC in reducing self-reported PTSD symptoms and general anxiety at least up to 3 months after the assault. Although these differences disappeared in later assessments, faster recovery may be very meaningful for those who suffer severe initial PTSD symptoms.

LIMITATIONS

First, our sample was limited to female assault survivors, and the generalizability to those who experienced other

types of PTEs is unknown. Second, the design of this study as well as Bryant and colleagues’ (Bryant et al., 1998; Bryant et al., 1999) studies do not allow for a direct comparison to rates of natural recovery. Future early (i.e., within the first month following the trauma) intervention studies should include a waitlist control condition to provide this important comparison. In addition, traumatized individuals may differ in the degree to which they expose themselves to traumatic-event reminders in the course of their daily lives, and these exposures are likely to facilitate natural recovery in the same way that deliberate exposure does in the context of an intervention. Furthermore, therapist-directed assessments may similarly draw attention to and facilitate natural exposure (Ehlers et al., 2003). While deliberate exposure was conducted only in the B-CBT condition, natural exposure may have obscured differences between groups in the present study. Future studies should assess the amount of natural exposure occurring both during the interventions and over the course of follow-up, and examine its relationship with reduction in PTSD severity and related symptoms.

Third, the SC condition was added 1 year into the 6-year study, and although unlikely, this could have biased our results. Fourth, the current study was powered only to detect moderate to large effects. Although we were mostly concerned with detecting clinically meaningful differences among conditions, small to medium effects may have important clinical implications that we were unable to detect given our sample size. For example, the observed trend toward lower general anxiety in the B-CBT condition at long-term follow-up may have important clinical implications such as decreasing the likelihood of future relapse. Finally, we did not collect systematic information about how many people were excluded from the study or the reasons why. This information would have been beneficial in better understanding the broader effectiveness of this intervention. Despite these limitations, the present study contributes uniquely to our knowledge about the usefulness of early interventions because it is the largest randomized controlled trial (RCT) published to date on the efficacy of B-CBT delivered shortly after a trauma.

REFERENCES

- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., Rev.). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*, 893–897.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561–571.
- Bisson, J. I., Jenkins, P. L., Alexander, J., & Bannister, C. (1997). Randomized controlled trial of psychological debriefing for victims of acute burn trauma. *British Journal of Psychiatry, 171*, 78–81.
- Breslau, N., Davis, G., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry, 48*, 218–228.
- Bryant, R. A., & Harvey, A. G. (1998). Relationship between acute stress disorder and posttraumatic stress disorder following mild traumatic brain injury. *American Journal of Psychiatry, 155*, 625–629.
- Bryant, R. A., Harvey, A. G., Dang, S. T., Sackville, T., & Basten, C. (1998). Treatment of acute stress disorder: A comparison of cognitive-behavioral therapy and supportive counseling. *Journal of Consulting and Clinical Psychology, 66*, 862–866.
- Bryant, R. A., Moulds, M. L., & Nixon, R. V. D. (2003). Cognitive behaviour therapy of acute stress disorder: A four-year follow-up. *Behavior Research & Therapy, 41*, 489–494.
- Bryant, R. A., Sackville, R., Dang, S. T., Moulds, M., & Guthrie, R. (1999). Treating acute stress disorder: An evaluation of cognitive behavior therapy and supportive counseling techniques. *American Journal of Psychiatry, 156*, 1780–1786.
- DeGyregrove, A. (1989). Caring for helpers in disaster situations: Psychological debriefing. *Disaster Management, 2*, 25–30.
- Doctor, J. N. (1999). Recovery after treatment and sensitivity to base rate. *Journal of Consulting and Clinical Psychology, 67*, 219–227.
- Ehlers, A., Clark, D. M., Hackmann, A., McManus, F., Fennell, M., Herbert, C., et al. (2003). A randomized control trial of cognitive therapy, a self-help booklet, and repeated assessments as early interventions for posttraumatic stress disorder. *Archives of General Psychiatry, 60*, 1024–1032.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. (1995). *Structured clinical interview for DSM-IV Axis I disorders-Patient edition (SCID-I/P, Version 2)*. New York: New York State Psychiatric Institute Biometrics Research Department.
- Foa, E. B., Cashman, L., Jaycox, L., & Perry, K. (1997). The validation of a self-report measure of PTSD: The Posttraumatic Diagnostic Scale. *Psychological Assessment, 9*, 445–451.
- Foa, E. B., Dancu, C. V., Hembree, E. A., Jaycox, L. H., Meadows, E. A., & Street, G. P. (1999). A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal of Consulting and Clinical Psychology, 67*, 194–200.
- Foa, E. B., Hearst-Ikeda, D., & Perry, K. (1995). Evaluation of a brief cognitive-behavioral program for the prevention of chronic PTSD in recent assault victims. *Journal of Consulting and Clinical Psychology, 63*, 948–955.
- Foa, E. B., Riggs, D. S., Dancu, C. V., & Rothbaum, B. O. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress, 6*, 459–473.
- Foa, E. B., & Rothbaum, B. O. (1998). *Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. New York: Guilford Press.
- Foa, E. B., Rothbaum, B. O., Riggs, D., & Murdock, T. (1991). Treatment of post-traumatic stress disorder in rape victims: A comparison between cognitive-behavioral procedures and counseling. *Journal of Consulting and Clinical Psychology, 59*, 715–723.
- Frank, E., Anderson, B., Stewart, B. D., Dancu, C., Hughes, C., & West, D. (1988). Efficacy of cognitive behavior therapy and systematic desensitization in the treatment of rape trauma. *Behavior Therapy, 19*, 403–420.
- Frank, E., Turner, S., & Stewart, B. D. (1980). Initial response to rape: The impact of factors within the rape situation. *Journal of Behavioral Assessment, 2*, 39–53.
- Fydrich, T., Dowdall, D., & Chambless, D. L. (1992). Reliability and validity of the Beck Anxiety Inventory. *Journal of Anxiety Disorders, 6*, 55–61.
- Harvey, A. G., & Bryant, R. A. (1998). The relationship between acute stress disorder and posttraumatic stress disorder: A prospective evaluation of motor vehicle accident survivors. *Journal of Consulting and Clinical Psychology, 66*, 507–512.

- Hewitt, P. L., & Norton, R. (1993). The Beck Anxiety Inventory: A psychometric analysis. *Psychological Assessment*, 5, 408–412.
- Jacobson, N. S., Follette, W. C., & Revenstorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy*, 15, 336–352.
- Jacobson, N. S., & Revenstorf, D. (1988). Statistics for assessing the clinical significance of psychotherapy techniques: Issues, problems, and new developments. *Behavioral Assessment*, 10, 133–145.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, 59, 12–19.
- Jaycox, L. H., Foa, E. B., & Morral, A. R. (1998). Influence of emotional engagement and habituation on exposure therapy for PTSD. *Journal of Consulting and Clinical Psychology*, 66, 185–192.
- Kendall, P. C., Hollon, S. D., Beck, A. T., Hammen, C. L., & Fagaram, R. E. (1987). Issues and recommendations regarding the use of the Beck Depression Inventory. *Cognitive Therapy and Research*, 11, 289–299.
- Keppel, G. (1991). *Design and analysis: A researcher's handbook* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall.
- Kessler, R., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048–1060.
- Kilpatrick, D. G., & Calhoun, K. S. (1988). Early behavioral treatment for rape trauma: Efficacy or artifact? *Behavior Therapy*, 19, 421–427.
- Kilpatrick, D. G., & Veronen, L. J. (1984). Treatment for rape-related problems: Crisis intervention is not enough. In L. Cohen, W. Claiborn, & G. Specter (Eds.), *Crisis intervention* (2nd ed.): Community–clinical psychology series. New York: Human Services Press.
- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1979). The aftermath of rape: Recent empirical findings. *American Journal of Orthopsychiatry*, 49, 658–669.
- Litz, B. T., Gray, M. J., Bryant, R. A., & Adler, A. B. (2002). Early intervention for trauma: Current status and future directions. *Clinical Psychology—Science & Practice*, 9, 112–134.
- Maxwell, S. E., & Delaney, H. D. (2004). *Designing experiments and analyzing data: A model comparison perspective* (2nd ed.). Mahwah, NJ: Erlbaum.
- Mayou, R., Bryant, R., & Ehlers, A. (2001). Prediction of psychological outcomes one year after a motor vehicle accident. *American Journal of Psychiatry*, 158, 1231–1238.
- Mayou, A., Ehlers, A., & Hobbs, M. (2000). Psychological debriefing for road traffic accident victims: Three year follow-up of a randomized controlled trial. *British Journal of Psychiatry*, 176, 589–593.
- Mitchell, J. T. (1983). When disaster strikes. The critical incident stress debriefing process. *Journal of Emergency Medical Service*, 8, 36–39.
- Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology*, 60, 748–756.
- Resnick, H., Acierno, R., Holmes, M., Kilpatrick, D. G., & Jager, N. (1999). Prevention of post-rape psychopathology: Preliminary findings of a controlled acute rape treatment study. *Journal of Anxiety Disorders*, 13, 359–370.
- Rose, S., Bisson, J., & Wessely, S. (1998). Psychological debriefing for preventing posttraumatic stress disorder (PTSD). *Cochrane Library*, Issue 2. Abstract retrieved March 16, 2005, from <http://www.cochrane.org/cochrane/revabstr/AB000560.htm>
- Rothbaum, B. O., Foa, E. B., Riggs, D. S., Murdock, T., & Walsh, W. (1992). A prospective examination of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress*, 5, 455–475.
- Skre, I., Onstad, S., Torgersen, S., & Kringlen, E. (1991). High interrater reliability for the Structured Clinical Interview for DSM-III-R Axis I (SCID-I). *Acta Psychiatrica Scandinavica*, 84, 167–173.
- Weissman, M. M., & Paykel, E. S. (1974). *The depressed woman: A study of social relationships*. Chicago: University of Chicago Press.
- Williams, J. B., Gibbon, M., First, M. B., Spitzer, R. L., Davis, M., Bofus, J., et al. (1992). The Structured Clinical Interview for DSM-III-R (SCID): II. Multisite test-retest reliability. *Archives of General Psychiatry*, 49, 630–636.

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