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PTSD, there is a need for validated screening instruments that can be used with individuals recently exposed to trauma, so that those who will subsequently develop chronic PTSD can be identified; prospective longitudinal studies are warranted to develop these instruments.

Another indicator relevant to early identification of people who will develop chronic PTSD is depression. In one study, survivors who had major depression in addition to PTSD at 1 month after the event showed greater decreases in their ability to function at work and with friends and family and had a greater chance of having PTSD at 4 months than did those who had PTSD without depression (e.g., Shalev, Freedman, et al., 1998).

The ways people try to cope with trauma are also relevant. One possible indicator of need for early treatment is rumination (e.g., going over and over in one's mind questions like "Why did the trauma happen to me?" "How could I have prevented this from happening?" "What if I had done X?" and "What would my life be like if this had never happened?"). Taking rumination into consideration, in addition to severity of initial symptoms, improves predictions of who will get chronic PTSD (Ehlers et al., 1998; Murray et al., 2002). Similarly, excessive precautions, such as sleeping only with a knife near one's bed and with the lights on (Dunmore et al., 2001), and excessive avoidance, such as not leaving one's house (Bryant & Harvey, 1998), are associated with risk for persistent PTSD.

The way trauma survivors interpret the initial posttrauma symptoms, such as reexperiencing, numbness, and irritability, predicts the persistence of symptoms independently of symptom severity (Dunmore et al., 2001; Ehlers et al., 1998). Survivors who interpret these symptoms as signs that they might be going crazy, about to lose control, or permanently changed for the worse are at greater risk for chronic symptoms and in greater need of treatment than are those who interpret their symptoms as a normal part of recovery. Sadly, many trauma survivors endure long-lasting physical consequences, such as chronic pain, visible scars, or loss of limbs. These survivors have a greater chance of having chronic PTSD and thus a greater need for help than those who are unhurt or who recover well from their physical injuries (Blanchard et al., 1997; Ehlers et al., 1998).

Thus, although research has not confirmed optimal criteria for establishing an individual's need for early treatment, the results from prospective longitudinal studies have suggested indicators that may aid detection of individuals unlikely to recover without treatment. Future research may show that a particular combination of measures is better in predicting low chance of recovery than is symptom severity alone. For example, Halligan, Michael, Ehlers, and Clark (2003) conducted a prospective longitudinal study of assault survivors and found that a combination of assault severity and cognitive measures predicted 71% of the variance of PTSD symptom severity at 6 months after the trauma, whereas initial symptom severity predicted 55% of the variance. From a practical point of view, the severity of the early posttrauma symptoms from about 1 to 2 weeks after the trauma onward is currently the most straightforward indicator of need for treatment. (Note that this assumes that the trauma survivor is safe when the symptoms are assessed).

EARLY TREATMENT OF SURVIVORS WITH CLINICAL SYMPTOMS OF POSTTRAUMATIC STRESS

CBT Starting in the First Month After Trauma

Unlike debriefing, psychological treatments for PTSD symptoms in the initial weeks and months after trauma were mainly adapted from CBT programs for PTSD (e.g., Foa & Meadows, 1997; Foa & Rothbaum, 1998). Much as in the case of psychological debriefing, early attempts to apply CBT techniques in the first few weeks following rape failed to demonstrate efficacy (Frank et al., 1988; Veronen & Kilpatrick, 1983). Although the patients receiving CBT showed substantial improvement in psychological symptoms, the studies did not establish that these changes were greater than those occurring with natural recovery. Furthermore, these studies had methodological problems that made their interpretation difficult. However, more recent studies, including several RCTs, suggest that CBT may be effective in treating PTSD symptoms and thus speeding up recovery in people recently exposed to trauma, and some of the studies have shown that early CBT treatments reduce the risk of long-term PTSD (see reviews by Ehlers & Clark, 2003; Litz et al., 2002). In contrast to the studies of debriefing, the CBT studies have focused on individual treatment.

Using a CBT approach, Foa, Hearst-Ikeda, and Perry (1995) treated 10 female victims of rape or aggravated assault, most within several weeks after the trauma. All met symptomatic, but not duration, criteria for PTSD. The intervention comprised four weekly 2-hr sessions that included treatment elements that have figured prominently in subsequent RCTs: education about trauma symptoms, detailed reliving of the traumatic event in memory, real-life exposure to avoided situations associated with the assault, cognitive restructuring designed to modify maladaptive beliefs, and training in relaxation and breathing skills. Ten other assault victims received only repeated assessments. Unfortunately, victims were not randomly assigned to the treatment versus assessment-only conditions.

The treatment Foa et al. (1995) provided proceeded as follows. During the first session, the therapist educated the patient about typical acute responses to trauma, and assembled a list of objectively safe situations and activities that the patient had been avoiding since the assault. During the second session, the therapist furnished a rationale for exposure therapy, emphasizing that many symptoms continue to occur because the patient has not adequately processed the trauma. After teaching the patient deep muscle relaxation and controlled breathing skills, the

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therapist asked the patient to close her eyes and describe the assault in the present tense as if it were happening again (imaginal exposure). As the patient repeatedly relived the traumatic event, the therapist took note if she expressed any cognitive distortions regarding the excessive dangerousness of the world or her own perceived incompetence. Both the relaxation procedure and the imaginal reliving were audiotaped, and the patient was instructed to listen to the tapes as homework practice. The patient was also encouraged to confront avoided situations and activities (exposure *in vivo*). Finally, the therapist initiated a discussion of the irrational beliefs expressed by the patient during the imaginal reliving. The third session began with 45 min of imaginal exposure followed by further cognitive therapy designed to correct distorted beliefs. Chief targets included the patient's beliefs about the unpredictability, uncontrollability, and dangerousness of the world, as well as any extremely negative beliefs she expressed about herself. The therapist helped the patient identify these problematic beliefs, and the patient's homework was to address negative thinking in everyday life. The fourth session included imaginal exposure, cognitive restructuring, and a review of skills mastered by the patient in the program.

In addition to the pretreatment assessment, Foa et al. (1995) administered assessments at 2 months and 5.5 months postassault. At 2 months, fewer treated than untreated patients met criteria for PTSD (10% vs. 70%). Relative to untreated patients, treated patients reported significantly fewer reexperiencing and arousal (but not avoidance) symptoms of PTSD. However, both groups continued to improve, and at the 5.5-month assessment, the untreated and treated patients did not differ significantly on measures of PTSD. This pilot study suggests that CBT may accelerate natural recovery from trauma.

Encouraged by these findings, Foa, Zoellner, and Feeny (2002) conducted an RCT involving survivors of physical or sexual assault who met symptomatic criteria for PTSD in the initial weeks after the event (range: 2–46 days, mean: 21 days). Patients were randomly assigned to receive four weekly 2-hr sessions of CBT ($n = 31$), repeated assessment ($n = 30$), or supportive counseling ($n = 29$). The third group was added 1 year into the study.

Unlike in the previous study, patients in the repeated-assessment condition improved just as much as did those in the CBT condition (Foa et al., 2002). Among those patients who completed the study, at posttreatment (i.e., when treatment ended) the proportion of CBT-treated patients who had PTSD was 45%, whereas the proportion of repeated-assessment patients who had the disorder was 55%—a nonsignificant difference. The supportive-counseling group had similar PTSD rates at posttreatment (52%), but reported greater PTSD severity and greater general anxiety than the CBT group. Thus, there was some evidence that CBT led to greater improvement in the severity of symptoms than did supportive counseling.

Follow-up assessments, conducted about 9.5 months later, did not alter the picture (Foa et al., 2002). There were no differences among the groups in the proportion of patients who still had PTSD (CBT, 32%; repeated assessment, 30%; supportive counseling, 29%). The positive outcome of the assessment group is noteworthy, although it is not clear why this study and the previous one (Foa et al., 1995) had different patterns of results for the assessment-only groups. The assessment conditions in the studies differed somewhat in that patients in the Foa et al. (2002) study received longer clinical assessments (that lasted as long as the sessions of the CBT and supportive-counseling conditions) than patients in the assessment condition in the Foa et al. (1995) study. The pattern of results from these studies raises several possibilities: (a) It is conceivable that detailed assessments with an empathic clinician have a positive impact on recovery. (b) For unknown reasons, the sample of the Foa et al. (2002) study may have been less responsive to CBT than the sample of the early study. (c) Early supportive counseling may impede rather than promote recovery from trauma.

CBT for ASD

While Foa's group in Philadelphia was testing methods for treating posttrauma symptoms soon after the event, Bryant and his colleagues were doing likewise in Sydney, Australia. The chief difference between the two research programs is that Foa targeted trauma survivors meeting symptomatic criteria for PTSD, whereas Bryant targeted those who met criteria for ASD. Thus, in the Australian studies, only patients who showed significant dissociative symptoms in addition to their PTSD symptoms were included.

In their first study, Bryant's group randomly assigned survivors of industrial or motor vehicle accidents to either CBT ($n = 12$) or supportive counseling ($n = 12$; Bryant, Harvey, Dang, Sackville, & Basten, 1998). All patients met criteria for ASD, and treatment commenced within 2 weeks of the accident. Both interventions consisted of five weekly 1.5-hr sessions of individual therapy. CBT included education about common posttraumatic reactions, progressive muscle relaxation training, imaginal exposure to the traumatic memory, cognitive restructuring of distorted trauma-related beliefs, and graduated *in vivo* exposure to avoided situations. Supportive counseling included education about posttraumatic reactions plus training in general problem-solving skills within the context of an unconditionally supportive therapeutic relationship. Posttreatment assessment occurred approximately 42 days after the pretreatment assessment, and the follow-up assessment occurred approximately 6 months posttrauma. At posttreatment, significantly fewer CBT-treated patients (8%) than counseled patients (83%) met criteria for PTSD. This difference remained at follow-up (17% vs. 67%). At both time points, patients in the CBT group also reported significantly fewer intrusive, avoidance, and depressive symptoms relative to patients in the counseling group.

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In their second study, Bryant, Sackville, Dang, Moulds, and Guthrie (1999) randomly assigned survivors of motor vehicle accidents or nonsexual assault to five weekly 1.5-hr sessions of (a) combined exposure therapy, cognitive therapy, and anxiety management ($n = 15$); (b) combined exposure therapy, cognitive therapy, and supportive counseling ($n = 14$); or (c) supportive counseling ($n = 16$). Exposure therapy in this study combined imaginal and *in vivo* exposure. All patients met (or nearly met) criteria for ASD, and treatment began within 2 weeks of the trauma. At the end of treatment, fewer patients who had received CBT (exposure, cognitive therapy, and anxiety-management group, 20%; exposure, cognitive therapy, and supportive-counseling group, 14%) than who had received supportive counseling only (56%) met criteria for PTSD. Likewise, at 6 months posttrauma, the proportions meeting criteria for PTSD were 23%, 15%, and 67% in the three groups, respectively. The two groups receiving exposure therapy plus cognitive therapy were indistinguishable on various outcome measures.

These results indicate that a combination of prolonged imaginal and *in vivo* exposure with cognitive therapy is more effective in preventing PTSD than is supportive counseling. Anxiety management does not enhance these preventive effects. Because as many as 80% of persons with ASD later develop PTSD (Harvey & Bryant, 1998b; Murray et al., 2002), the results suggest that supportive counseling may have some preventive power. However, some prospective studies have indicated that the percentage of ASD patients who later develop PTSD may be as low as 30% (O'Donnell, Creamer, Pattison, & Atkin, 2001), so it is also possible that supportive counseling impeded natural recovery. The lack of an assessment-only control condition makes it impossible to conclude what effect supportive counseling had, if any. Another limitation of this study is that several patients (not included among those whose results we have reported) dropped out of each of the treatments. The dropouts had significantly more severe ASD than those who completed the trial. A 4-year follow-up study of ASD patients who had received either CBT or supportive counseling (Bryant et al., 1998, 1999) revealed that CBT patients maintained most of their gains and that they were still doing better than patients who had received supportive counseling (Bryant, Moulds, & Nixon, 2003).

Additional studies from Bryant's group demonstrated encouraging results for five to six sessions of CBT with ASD patients. In one study, civilian trauma survivors ($n = 89$) were randomly assigned to receive CBT, CBT plus hypnosis, or supportive counseling (Bryant, Moulds, Guthrie, & Nixon, in press). Hypnosis was added to CBT in one group because some scholars believe that hypnosis may be especially helpful for trauma survivors with dissociative symptoms (Spiegel, 1996) and because ASD patients are excellent hypnotic subjects (Bryant et al., 2001). A hypnotic induction and suggestion to engage in the imaginal exposure exercise was administered immediately prior to imaginal exposure therapy in an effort to foster emotional processing. Among those completing the

RCT, fewer patients in either the CBT (13%) or CBT-plus-hypnosis (9%) condition than in the counseling condition (56%) met criteria for PTSD at posttreatment. At 6-month follow-up, the numbers were 21%, 22%, and 59%, respectively. At posttreatment, patients in the CBT-plus-hypnosis group reported significantly fewer reexperiencing symptoms than did those in the CBT-alone group. There may be value in adding hypnosis to imaginal exposure.

Finally, 24 ASD patients who had sustained a mild traumatic brain injury during a motor vehicle accident were randomly assigned to receive five sessions of either CBT or supportive counseling (Bryant, Moulds, Guthrie, & Nixon, 2003). ASD patients who sustained a mild brain injury are at risk for PTSD despite having had impaired consciousness during the accident (Bryant & Harvey, 1998). The proportions of patients meeting criteria for PTSD at the 6-month follow-up were 8% in the CBT group and 58% in the counseling group. Thus, loss of consciousness during part of the traumatic event does not impede an ASD patient's ability to benefit from CBT.

In a study yielding data comparable to those of Bryant et al. (2003), Gidron et al. (2001) developed a two-session CBT intervention that was intended to promote memory reconstruction among individuals who had been involved in traffic accidents. The intervention was delivered over the telephone from 1 to 3 days after the accident. Individuals qualified for this RCT if they had a heart rate higher than 94 beats per minute at admission to the emergency room, and were therefore considered at risk for PTSD. Patients who received this intervention ($n = 8$) had greater reductions in severity of PTSD symptoms 3 to 4 months after the trauma than did those who received two sessions of supportive listening over the telephone ($n = 9$).

It is unclear why Bryant's group found much more pronounced differences between early CBT and supportive counseling than did Foa's group. Both research teams treated patients within weeks of the traumatic event, and the two groups used similar techniques. A major difference appears to be the pattern of results for the supportive-counseling condition. In the Bryant et al. studies, patients who received supportive counseling still had significant psychopathology and high PTSD rates at follow-up, whereas in the Foa et al. (2002) study, the majority of patients who received supportive counseling had recovered. One possible explanation for this discrepancy is that the samples Bryant et al. studied were at greater risk for chronic PTSD because they met criteria for ASD. However, in an additional analysis of their data, Foa et al. divided their patients into those who met ASD criteria and those who did not and did not find differential outcomes for patients with and without ASD. Therefore, it is unclear whether dissociative symptoms confer risk for chronic PTSD over and above the risk conferred by severity of PTSD symptoms (e.g., G.N. Marshall & Schell, 2002). Other possible explanations of the difference are a somewhat smaller responsiveness to CBT in the sample studied by Foa et al. (2002), a differential time course

of recovery depending on the type of trauma, or somewhat stricter exposure homework assignments in the Bryant et al. studies.

CBT Starting 1 to 3 Months After Trauma

Three other research groups have delivered broadly similar CBT interventions between 1 and 3 months posttrauma. Ehlers et al. (in press) recruited traffic accident survivors with PTSD about 2 months after the accident and had them complete a 3-week self-monitoring phase prior to enrolling in a formal CBT trial. Those patients who still had PTSD at the end of this phase were randomly assigned to either up to 12 weekly sessions of CBT ($n = 28$), a self-help condition (one session with a clinician and a self-help booklet; $n = 28$), and repeated, but infrequent, assessments of PTSD symptoms ($n = 29$). The CBT program emphasized cognitive therapy rather than prolonged, repeated imaginal exposure to traumatic memories (see Ehlers & Clark, 2000). CBT was superior to self-help and repeated assessment on all measures at posttreatment and at follow-up. The 11% PTSD rate at 6 months after CBT (i.e., 1 year posttrauma) was lower than the 54% rate for patients receiving repeated assessments and lower than the 60% rate for patients in the self-help condition. On most measures, the self-help condition did not differ from the repeated-assessment condition; the only exceptions were that the self-help group had a lower rate of high end-state functioning (a combined measure of PTSD symptoms, anxiety, depression, and disability) and a greater rate of requests for treatment at follow-up.

In another study, Öst, Paunovic, and Gillow (2002) randomly assigned crime victims with PTSD to up to 16 sessions of CBT or to a wait list. Treatment began between 4 and 12 weeks posttrauma. CBT comprised imaginal and *in vivo* exposure and cognitive restructuring techniques. At the end of treatment, the CBT group was significantly superior to the wait-list group on measures of PTSD symptoms, anxiety, depression, quality of life, and social adjustment. Among patients completing the trial, only 5% in the CBT group still had PTSD, in contrast to 65% in the wait-list group.

In an RCT from Spain, Echeburua, de Corral, Sarasua, and Zubizarreta (1996) provided a five-session cognitive stress-management program to rape survivors 1 to 3 months after the event ($n = 10$) and compared the effects of this approach with those of five sessions of progressive muscle relaxation ($n = 10$). There was no untreated group. The CBT program included information about typical responses to rape, cognitive restructuring of negative thoughts and guilt related to the event, training in coping skills such as relaxation and thought stopping, and instructions to gradually confront reminders of the event. No imaginal reliving was included. Both interventions markedly reduced symptoms of PTSD, anxiety, and depression. The cognitive stress-management group did not differ from the relaxation group at the end of treatment, but showed lower PTSD symptoms at the 1-year follow-up.

Overall, CBT treatments delivered 1 to 3 months after a trauma show promising results for survivors with PTSD. Relative to no treatment, CBT promotes recovery from trauma.

CONCLUSIONS, UNRESOLVED ISSUES, AND FUTURE DIRECTIONS

Effects of Early Interventions

Although psychological debriefing is widely used throughout the world to prevent PTSD, there is no convincing evidence that it does so. RCTs of individualized debriefing and comparative, nonrandomized studies of group debriefing have failed to confirm the method's efficacy. Some evidence suggests that it may impede natural recovery. For scientific and ethical reasons, professionals should cease compulsory debriefing of trauma-exposed people. In response to the disappointing results for psychological debriefing, crisis intervention specialists recommend psychological first aid, which includes attending to the survivors' individual needs in a nonprescriptive, flexible way. Data on the efficacy of this approach are needed. Raphael and Dobson (2001) recently put the need for the evaluation of acute posttrauma interventions in perspective:

Because of the needs of survivors ("victims") and the often highly charged environments that follow traumatic events, there has been a reluctance to evaluate the interventions applied and at times suggestions that to even think of doing so is wrong because everything provided with such goodwill for those so badly affected must be of benefit. This is further emphasized by public demand and the perceived helpfulness of much that is provided. It is only now—with a growing body of evidence that much may not be of benefit, may be costly without good reason, and may even for some possibly produce harm—that requirements for evaluation can really gain acceptance. It should be clear that any interventions must be accountable and that their outcomes must be systematically evaluated in the shorter and in the longer term. Thus the requirement should be in place and a culture developed to evaluate all acute posttrauma interventions and their effectiveness or otherwise. (p. 155)

The evidence for the efficacy of early CBT treatment in preventing chronic PTSD among symptomatic trauma survivors is mixed, but encouraging. It remains unclear whether CBT given in the first month after trauma is more effective than repeated assessment without formal treatment (Foa et al., 2002), although CBT given from 1 month onward appears superior to assessment alone or no intervention (Ehlers et al., in press; Öst et al., 2002). Early CBT is superior to supportive counseling—at least for survivors with ASD (Bryant et al., 1998, 1999, in press).

Unresolved Issues

Ehlers and Clark (2003) and Litz et al. (2002) have identified unresolved issues in need of further research. First, for several possible reasons, some CBT studies have had much higher