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Challenges and Successes in Dissemination of Evidence-Based Treatments for Posttraumatic Stress: Lessons Learned From Prolonged Exposure Therapy for PTSD

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Introduction

Since the time of World War I, researchers have consistently documented stress reactions to traumatic events including war, disaster, rape, accidents, and other forms of traumatic events (Shephard, 2001). Consequently, over the past century there has been an evolution of attempts to ameliorate the psychological effects of traumatic experiences, with a more recent focus on post-traumatic stress disorder (PTSD). We now have treatments that can efficaciously treat PTSD in most people. The next major step is how we disseminate these evidence-based treatments (EBTs) in real-world settings.

This review provides an overview of disseminating EBTs for PTSD, complemented by our own experiences with disseminating Prolonged Exposure (PE), to describe the successes, barriers, and challenges involved in promoting the adoption of EBTs in established and non-established mental health systems. There are several variants of trauma-focused therapy with proven efficacy which we describe below; this review focuses on PE because it has the largest body of supportive evidence and has been subjected to dissemination attempts more than other forms of psychotherapy.

Definition of Posttraumatic Stress Disorder

Earlier conceptualizations of traumatic stress reactions typically regarded them as transient responses that normally would abate shortly after the trauma exposure. For example, in the first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1952), traumatic stress reactions were classified as acute post-trauma responses under gross stress reaction, whereas longer lasting reactions were subsumed under the anxiety or depressive neuroses. A major change occurred in *DSM-III* (American Psychiatric Association, 1980), with the formal introduction of PTSD diagnosis.

This development was partly influenced by the need to understand and meet the needs of veterans returning from Vietnam with posttraumatic stress symptoms.

In the current version of *DSM-IV* (American Psychiatric Association, 1994), PTSD is conceptualized as an anxiety disorder that encompasses severe and persistent stress reactions after exposure to a traumatic event. PTSD diagnosis requires that an individual had been exposed to threatened or actual harm to the self or others and also experience intense fear, helplessness or horror (Criterion A). PTSD comprises three major symptom clusters. The first cluster involves re-experiencing symptoms, including intrusive memories, flashbacks, nightmares, and distress in response to reminders of the trauma, of which an individual must display at least one (Criterion B). The second cluster involves avoidance symptoms, including active avoidance of thoughts and situations that are reminders of the trauma, as well as social withdrawal and numbing of emotional responses; an individual must experience at least three of these symptoms (Criterion C). The final cluster involves arousal symptoms, including exaggerated startle response, insomnia, irritability, and concentration difficulties; a PTSD diagnosis requires two of these symptoms (Criterion D). *DSM-IV* requires that the symptoms be present for more than 1 month after the trauma in order not to “pathologize” people who may be experiencing a transient stress response.

In addition to PTSD, *DSM-IV* introduced the new diagnosis of acute stress disorder (ASD) to describe acute stress reactions that occur in the initial month after trauma. This diagnosis was introduced for two primary reasons: to describe acute stress reactions that occur in the first month after trauma exposure, and to identify trauma survivors who are at high risk for developing subsequent PTSD (Harvey & Bryant, 2002). A major rationale for the introduction of this diagnosis was that because PTSD can only be diagnosed at least one month following trauma, there was a diagnostic gap in the initial month after a trauma. The lack of a formal diagnosis to describe posttraumatic stress in the initial month potentially prevented some trauma survivors from having ready access to mental health services; thus a formal diagnosis was intended to alleviate this potential barrier to care.

ASD is very similar to PTSD, with some distinctions. The stressor criterion is identical to that of PTSD (Criterion A). One must also experience at least three dissociative symptoms (Criterion B), one reexperiencing symptom (Criterion C), marked avoidance (Criterion D), marked arousal (Criterion E), and evidence of significant distress or impairment (Criterion F). The disturbance must last for a minimum of 2 days and a maximum of 4 weeks (Criterion G), after which time a diagnosis of PTSD can be considered. The distinctive element is the emphasis placed on dissociative reactions to the trauma. A diagnosis of ASD requires that the individual have at least three of the following: (a) a subjective sense of numbing or detachment, (b) reduced awareness of one's surroundings, (c) derealization, (d) depersonalization, or (e) dissociative amnesia. The emphasis on dissociative responses was based on: a) the proposition that dissociating from awareness of the traumatic memories and emotions in the immediate aftermath of trauma can impede processing of these reactions and thereby lead to subsequent PTSD (Spiegel, 1994), and b) on evidence that dissociation occurring in the immediate aftermath of a traumatic experience is predictive of subsequent PTSD (Ehlers, Mayou, & Bryant, 1998; Koopman, Classen, & Spiegel, 1994; Murray,

Ehlers, & Mayou, 2002; Ozer, Best, Lipsey, & Weiss, 2003; Shalev, Freedman, Peri, Brandes, & Sahar, 1997).

Prevalence and Course of PTSD

Population studies indicate that most people are exposed to traumatic events that can potentially trigger PTSD. The US National Comorbidity Survey found that 61% of adults reported exposure to a traumatic stressor (Kessler, Sonnega, Hughes, & Nelson, 1995). Another large-scale study of adults in Detroit found that 90% reported exposure to a traumatic stressor (Breslau, Davis, Andreski, & Peterson, 1991). Despite the common occurrence of traumatic events, only a minority of people develop PTSD. For example, the National Comorbidity Survey found that only 20.4% of female trauma survivors and 8.2% of male trauma survivors developed lifetime PTSD (Kessler et al., 1995). Similarly, the Detroit study found that only 13% of the women and 6% of the men had developed PTSD (Breslau et al., 1991). These studies indicate that most people recover from a traumatic experience and do not develop PTSD. Women have at least a two-fold risk of developing PTSD than men (Breslau, Davis, Andreski, Peterson, & Schultz, 1997; Olff, Langeland, Draijer, & Gersons, 2007). Across many studies, there is a tendency for more severe traumatic events to result in more severe PTSD. For example, there is evidence that interpersonal violence leads to more severe PTSD than does impersonal trauma (Darves-Bornoz et al., 2008).

PTSD typically follows a particular course. Whereas most people report posttraumatic stress reactions in the initial days after trauma, the majority of these reactions are transient (Bryant, 2003). For example, whereas 94% of rape survivors displayed sufficient PTSD symptoms 1 week post-trauma to meet criteria (excluding the 1 month time requirement), this rate dropped to 47% 11 weeks later (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). In another study 70% of women and 50% of men were diagnosed with PTSD at an average of 19 days after an assault; the rate of PTSD at 4-month follow-up dropped to 21% for women and zero for men (Riggs, Rothbaum, & Foa, 1995). Similar patterns have been observed following motor vehicle accidents (Blanchard, Hickling, Barton, & Taylor, 1996), the New York City terrorist attacks (Galea et al., 2002; Galea et al., 2003), and the 2004 tsunami (van Griensven et al., 2006).

Despite a general trend for people to adapt after trauma, it is also important to note that there are different trajectories from acute reactions to chronic PTSD. The main exemplar of a different trajectory is delayed-onset PTSD, which involves trauma survivors in whom the disorder becomes apparent more than 6 months after exposure to the trauma. Delayed-onset is an uncommon response in civilian populations, with approximately 15% of PTSD cases developing the condition after 6 months; such delayed presentation is more common in military contexts (for a review, see Andrews, Brewin, Philpott, & Stewart, 2007). It is becoming apparent that recovery following trauma exposure depends on the stressors that occur in the post-trauma environment, where PTSD can be compounded by the level of stress experienced in the following period (Bryant & Harvey, 1995; King, King, Fairbank, Keane, & Adams, 1998). For example, a study on the trajectory of recovery after Hurricane Katrina found that rates of PTSD actually increased over time following Hurricane Katrina

(Kessler et al., 2008). It is likely that the lengthy periods of relocation, lack of housing, and loss of basic resources led to accumulating demands on people's resources, which resulted in rising rates of PTSD. This issue highlights the need for effective dissemination of interventions for PTSD because having the disorder can compromise people's capacities to deal with the ongoing stress that is common after trauma.

There is overwhelming evidence that PTSD contributes to marked health, interpersonal, and social problems. Many studies found that PTSD is associated with diminished quality of life; one study found that the frequency of severe impairments in quality of life in PTSD (59%) was comparable to that associated with major depressive disorder (63%) (Rapoport, Clary, Fayyad, & Endicott, 2005). Longitudinal studies indicate that PTSD severity is also predictive of subsequent impaired quality of life (Holbrook, Hoyt, Stein, & Sieber, 2001). PTSD is also associated with poor health outcomes, including cardiovascular, neurological, and gastrointestinal disorders (Breslau & Davis, 1992; McFarlane, Atchison, Rafalowicz, & Papay, 1994; Shalev, Bleich, & Ursano, 1990). There is also strong evidence that PTSD is associated with marked economic costs. One systematic review of disability from unintentional injury found that the inclusion of PTSD in the analysis increased the non-fatal burden of injuries by 53% (Haagsma et al., 2011).

Importantly, reduction of PTSD symptoms through exposure-based treatments leads to marked improvements in quality of life (Foa et al., 1999; Schnurr, Hayes, Lunney, McFall, & Uddo, 2006). Health economic analyses have demonstrated that providing evidence-based interventions for PTSD made huge savings. An analysis of costs of PTSD and depression in veterans returning from the wars in Iraq and Afghanistan showed that the social costs during a 2-year period would total \$923 million; it was estimated that implementation of evidence-based treatments would result in saving of \$123 million (15%) (Kilmer, 2011). An analysis of mental health costs for treating PTSD in Australia calculated that implementing PE would increase cost effectiveness 1.5 times over current care (Issakidis, Sanderson, Corry, Andrews, & Lapsley, 2004).

Comorbidity

It is important to note that PTSD is more often associated with other psychiatric disorders than occurring as the sole diagnosis. Lifetime comorbidity prevalence rates with PTSD have been reported between 62%-92% (DeGirolamo & McFarlane, 1996; Kessler et al., 1995; Perkonig, Kessler, Storz, & Wittchen, 2000; Yehuda & McFarlane, 1995). PTSD is commonly comorbid with depression, other anxiety disorders, and substance abuse. Although a degree of comorbidity may be attributed to overlapping symptoms between PTSD and both depressive and other anxiety disorders (Kessler, Chiu, Demler, & Walters, 2005), several studies have confirmed that there is marked comorbidity of PTSD with these disorders even when controlling for this overlap (Perkonig & Wittchen, 1998). This comorbidity may involve the individual developing a primary psychiatric disorder first, which then predisposes them to experiencing trauma and associated PTSD. Consistent with this view, a significant proportion of individuals with PTSD and comorbid disorders develop PTSD after prior onset of another disorder (Breslau, Davis, Peterson, & Schultz, 1997; Perkonig et al., 2000). The other pathway to comorbidity is the onset of PTSD, which leads

to simultaneous or subsequent comorbid disorders. There is much evidence of comorbidity developing following PTSD onset, showing that PTSD can exacerbate the likelihood of developing distinct disorders (Perkonig et al., 2000). This finding highlights the importance of treating PTSD because apart from the psychological and social costs of PTSD itself, it can directly contribute to the presence of a broader range of psychopathology.

It is also important to note that many psychological problems other than PTSD can develop after a traumatic experience. There is evidence that trauma survivors experience a range of psychiatric disorders, including mood and anxiety disorders (Blanchard, Hickling, Taylor, & Loos, 1995; Bryant et al., 2010; O'Donnell, Creamer, Pattison, & Atkin, 2004; Shalev et al., 1998; Zatzick, Russo, & Katon, 2003). These conditions can occur with and without PTSD. Therefore, treatments of trauma survivors should address the disorder that emerged from that traumatic experience (e.g., depression). Indeed, each of the common disorders that follow a traumatic event has a large body of evidence indicating that certain interventions can be highly efficacious. We are not suggesting that PE is the optimal intervention for all posttraumatic reactions, and we recognize the sound empirical support for psychological and pharmacological interventions for the array of mood and anxiety disorders that often occur following trauma.

Stages of Treatment Development

In development of any treatment for a disorder, there is a sequence of stages in which the treatment will be developed, evaluated, and implemented. In the development of many treatments (although not all), treatment components emerge from fundamental scientific study concerning potential mechanisms that underpin psychopathological processes. This level of research can shed light on mechanisms that drive both the etiology and maintenance of the disorder, as well as its resolution.

In the context of PTSD, early exposure therapy protocols were predated by work on classical conditioning that informed the field about the processes by which stimuli could acquire fearful qualities, and how these stimuli could trigger ongoing anxiety. These studies, which date back many years (Watson & Rayner, 1920), formed the initial pathway that subsequently led behaviorists to develop exposure-based therapies. Contemporary treatments like prolonged exposure therapy built on these earlier treatments and on emotional processing theory (Foa & Kozak, 1986) that integrated modern learning theories and information processing models. Cognitive processing therapy incorporated concepts from cognitive therapy (e.g., Beck, 1976). It should be noted, however, that the process of treatment development is not linear and may involve reciprocal influences among theory, outcome trials, and treatment mechanism studies.

Once a treatment is developed, it needs to be tested in efficacy paradigms. These studies are the most common form of trial in the current literature, often referred to as randomized controlled trials (RCTs). According to the gold standard for RCTs, these studies apply CONSORT standards and require randomization of patients to different treatment conditions, blind assessments, standard assessment and treatment protocols, treatment fidelity checks, and close reporting of those who are enrolled and retained in the study

(Boutron, Moher, Altman, Schulz, & Ravaud, 2008). This level of evidence is essential if we are to have faith that the treatment is safe and useful in alleviating the symptoms that are targeted. These carefully controlled trials can also be criticized, however, for being conducted in specialist treatment/research centers in which specialist clinicians provide the treatment and receive close supervision, adopting restrictive inclusion criteria that result in recruiting select patients who may not be representative of the population with the disorder, and adhering strictly to treatment protocols that may not reflect common clinical practice (Seligman, 1995; see elaborated discussion below).

Accordingly, the next step is testing proven treatments in effectiveness studies. Effectiveness trials are conducted in typical clinical settings by standard clinicians who do not enjoy the same level of training or supervision as therapists in specialist centers, employ few exclusion criteria so as to ensure that the treatment is being evaluated in a representative sample, and focus on a broader range of outcomes than do efficacy trials. For example, whereas efficacy trials often index psychopathology and functioning outcomes, effectiveness trials may also evaluate factors associated with treatment delivery, acceptability of the treatment to both clinicians and patients, cost-effectiveness of a treatment, and quality of the treatment being delivered. These measures are important because a highly efficacious treatment that is useful only when delivered by specialist centers and is cost-prohibitive in the general health sector will have limited utility.

In contrast to efficacy trials that measure outcomes in terms of effect size of psychopathology indices, effectiveness trials may place equal emphasis on reduced cost of treatment delivery or increased access to treatment – sometimes at the cost of traditional effect size. For example, a treatment for PTSD that has been shown to be highly efficacious in specialist treatment settings for survivors of motor vehicle accidents may not necessarily be appropriate for people recovering from the effects of a massive disaster. There are many factors that potentially distinguish the motor vehicle accident from the disaster. In contrast to the relatively isolated motor vehicle accident, disasters can cause massive social and infrastructure damage, the effects of the disaster can persist for months or years, and demand on health resources can limit the capacity for agencies to provide optimally trained mental health professionals. It is important to determine through effectiveness trials whether a treatment can be (a) taught to mental health personnel who will assist the disaster survivors, (b) implemented in the context of ongoing disruptions after the disaster (e.g., inability to schedule regular appointments), (c) implemented reasonably inexpensively so the limited mental health resources can be provided to those in need, (d) delivered in a way that is relevant and acceptable to both clinicians and disaster survivors, and (e) delivered in a way that minimizes any risks to the survivors. At the same time, it is important that effectiveness trials can retain scientific control over the design so as to ensure confidence in the outcomes, as well as adherence to the proposed change mechanisms previously demonstrated through efficacy trials (Glasgow & Emmons, 2007).

Having demonstrated that a treatment can be transported from efficacy to effectiveness, the next step is to disseminate the treatment to primary care and public health settings. By dissemination, we mean the process by which community practitioners, and the agencies in which they work, learn an evidence-based treatment, decide to implement the treatment, and

successfully implement it with appropriate patients. Put another way, dissemination has been defined as “how information about mental health care interventions is created, packaged, transmitted, and interpreted among various important stakeholder groups”; in contrast, “research on implementation includes a focus on the level to which mental health inventions can fit within real world mental health service systems” (Chambers, Ringeisen, & Hickman, 2005, p. 313). The major challenge for the field is to ensure that mental health professionals use treatments that have empirical support.

For over a decade there has been increasing recognition that EBTs need to be more widely integrated into community practice. The National Institute on Drug Abuse (NIDA) and the National Institute of Mental Health (NIMH) have initiated strategic plans for dissemination. Additionally, many state-based initiatives have commenced programs to implement EBT programs (Biegel et al., 2003; Chorpita et al., 2002). Despite this move towards dissemination of EBTs, there remain major obstacles to the effectiveness of dissemination attempts. Whereas earlier dissemination attempts occurred in the context of substance abuse programs, these have now progressed to other disorders, including PTSD. Before discussing EBTs for PTSD and how they are disseminated, it is important to understand prevailing frameworks for dissemination.

Frameworks for Dissemination

There are a range of dissemination models that can be drawn on to explain the processes by which an evidence-based intervention can be effectively translated into general practice (McHugh & Barlow, 2012). We begin by reviewing general theories of dissemination and then summarize principles from these theories in a stage model of the dissemination process.

Theories of Dissemination

A recent overview of dissemination models categorized different theories on the basis of whether they emphasize factors that influence the individual's/group's decision to adopt an intervention (“adopter models”) or whether they also emphasize social, technological, and process variables (Schoenwald, McHugh, & Barlow, 2012). It is worth noting that adopter models emerged from earlier conceptualizations of *diffusion*, which placed emphasis on the naturally occurring process by which new information is spread and eventually adopted by users.

Exemplifying the adopter models is Rogers's Diffusion of Innovations theory, which has been applied to many fields beyond mental health (Rogers, 2003). This theory entails four components: (a) the innovation, (b) communication channels, (c) time, and (d) social systems. Rogers posits that motivation to adopt an innovation involves a number of key processes. First, the innovation must entail perceived relevance to the end users, and advantages of the innovation relative to current options must be salient. Second, adoption is more likely if the innovation is compatible with current procedures. In the context of mental health, the more an individual or a system needs to modify its existing processes, the less likely it is that the individual or system will embrace adoption. Third, change is more likely to occur when the modifications are simple relative to complex innovations that will require extensive training or systemic change. Fourth, systems more readily accept gradual

introduction of innovations than those that are introduced abruptly. A common observation in successful dissemination programs is that they commence with a few key skilled clinicians, who then encourage adoption of evidence-based approaches throughout the organization. Fifth, adoption is more likely if others observe the innovation, such as through modeling and role-playing new therapeutic strategies.

The next key step is communication, which often involves public strategies (e.g., journals, books, etc.) to enhance knowledge of the innovation; Rogers (2003) argues, however, that peer communication is one of the key strategies to influencing users' decisions to implement the new innovation. He argues that respected figures and opinion leaders can play an important role in this process, which has been done with some degree of success with HIV and tobacco use prevention campaigns (Sikkema et al., 2000; Valente, Hoffman, Ritt-Olson, Lichtman, & Johnson, 2003). Rogers also emphasizes that dissemination functions at different timeframes for different target groups. It is argued that deciding to adopt a new practice involves the steps of learning about the practice, forming a position about the practice, deciding whether to implement it, initiating the practice, and evaluating its introduction. Rogers suggests that dissemination attempts can benefit from targeting more liberal groups initially and subsequently placing efforts on more conservative groups, who will take more time to adopt the new innovation. Finally, Rogers acknowledges that the capacity of individuals to implement a new innovation is dependent on the social context or organization in which they operate. Mental health systems, for example, have significant influence on the behavior of individuals within them, and also dictate training, length of service provision, capacity of supervision, and other factors that can influence the extent to which new practices can be implemented.

Compared to adopter models, more behaviorally-oriented models have emphasized how beliefs and motivations can modify behavior; not surprisingly, these models focus on how dissemination can alter decisions to adopt, implement, and maintain the desired behavior. Examples of these models are the theory of reasoned action (Fishbein & Ajzen, 1975) and theory of planned behavior (Ajzen, 1991), which place greater emphasis on social factors that influence the dissemination of new practices. Both of these theories emphasize that behavioral intentions are pivotal in influencing behavior change, and explicitly point to the roles of the expected benefits of changed behavior, how the behavior relates to normative behavior, and one's self-efficacy to successfully complete the altered behavior. This line of inquiry has been regarded as very relevant to mental health settings because it identifies specific strategies that can be introduced to modify behaviors (Schoenwald et al., 2012). Supporting this proposal, a review of models found that these two models (the theories of reasoned action and planned behavior) were able to predict between 25%-34% of the variance in prospective studies of clinician behavior and intentions (Godin, Belanger-Gravel, Eccles, & Grimshaw, 2008). Other models place more emphasis on the context or organization than on the individual adopter or end-user of the new practice. These models tend to construe dissemination as a process that depends largely on the interaction between the adopter and the context/organization in which dissemination is occurring (Bereg, Aarts, & van der Lei, 2003). Related to this social approach are models that also recognize the need for technical and resource allocation for the dissemination to be successful, which include ensuring that adequate resources are available for training and dissemination, strategies to

overcome barriers, and communication systems to ensure smooth transition of knowledge (Schoenwald et al., 2012).

One other approach worth mentioning is models that emphasize marketing strategies that target specific groups. This perspective recognizes the importance of tailoring the strategy and message to specific groups, and often involves preliminary identification of subgroups' perceptions or needs, and their readiness to accept specific messages (Bracht, Kingsbury, & Rissel, 1999). Schoenwald and colleagues (2012) describe one earlier example of attempting dissemination among substance abuse treatment providers, which segmented the target audience following preliminary market analysis and then tailored an approach for distinct groups; this approach resulted in more than 80% of sites deciding to implement the treatment (Martin, Herie, Turner, & Cunningham, 1998).

Stage Models of Dissemination

Stirman, Crits-Christoph, & DeRubeis (2004) have emphasized the importance of key stages in Rogers' framework, arguing that cases of successful dissemination are characterized by the presence of sequential phases of the process. Similar phases can be identified in other dissemination models that attempt to sequence strategies that include identifying needs, implementing trainings and roll-out of the programs, evaluation, and finally integration into regular practice. The first of these stages in Rogers' model is *agenda setting*, in which problems that necessitate change in current practice are identified. In the context of trauma survivors, it may be the case that a women's organization is concerned that clients with PTSD are not experiencing symptom relief from treatment programs currently being offered to them. The agenda setting phase may comprise obtaining data to shape the agenda so that new treatment programs will address specific needs. Social marketing theories, which rely on more consumer-oriented frameworks, describe this phase as market analysis in which focus groups, surveys, and advisory boards are used to identify stakeholders' needs (Martin et al., 1998). These forums, and particularly advisory boards, can be crucial in identifying potential systemic obstacles or individuals that may impede the dissemination.

The next phase consists of matching the problem to the appropriate innovation. For example, a military organization concerned about high rates of treatment non-completion because of frequent rotation of troops in a military base may require massed or brief EBT to treat the PTSD rapidly. In social marketing terms, this is referred to as *market segmentation* where the innovation is introduced to a targeted component of the organization. This phase is typically an extension of the readiness of the organization to accept the innovation, in which the organization's willingness for change, resource availability, and staff needs are indexed to determine the likelihood of the success of the planned innovation (Lehman, Greener, & Simpson, 2002).

Social marketing theories place considerable emphasis on the communication phase where the innovation is presented in ways that secure allegiance with the EBT and ensuring frequent training, dialogue, and supervision to identify obstacles at each point and to "reach" those individuals or parts of the organization that are resistant to change (Martin et al., 1998). There is considerable evidence that stakeholder's perception of the innovation constitutes a pivotal predictor of the success of dissemination programs (Glassman, 1995;

Schmidt & Taylor, 2002); between 49-87% of the variance of dissemination efforts is accounted for by perception of the program (Berwick, 2003). Across models, this step is regarded as crucial because strategic effort is often required to alter practitioners' long-held views on certain practices if the introduction of a new practice is to succeed. This step is reinforced by some evidence that top-down decisions to introduce change do not necessarily translate into changing practice at a grass-roots level (Henggeler, Lee, & Burns, 2002). Collective agreement by the end-users is more likely to result in successful training, supervision, and implementation than if directives are given to unwilling practitioners.

Next, Rogers (2003) emphasizes a phase that involves redefining and restructuring both the treatment and the organizational structure to allow the innovation to be introduced effectively. This stage is often a major impediment to dissemination because it may require an organization to provide additional resources and time for training and supervision of a new treatment, integration of new staff, or introducing new assessment protocols. Similarly, the EBT may need to be modified to meet the restrictions and needs of the organization, such as abbreviating the treatment or altering the traditional delivery mode. Following these steps, the two parties (the organization and the innovation provider) need to identify and overcome challenges to smooth dissemination throughout the organization.

Finally, the new practice needs to become a standard procedure in the organization. Inherent in this phase is the importance of ongoing evaluation of the success of the dissemination. During this phase It may be important to continually monitor the dissemination outcomes as the needs or the structure of the mental health agency change (Bracht et al., 1999).

We have drawn on existing models of dissemination (e.g., Addis, 2002; Schmidt & Taylor, 2002; Stirman et al., 2004), which often comprise very similar stages, to describe the stages of disseminating EBTs. These stages include planning, communication, training, implementation, evaluation, and monitoring. For an abbreviated description of the most common components that take place in each stage, see Table 1.

Challenges to Dissemination

The effectiveness of disseminating EBTs depends upon the capacity of the initiative to overcome the numerous challenges that typically arise. Several commentaries have summarized the common challenges faced by attempts to disseminate mental health interventions (Addis, 2002; Schmidt & Taylor, 2002; Stirman et al., 2004). Table 1 lists the most common challenges that may occur in each stage in the dissemination and implementation processes and that may impede the success of dissemination strategies. At each stage of the dissemination process, challenges can emerge from the innovation proponent, the individuals who are targeted, or the organization in which the change is being initiated. In terms of the proponents of the EBT, a common challenge is the proponent's ignorance or unfamiliarity with the culture and/or structure of the organization. An expert in an EBT may approach a military, emergency response, or agency from a different cultural setting and attempt to introduce the EBT with inadequate understanding of how to navigate the organization. A frequent reason for failure at the outset of the dissemination process is that the proponents underestimate their limitations in initiating change and do not fully

recognize the reliance that must be placed on local or organizational support to facilitate each step.

A related obstacle associated with the proponents of the EBT is their tendency to promote their particular format of the therapy rather than being flexible and willing to compromise with the organization's needs. For example, an expert who has been working with a particular paradigm for years in a particular setting may expect this paradigm to be transferred readily to all other settings; however, different organizations or contexts may require adaptations in terms of therapy length, frequency, or format, level of skilled workers providing the treatment, or willingness to adopt all components of the treatment. Commencing the dissemination dialogue in a way that emphasizes flexibility on the part of the proponent and that can meet the needs of the organization is much more likely to succeed than a rigid attitude.

In terms of the service providers, arguably the major obstacle to resistance at each stage is allegiance to current practice; this allegiance can result in resistance to EBTs, especially if introduced by external agencies. This resistance can occur at a management level that prevents any form of planning, training, or implementation, or at an individual level, where on-the-ground providers may resist attempts to change their practices even when initiated at an organizational level. Heightening motivation for change is critical in these situations, such that factors maintaining resistance are reduced and incentives for change enhanced. For example, a military agency may be reluctant to adopt an EBT because its priority is maintaining an operational workforce rather than allegiance to any form of mental health intervention. Budget cuts may amplify this issue, thereby reinforcing concerns of allocating additional funds to shifting organizational practice. In this case presenting the EBT as increasing efficiency and reducing expense can overcome budgetary concerns. For example, demonstrating to military leaders that EBTs can reduce the burden of mental health problems, reduce days out of role, and increase capacity to remain in active duty can effectively motivate the military decision-makers to adopt the EBT for operational and budgetary reasons.

A very common concern in organizations is the expenditure of resources on training and implementation at the cost of meeting short-term needs of allocating available funds to immediate clinical care. It is important to highlight the long-term financial benefits of engaging in EBTs, citing previous cases, relative to the short-term gains made within the immediate budgetary cycle. The identification of motivated people, and particularly opinion leaders in the organization who have allegiance to the EBT, can help overcome the obstacles of allegiance to existing practices. In the context of the military, for example, a uniformed proponent of change can often have much more impact on changing practice than a non-uniformed expert.

At an organizational level, a range of factors can impede the capacity for change. The more fragmented the organization, the more difficult it can be to initiate change. Even highly organized agencies can be fragmented in terms of the stability needed for dissemination. For example, initiating change in a military organization can be difficult because of the frequent changes in personnel. Many agencies, including the military, adopt a policy of routinely

rotating staff to guard against complacency and security risks; this can be problematic, however, because years may be spent convincing an opinion leader within an organization to adopt an EBT and then this individual will be transferred before the process can be initiated or well established. For this reason, the planning stage is critical in the development of the dissemination process because it can identify the core factors that are needed to initiate the processes that increase the likelihood of stability, regardless of personnel or departmental changes. Reliance on advisory boards and focus groups can be helpful in this process to obtain information concerning the optimal means to ensure stability and overcome foreshadowed changes in organizational structure. Several large-scale dissemination programs have reported relying extensively on advisory boards comprising both agency representatives and external experts to identify likely problems that may emerge within the target organization (Chorpita et al., 2002; Martin et al., 1998; Torrey et al., 2001).

Stirman et al. (2004) note that while Rogers' (2003) stages have not been tested prospectively, they have useful in explaining obstacles to, as well as successful means of achieving, dissemination across a number of dissemination programs. The challenges that PTSD agencies have in disseminating treatments are not necessarily distinct from those of other mental health domains, or health services generally. Accordingly, efforts to disseminate EBTs for PTSD need to heed the broader literature on dissemination and the models that are available. In the current paper we will describe the status of disseminating EBTs for PTSD, beginning with a review of the evidence for the efficacy of these EBTs in treating PTSD.

Evidence-based Treatments for Posttraumatic Stress: Efficacy Studies

Several treatment programs have been found to successfully treat PTSD. The majority of these treatments are trauma-focused—that is, they deal directly with the trauma and its consequences. A comprehensive review of the evidence base for posttraumatic stress treatment studies is beyond the scope of this article. Here we focus on treatments that have garnered the most empirical support for their efficacy. Open trials—that is, ones that lack a control group and assessment of symptoms blind to treatment status—are not reviewed.

Most of the treatment programs that have substantial empirical support for their efficacy fall under the cognitive-behavioral therapy (CBT) umbrella. Despite some procedural differences across CBT programs, they share two characteristics: 1) Helping the patients confront safe trauma reminders either through discussions about the trauma or through approaching trauma-related situations or images; and 2) aiming to disconfirm patients' dysfunctional, unrealistic perceptions emerging from the traumatic experience. While CBT programs differ in the extent to which they use verbal discourse and experiential procedures to disconfirm dysfunctional cognitions, they target the same problem such as avoidance. For example, one may counter PTSD-related avoidance of objectively safe stimuli through exposure in vivo to the avoided stimuli or through systematically examining the evidence for and against one's belief that the objectively safe stimulus is dangerous. Additionally, the same intervention may be used for different theoretical reasons; for example, a traditional “behavioral” rationale for in vivo exposure is to promote fear extinction, whereas a “cognitive” rationale is to disconfirm faulty cognitions. However, contemporary learning

theories (e.g., Rescorla & Wagner, 1972) and theories of pathological anxiety (e.g., Dalglish, 2004; Foa & Kozak 1986; Foa & Cahill, 2001) view the mechanism underlying extinction as change in expectancy (i.e., disconfirmation of anticipated outcomes) which is also the target outcome for “cognitive therapy”. For a thorough review of psychological theories of PTSD and its treatment, see Cahill and Foa (2007).

We begin by reviewing the evidence for the efficacy of treatment programs that emphasize exposure (experiential) procedures, and then move to programs with a greater emphasis on verbal discourse.

Exposure Therapies

Exposure therapies are designed to reduce PTSD symptoms and related problems (e.g., depression, anger, guilt) by helping patients confront trauma-related memories, feelings, and stimuli. Exposure interventions include imaginal exposure which consists of repeated revisiting of the traumatic memory, as well as in vivo exposure which involves confronting feared situations that are objectively safe. Treatment programs that include both kinds of exposure (e.g., Prolonged Exposure; Foa, Hembree, & Rothbaum, 2007) tend to produce better outcomes compared to protocols consisting of only one of the components (e.g., Bryant et al., 2008).

Exposure therapies for PTSD have been proven efficacious in many RCTs, and thus have been recommended as a first line treatment for PTSD in several treatment guidelines (e.g., Australian Centre for Posttraumatic Mental Health, 2007; Institute of Medicine, 2007; National Collaborating Centre for Mental Health, 2005; International Society for Traumatic Stress Studies [Foa, Keane, & Friedman, 2000; Foa, Keane, Friedman, & Cohen, 2009]). Following promising results from a number of uncontrolled studies that were prompted by conditioning theory (e.g., Johnson et al., 1982, Keane & Kaloupek, 1982, Schindler, 1980) several controlled studies demonstrated that imaginal and in vivo exposure effectively ameliorate PTSD. Participants in these early studies were primarily veterans. Subsequent controlled studies with veterans demonstrated the efficacy of exposure therapy (in vivo or imaginal) for PTSD (Boudewyns & Hyer, 1990; Boudewyns, Hyer, Woods, Harrison, & McCranie, 1990; Cooper & Clum, 1989; Keane, Fairbank, Caddell, & Zimering, 1989), which led to studies with increasingly sophisticated research methodology (see Foa & Meadows, 1997) and with a variety of trauma populations. These later studies are reviewed below.

Several meta-analyses have found that exposure therapy is more effective than non-trauma focused therapies (e.g., supportive therapy) and waitlist (e.g., Bradley, Greene, Russ, Dutra, & Westen, 2005; Powers, Halpern, Ferenschak, Gillihan & Foa, 2010), but no significant differences have been detected among different exposure therapies (e.g., Bisson, Ehlers, et al., 2007; Seidler & Wagner, 2006). The Institute of Medicine (2007) committee, in their review of treatment outcome studies for PTSD, concluded that exposure therapy has sufficient evidence to support its efficacy in treating PTSD; no other treatment, including psychotropic medication and other psychotherapies, received such endorsement. For example, the committee concluded that despite many studies on the efficacy of selective

serotonin reuptake inhibitors (SSRIs) for treating PTSD, there was insufficient evidence to determine their efficacy. In addition to these efficacy data, meta-analytic data indicate that exposure therapy is associated with lower dropout rates than pharmacotherapy (Van Etten & Taylor, 1998).

Prolonged Exposure

The most commonly used exposure protocol is Prolonged Exposure (PE; Foa et al. 2007). PE is based on emotional processing theory (Foa & Kozak, 1986) which posits that anxiety disorders, including PTSD, reflect pathological fear structures in which associations among different elements do not accurately represent reality (see also Foa & Kozak, 1986; Foa & Cahill, 2001). PE is designed to correct the erroneous connections in the targeted fear structure. PTSD sufferers typically experience two key pathological cognitions: “The world is an utterly dangerous place,” and “I am completely incompetent and unable to cope with stress.”

The central components of PE are in vivo and imaginal exposure. In vivo exposure consists of gradually and systematically having patients approach situations, places, and people that they have been avoiding. Repeated exposure with these stimuli disconfirms the dysfunctional, unrealistic expectations of harm and the individual experiences a reduction in the associated fear response. Imaginal exposure involves revisiting the memory in imagination and recounting the traumatic event (which causes much distress) in a way that promotes emotional engagement with the trauma memory, followed by processing the revisiting experience. Processing provides an opportunity for patients to examine their beliefs related to the trauma memory and to gain a new perspective on the trauma. Similar to in vivo exposure, repeated and prolonged imaginal exposure provides information that disconfirms dysfunctional erroneous cognitions (e.g., if I engage with the traumatic memory rather than avoid it I will “fall apart”) and reduces distress associated with confronting the memory. Psychoeducation and controlled breathing exercises play a secondary role in PE. Psychoeducation comprises a discussion about what maintains PTSD and the reactions that commonly follow a trauma; controlled breathing training is designed to lower a person's baseline level of anxiety, which might have become heightened in part due to rapid and shallow breathing.

Many RCTs—the largest number of any psychosocial treatment for PTSD—indicate that PE effectively reduces PTSD symptoms in a wide range of populations (e.g., female rape survivors, male and female veterans, refugees; see Cahill, Rothbaum, Resick & Follette, 2009, for a full review). PE is effective for both chronic PTSD (e.g., Foa et al., 1999, 2005; Resick, Nishith, Weaver, Astin, Feuer, 2002) and acute stress disorder (Bryant, Sackville, Dang, Moulds, & Guthrie, 1999; Foa, Hearst-Ikeda, & Perry, 1995; Foa, Zoellner, & Feeny, 2006); patients treated with PE generally maintain their gains at follow-ups of a year or more (e.g., Foa et al., 2005; Resick et al., 2002). In addition, PE consistently has been associated with rapid change and maintenance of large effect sizes over time (e.g., Foa et al., 2005; Resick, Williams, Suvak, Monson, & Gradus, 2012).

PE produces significantly greater pre- to posttreatment reductions in PTSD symptoms compared to supportive counseling (Bryant, Moulds, Guthrie, Dang, et al., 2003; Schnurr et

al., 2007), relaxation training (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Taylor et al., 2003; Vaughan, Armstrong, Gold, & O'Connor, 1994), and “treatment as usual” including pharmacotherapy (Asukai, Saito, Tsuruta, Kishimoto, & Nishikawa, 2010), non-exposure-based individual psychotherapy (Boudewyns et al., 1990), and combinations of psychopharmacology, counseling, and group therapy (e.g., Nacasch et al., 2010). A similar protocol developed by Marks et al. (1998) employs imaginal and in vivo exposure sequentially, instead of concurrently. Two RCTs have used that protocol and both found that it was highly effective (Marks et al., 1998; Taylor et al., 2003).

Programs That Combine PE With Other CBT Procedures

Many treatment programs have combined PE with other CBT procedures. In general, the addition of these techniques does not enhance the efficacy of PE. For example, Foa et al. combined PE with Stress Inoculation Training (1999) and cognitive restructuring (2005); neither combination was more effective than PE alone. Other protocols have added components to PE but did not test the more complex treatment program against PE. For example, Blanchard et al. (2003) developed a manualized exposure therapy protocol for survivors of motor vehicle accidents (MVA) with PTSD. This treatment, called CBT-MVA, includes in vivo exposure, progressive muscle relaxation, cognitive restructuring, one session of couples therapy (if the patient has a partner), and one session focusing on anger or existential issues stemming from the accident. While this treatment was more effective than supportive counseling and waitlist, it is not clear that there was sufficient justification for the additional treatment components. One study that appeared to enhance PE's effectiveness compared the combination of imaginal and in vivo exposure to imaginal and in vivo exposure plus cognitive restructuring (Bryant et al., 2008); the effect size for the treatment that included cognitive restructuring was larger than for the treatment that omitted cognitive restructuring. It is important to note, however, that the relatively greater efficacy may have been caused by omitting the processing component from the imaginal plus in vivo condition, resulting in a less effective treatment compared to full PE.

Other Exposure Treatment Programs

RCTs have shown that other variations of exposure therapy are efficacious. In a dismantling study by Resick et al. (2008), Cognitive Processing Therapy (CPT; see section on Cognitive Therapies, below) was compared with its components: cognitive therapy only and written exposure. At the end of treatment, the written exposure group did nearly as well as the CPT group, but no significant differences among the three groups were detected at 6-month follow-up. Similarly, van Emmerik, Kamphuis, & Emmelkamp (2008) found that structured writing therapy was as effective as cognitive therapy (CT) in reducing PTSD symptoms when both were compared to WL. These data suggest that written exposure combined with therapist involvement is an effective intervention for PTSD.

Other treatment programs that have an exposure component include Cognitive Trauma Therapy for Battered Women with PTSD (CTT-BW; Kubany, Hill, & Owens, 2003; Kubany et al., 2004) and Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 1989a, 1989b). In EMDR, exposure is combined with bilateral eye movements (Shapiro, 2001); the patient holds a disturbing image or memory in mind (including associated emotions and

cognitions) while simultaneously attending to an external stimulus, such as the clinician's finger as it moves back and forth in front of the patient's visual field. The role of bilateral eye movements in this treatment has been called into question, as replacing them with other external stimuli, such as finger tapping (Pitman, Orr, Altman, & Longpre, 1996b) or eliminating them altogether (Boudewyns & Hyer, 1996; Boudewyns et al., 1993; Davidson & Parker, 2001; Spates, Koch, Cusack, Pagoto, & Waller, 2009) has little effect on outcome.

Given the efficacy of EMDR and the lack of support for the external stimuli component, many experts have suggested that EMDR is an efficacious treatment for PTSD because of the elements it shares with other successful treatments, such as PE and CPT. Specifically, like PE and other exposure therapies EMDR includes exposure and emotional processing components. Similar to CPT and other cognitive therapies, EMDR involves correcting the patient's excessively negative appraisals of the traumatic event and self-monitoring of cognitive and emotional responses. Whatever the therapeutic mechanism, some RCTs found EMDR to be of comparable efficacy to PE (e.g., Power et al., 2002) while other studies found PE to be superior to EMDR (Taylor et al., 2003). One set of treatment guidelines concluded that EMDR was only as effective as PE when in vivo exposure was added to the standard EMDR protocol (Forbes et al., 2007).

Safety of Exposure Therapies

Some commentators have suggested that PE may pose a risk to some patients because the distress elicited by focusing on the trauma memory may exacerbate PTSD symptoms (Kilpatrick & Best, 1984); the view that PE may cause symptom worsening has been used to argue against the dissemination of PE. It is important to note that the only evidence for this argument comes from few case studies (Pitman et al., 1991; but see Pitman, Orr, Altman, & Longpre, 1996a; Vaughan & Tarrier, 1992). In contrast, when one studies the results of large controlled trials, there is no evidence that PE is associated with a relative increase in adverse side-effects. For example, Foa and colleagues reported that PE was not associated with symptom exacerbation (Foa, Zoellner, Feeny, Hembree, & Alvarez-Conrad, 2002). Further, a review of 25 studies of exposure-based therapy for PTSD found that dropout from treatment was no different among those receiving PE than those receiving to other forms of treatment, including cognitive therapy, stress inoculation training, or EMDR (Hembree et al., 2003). Overall, PE appears comparable to other psychosocial treatments in terms of its safety and acceptability to patients. Moreover, PE is more acceptable to patients than medication (Feeny, Zoellner, Mavissakalian, & Roy-Byrne, 2009).

Summary

There is ample evidence for the effectiveness of exposure-based treatments for PTSD, with PE supported by the greatest number of carefully controlled treatment studies conducted by independent centers around the world with greatest diversity of trauma populations. With one exception (Bryant et al., 2008), the addition of components to PE did not augment its effectiveness. We now turn our attention to CBT programs that emphasize cognitive treatment components.

Cognitive Therapies

Cognitive Therapy (CT; Beck, Emery, & Greenberg, 2005) is a treatment protocol in which the therapist helps the patient identify and modify maladaptive cognitions that are believed to underlie pathological symptoms. In PTSD treatment, the target cognitions are related to a traumatic experience (e.g., survivor guilt, self-blame for causing the trauma, feelings of personal inadequacy, worries about the future). Several RCTs have shown the efficacy of CT in reducing PTSD symptoms and improve functioning (Cottraux et al., 2008; Marks et al., 1998; Resick et al., 2008; Tarrier, Sommerfield, Pilgrim, & Humphreys, 1999).

Several CT programs included exposure components. Cognitive Processing Therapy (CPT; Resick et al., 2002) is a manualized treatment combining aspects of both CT and exposure to help patients challenge problematic cognitions. A central component of this treatment is the creation of a detailed written account of the trauma, which is read in session and at home. Four RCTs (Chard, 2005; Monson et al., 2006; Resick et al., 2002; Resick et al., 2008) have found CPT to be efficacious in a variety of populations (female survivors of physical and sexual assault and sexual abuse in childhood; male and female veterans; male and female refugees).

Ehlers and Clark (2000) developed a CT protocol that builds on their model of PTSD. According to this model, people with PTSD perceive a current threat due to excessive negative appraisals of the trauma and its sequelae, and to characteristics of trauma memories that lead to reexperiencing. Ehlers and Clark's (2000) protocol, which includes imaginal and in vivo components, aims to reduce reexperiencing symptoms via elaboration of trauma memories and identification of triggers, and helps patients eliminate dysfunctional behaviors and cognitive strategies. This program has been found to be efficacious in three RCTs (Duffy, Gillespie, & Clark, 2007; Ehlers et al., 2003; Ehlers, Clark, Hackmann, McManus, & Fennell, 2005).

Comparison of CBT Treatment Programs for PTSD

Comparative treatment studies generally have not found significant differences between EBTs for PTSD. PE has been found to be at least equally efficacious as other forms of CBT, such as Cognitive Processing Therapy (Resick et al., 2002; Resick et al., 2008) and cognitive therapy (Bryant et al., 2003; Bryant et al., 2008; Marks et al., 1998), as well as EMDR (Power et al., 2002; Rothbaum, Astin, & Marsteller, 2005). See Benish, Imel, and Wampold (2008) and Powers et al. (2010) for meta-analytic reviews of these findings.

Targeting More Treatment-Resistant Populations

PE has often been criticized on the grounds that people who have difficulties tolerating distress may not be able to manage the emotional demands of PE, and therefore will not benefit from PE (for discussion, see Herman, 2001; Neuner et al., 2008; Silove, 1996; Silove, Tarn, Bowles, & Reid, 1991). These cases, often called "complex PTSD," can be conceptualized as more severe cases of PTSD or more comorbid cases in which the patient has marked difficulties with emotion regulation, leading to strong mood swings, difficulty stabilizing emotional reactions, impulsive behaviors, self-harm, and difficulties with

interpersonal relationships (Cloitre, Miranda, Stovall-McClough, & Han, 2005). These presentations are frequently seen in survivors of torture, prolonged trauma, or childhood abuse.

Although there is evidence that survivors of childhood abuse can benefit from exposure-based treatments (McDonagh et al., 2005; Resick et al., 2008; Foa, 2011), recent attempts to address the needs of patients with more severe or comorbid PTSD have been explored. To compensate for the identified difficulties these patients have in emotion regulation, one approach has prepared patients for PE by teaching them skills in distress tolerance, labeling emotions, and emotion management. Two randomized trials have demonstrated that this modified form of PE is efficacious in treating these patients, and there is no evidence that it is more effective for these patients than is standard PE (Cloitre et al., 2010; Cloitre, Koenen, Cohen, & Han, 2002). This development suggests that PE can be extended to clinical environments where PE has traditionally not been implemented because of concerns that it may not be tolerated by individuals with more complicated PTSD presentations.

Application of EBTs for Acute Stress Disorder/Acute PTSD

With the success of CBT in treating chronic PTSD, numerous teams have aimed at secondary prevention for PTSD by providing exposure and cognitive therapy strategies in the initial weeks or month after trauma exposure. Researchers have developed interventions for use within the first 4 weeks after an index trauma with the aim of reducing the probability of developing chronic PTSD. The dissemination of these early EBTs is at least as crucial as dissemination of treatments aimed at ameliorating chronic PTSD as they can prevent suffering associated with chronic PTSD and related comorbidities. Most of these trials have abridged longer therapy of nine to 12 sessions to four to six sessions, and have focused on trauma survivors with ASD or with severe PTSD symptoms within the first month. The single common factor across these interventions for ASD/severe initial PTSD is the use of trauma-focused exposure approach that has involved imaginal and/or in vivo exposure.

Taken together, there is evidence that PE or PE combined with cognitive restructuring (sometimes called CBT) provided within a month of trauma exposure reduces the incidence of PTSD relative to nondirective counseling (Bryant, Harvey, Dang, Sackville, & Basten, 1998; Bryant et al., 2008; Bryant, Moulds, Guthrie, & Nixon, 2003; Bryant, Moulds, Guthrie, & Nixon, 2005; Bryant et al., 1999). These treatment gains have been shown to maintain up to 4 years after treatment (Bryant et al., 2006; Bryant, Moulds, & Nixon, 2003). Reinforcing the conclusion that PE is important in enhancing recovery, one study found that patients with ASD who received PE enjoyed better long-term reduction in PTSD symptoms than those who received CT (Bryant et al., 2008). Additionally, providing CBT to trauma survivors with acute PTSD in the initial months after trauma exposure results in reduced levels of PTSD at subsequent time points (Bisson, Shepherd, Joy, Probert, & Newcombe, 2004; Ehlers et al., 2003; Lindauer et al., 2005) or accelerated recovery (Foa et al., 1995; Foa et al., 2006). Overall, the evidence indicates that exposure-based therapies result in comparable outcome as reported in chronic PTSD, and that exposure therapy is indicated for early intervention with people with both ASD/early severe PTSD symptoms/acute PTSD.

Summary of Efficacy of EBTs for Posttraumatic Stress

Several treatment programs have been highly efficacious and effective in the treatment of PTSD and related conditions. These programs are relatively time-limited (generally 8 to 15 sessions) and are associated with large effect sizes (Powers et al., 2010). They have been tested and found to be efficacious for PTSD related to a wide range of traumatic events. In the next section we examine the extent to which mental health clinicians are using the most effective treatments for serious mental disorders including PTSD.

Current Use of EBTs for PTSD by Mental Health Clinicians

Despite the availability of highly effective, short-term treatments for PTSD, the majority of mental health clinicians do not use them consistently. Becker, Zayfert, and Anderson (2004) surveyed randomly selected licensed psychologists from three states, more than half of whom (58%) were in private practice. Eighty-three percent of the sample reported that they had never used imaginal exposure when treating patients with PTSD. When asked what other trauma-focused interventions they used in treating PTSD, 15% of the therapists indicated the use of psychodynamic trauma-focused treatment, 11% in vivo exposure, 7% cognitive behavioral intervention (e.g., cognitive restructuring), 7% EMDR, and 3.5% hypnosis. These results demonstrate that the vast majority of licensed psychologists do not use a treatment procedure that has received substantial empirical support. Furthermore, the treatment used most frequently (psychodynamic therapy) had at best scant evidence for its efficacy.

Becker et al. (2004) also surveyed a sample of members of the Disaster and Trauma Special Interest Group (D&T SIG) of the Association for Advancement of Behavior Therapy (AABT, since renamed the Association for Behavioral and Cognitive Therapies). Including this second group allowed the authors to compare the practices of psychologists in general to the practices of individuals who tended to be CBT-oriented and to have training in exposure therapy. The majority of the D&T SIG group worked in university or medical settings (72%). Despite their CBT orientation, more than a third (34.5%) of the D&T SIG sample reported never having used imaginal exposure in the treatment of PTSD. These results are particularly striking given that more than 93% of participants in the D&T SIG sample reported having been trained in imaginal exposure.

Mental health clinicians in the VA medical system also have tended to use EBTs infrequently in their work with veterans with PTSD, at least historically. A survey about practice patterns conducted in 1999 and repeated in 2001 revealed that among clinicians identified as “PTSD specialists” (i.e., work in programs that specialize in PTSD and/or have particular expertise in PTSD), fewer than 10% reported that they “routinely” used repeated in vivo or imaginal exposure with their patients (Rosen et al., 2004). These findings underscored the need to increase the use of EBTs with veterans in the VA system, which led to major dissemination initiatives in the VA system (see below).

The infrequent use of EBTs, including PE, for the treatment of PTSD led some researchers to investigate the factors that drive therapists' decisions about whether they will use exposure therapy. Van Minnen, Hendriks, and Olff (2010) randomly assigned trauma

experts to review PTSD treatment cases and determine which interventions they would be likely to use; options included imaginal exposure to the trauma, EMDR, medication, and supportive therapy. The researchers varied whether the patient had comorbid depression, whether the trauma was a single incident in adulthood versus multiple childhood traumas, and whether the patient expressed a treatment preference. The results confirmed earlier findings that therapists were least likely to use imaginal exposure among the possible treatments. Importantly, the degree of training in imaginal exposure was significantly associated with its use. Van Minnen et al. also reported that therapists were more concerned about negative effects of imaginal exposure when the patient had multiple childhood traumas, which is in line with therapists' concerns about harming these "more complex" patients through the use of imaginal exposure (cf. Becker et al., 2004).

The lack of use of EBTs by mental health practitioners is not unique to PTSD, and is also the case for psychological disorders in general, including the anxiety disorders where there is a vast empirical literature on efficacious treatments. More gravely, the use of EBTs for anxiety disorders may even be decreasing, despite the continually growing body of knowledge about the efficacy of EBTs. In 1991, and then again in 1995-1996, Goisman, Warshaw, and Keller (1999) asked patients with anxiety disorders whether they had received behavioral, cognitive, psychodynamic or relaxation/meditation treatment. The percentage of patients receiving behavioral therapy fell from 19% to 11% and those receiving cognitive therapy fell from 18% to 16%. Psychodynamic therapy, which has relatively little empirical support compared to behavioral and cognitive therapies, was the most commonly reported treatment modality at both time points: 40% in 1991 and 33% in 1995-1996.

A similar picture emerged from a survey of randomly selected licensed psychologists in Minnesota who also showed low utilization of EBTs for anxiety disorders, including obsessive-compulsive disorder (OCD), panic disorder, and social phobia (Freiheit, Vye, Swan, & Cady, 2004). Respondents indicated whether they used different interventions never/rarely, occasionally, sometimes, or frequently. For OCD a minority of clinicians (38%) reported frequent use of Exposure and Ritual (Response) Prevention, the most studied EBT for OCD (Foa, Yadin, & Lichner, 2012); a similar percentage of therapists reported frequent use of relaxation training (41%), an intervention that has been found to be relatively ineffective with this population (Greist, Marks, Baer, & Kobak, 2002; Marks et al., 1975).

A recent study presents a somewhat more encouraging picture. Berke, Rozell, Hogan, Norcross, and Karpiak (2011) surveyed psychologists about their use of evidence-based practice (EBP), which the APA (2006) defines as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences." Based on this definition, the respondents reported providing EBP approximately 73% of the time. Approximately a third of the sample reported that 100% of their services fit the definition of EBP. However, this study is not very informative because the definition is open to different interpretations of what constitute practice of EBP. At one end of the continuum it could mean using a treatment program that has been found to be superior to treatment as usual in multiple RCTs; at the other end it could simply mean providing a warm and empathic relationship, given the demonstrated association between therapeutic alliance and treatment outcome (Martin, (Garske & Davis, 2000)

A survey about providers' knowledge and use of EBTs included treatment providers in community settings, all of whom worked in agencies that were affiliated with a federal program to improve mental health care for children (Walrath, Sheehan, Holden, Hernandez, & Blau, 2006). Results indicated that familiarity with EBTs was generally high; on average, 87% of providers were familiar with each EBT. Use of EBTs also was reported to be relatively high, with providers reporting that they used EBTs with approximately 78% of their clients. However, use of the full EBT protocols was relatively infrequent. For example, while 62% of providers said that they used CBT with their clients, only 36% reported using the full treatment protocol. These findings show that knowledge about EBTs alone is not sufficient to promote their use.

In a large survey of North American psychologists, respondents indicated that empirical evidence had relatively little influence on their clinical practice (Cook, Schnurr, Biyanova, & Coyne, 2009). The most frequently endorsed factors influencing current practice were significant mentors, books, graduate school training, and informal discussions with colleagues. Therapists were more willing to learn a new treatment if they felt it could be integrated with their current practice, and if it was endorsed by therapists they respected. Similarly, in a survey of psychologists in independent practice (Stewart & Chambless, 2007) respondents indicated that they did not usually use treatment materials informed by research findings on empirically supported treatments. In addition, psychologists rated past treatment experience as most informative for current treatment decisions.

Since factors such as past treatment experience, conversations with colleagues, and clinical intuition appear to play an important role in informing clinical practice, Gaudiano, Brown and Miller (2011) conducted an Internet-based survey to assess the relationship between intuitive thinking style and EBP attitudes among psychologists from diverse professional backgrounds. Regression analyses showed intuitive thinking style to be associated with several dimensions of attitudes toward EBP, including negative attitudes towards research, less openness to research-based treatments, and less willingness to use EBTs if required to do so (even when controlling for background factors, such as education level). Reliance on intuition was also associated with more positive attitudes towards alternative therapies and endorsement of erroneous health beliefs.

The convergent finding that most mental health practitioners do not routinely use PE in their treatment of PTSD patients is concerning and needs to be understood in the context of the dissemination models described above. It appears from the survey data collected from clinicians, including those who have been trained in EBTs, that common barriers to the dissemination of PE have been described in adopter models of dissemination. Specifically, the influence of respected role models, peer group opinion, perceived fit of PE with one's clinical environment, and belief that the outcomes of RCTs may not be applicable to patients who regularly present at one's clinic, appear to be more critical in determining adoption of PE than awareness of the scientific value of PE as the optimal means of reducing PTSD symptoms. These observations offer clues about the factors that need to be considered in the context of a staged dissemination model to effectively disseminate PE.

Can Therapists Learn to Deliver EBTs Successfully?

One possible explanation for why therapists often do not use EBTs is that perhaps these treatments are too complicated for non-experts to learn and use. However, evidence against this hypothesis comes from examples of dissemination of PE for PTSD to community centers in the US and abroad. For example, Foa and colleagues at the Center for the Treatment and Study of Anxiety (CTSA) in Philadelphia trained community therapists at Women Organized Against Rape (WOAR) and found that these therapists were as effective in their delivery of PE as were therapists at CTSA (Foa et al., 2005). This finding is striking given that the study compared the efficacy of the treatment development team to community-based therapists who had minimal prior experience in delivering manual-based CBT interventions. Community-based therapists have produced similar results in their delivery of PE for PTSD in Japan (Asukai et al., 2010) and Israel (Nacasch et al., 2010) and achieved outcomes far superior to treatment as usual. These examples and others are discussed in greater detail below in the section on “Meeting the Global Need” and demonstrate that PE is readily adaptable to community settings with non-expert clinicians.

Additional work has shown that EBTs generally are effective outside of the carefully controlled confines of research, suggesting that non-experts are able to deliver EBTs effectively. Stewart and Chambless (2009) meta-analyzed the results from effectiveness studies of CBT for adult anxiety disorders—that is, treatment studies that were conducted under more real-world circumstances than are efficacy studies. The pretest-posttest effect sizes generally were large and of similar magnitude as found for efficacy trials for the same disorders. OCD studies, for example, had an average pre-post effect size of $d = 1.32$, and PTSD studies had an effect size of $d = 2.59$. Effect sizes were marginally smaller when certain features of RCTs were not part of the trials—for example, when patients were not randomized to treatments ($d = 0.11$) or when there was no training for therapists ($d = -0.31$). All these effects were small, indicating that more clinically representative settings do not result in large reductions in the effectiveness of CBT programs for anxiety. Given that treatment outcomes of effectiveness studies are similar to those of RCTs and that therapists who are not experts in EBTs can learn and deliver them effectively, we must look elsewhere for reasons for why many clinicians do not use EBTs.

Barriers to Widespread Adoption of EBTs in Community Practice

Multiple barriers prevent the delivery of EBTs; it is essential to know the common barriers to dissemination so that they can be successfully addressed in the various dissemination steps. These barriers include a professional culture that does not support the use of EBTs, lack of clinician training in EBTs, limited effectiveness of commonly used dissemination techniques, and the cost associated with effective dissemination models. We will examine each of these barriers which are associated with the various dissemination phases reviewed earlier. We provide arguments and evidence that counter widely held negative attitudes about EBTs which constitute barriers for their dissemination. This information can be used by dissemination proponents during the planning and communication phases of dissemination efforts.

Professional Culture That Does Not Support the Use of EBTs

One important barrier involves the view by many mental health professionals of what constitutes psychotherapy, which is often at odds with EBTs. It seems that many therapists believe that “good” psychotherapy is creative, individualized, and should target purportedly etiological problems in the patient's life. One shared assumption in traditional psychotherapy is that understanding the origins of one's problems and symptoms, such as difficult childhood relationships with parents, is essential for successful therapy outcome. Thus, psychotherapy is seen as an intricate process of collaboration between the patient and the therapist, whose goal is to maximize well-being and happiness via exploring multiple aspects of the patient's inner life and experiences and increasing insight and self-understanding. As noted by Barlow (2004), there is a “long and distinguished tradition” of “psychotherapy for the promotion of better adjustment, resolution of problems in living, or personal growth” (p. 871).

In contrast to this rich, holistic view of psychotherapy, EBTs can be seen as narrow and boring as they focus on a narrow set of symptoms that render the patient extremely distressed and dysfunctional and make these symptoms the target of treatment. One can understand the reluctance of therapists, who likely chose their profession because of their deep interest in the human psyche, to abandon the profoundness inherent in traditional psychotherapy in favor of what seems to be a dull, limited treatment, even if it frees patients from deep distress.

Part of the culture that does not embrace EBTs is related to theoretical orientation, which can have a significant impact on the extent to which clinicians use EBTs. For example, Stewart and Chambless (2008) found that when faced with a patient who was not improving, psychodynamic practitioners were roughly half as likely as cognitive-behavioral respondents to use treatment materials based on research findings (28 vs. 51%, respectively). The greater willingness of cognitive-behavioral therapists to use EBTs may be due in part to the fact that the majority of EBTs are cognitive-behavioral in approach. However, there is no reason in principle why other approaches, including psychodynamic treatments, could not achieve EBT status if they were studied and found to be efficacious.

It is critical that dissemination efforts address likely barriers that stem from this professional culture, which can permeate all phases of dissemination. For example, in the planning phase (see Table 1) innovators need to assess the theoretical orientation of the treatment providers and their attitudes toward the proposed innovation, and develop ways to overcome resistance that may emanate from the providers' orientation. Similarly during the implementation phase it may be important to address allegiance to existing practices that might hinder organizational change.

Questioning the Validity of Findings from Psychotherapy RCTs

Another barrier to adopting EBTs is some experts' assertion that findings from RCTs are irrelevant to clinical practice; identifying and addressing the validity of this belief can be a crucial component of the planning and communication phases. An early proponent of this view is Seligman (1995), who put forward several arguments to support this assertion (see

also Goldfried & Wolfe, 1996; Howard, Moras, Brill, Martinovich, & Lutz, 1996). Notably, the belief that RCTs and therefore EBTs are irrelevant to psychotherapists has persisted despite ample empirical results that failed to support these objections to RCTs (see Barlow, Levitt, & Bufka, 1999, for a discussion). The view that results from RCTs are irrelevant to clinicians rests on the premise that psychotherapy as it is practiced in the community is fundamentally different from the way treatment is delivered in RCTs because the latter sacrifice external validity in favor of internal validity. Specifically this view asserts that: 1) RCT research samples are rarified and therefore do not represent the population of treatment seekers in the real world (e.g., Persons & Silberschatz, 1998; Westen & Morrison, 2001); 2) patients in the community choose their treatment rather than being randomly assigned to specific treatment (e.g., Seligman, 1995); 3) the goal of treatments in community practice is to improve general functioning of patients whereas in RCTs the goal is to reduce a narrowly defined range of symptoms (e.g., Westen, Novotny, & Thompson-Brenner, 2004); and 4) treatments delivered in the community tend to be flexible compared to the highly structured treatments used in the typical RCT (e.g., Persons & Silberschatz, 1998; Westen et al., 2004). Below we discuss the soundness of each of these assertions.

Are RCTs Samples Rarified?—Several psychotherapy experts have suggested that patients included in RCTs are different in important ways from patients treated in the community. Below we will examine the validity of these contentions with an emphasis on the anxiety disorders and in particular on PTSD.

First, RCTs for anxiety disorders in general, including PTSD, do include patients with comorbidities, which defy the claim that the RCT samples are “pristine.” For example, the PE trial by Foa et al. (2005) excluded only diagnoses of organic mental disorder, psychotic disorders including schizophrenia, unmedicated symptomatic bipolar disorder, and current substance dependence. Notably, two out of three patients had at least one comorbid disorder, most commonly major depression (41%) or another anxiety disorder. Similarly, Resick et al. (2002) in their study comparing CPT and PE excluded only diagnoses of current psychosis, developmental disabilities, or current dependence on drugs or alcohol; they also reported high rates of comorbid depression in both the CPT (46%) and PE (53%) groups. It is worth noting that most RCTs of trauma-focused psychotherapy for PTSD have used these exclusion criteria to maintain the safety of these severely disturbed patients, and “real world” clinics use similar caution when treating these patients; that is, the RCTs' exclusion criteria actually reflect typical clinical practice when applying these treatments to patients, rather than being imposed by researchers for reasons other than ensuring that the treatment is adequate and safe for the patients.

Second, evidence supporting the relevance of RCTs to patients in the community comes from several studies showing that the presence of comorbidity *does not* impede treatment success. Several studies have found that depression symptoms are not associated with PE outcome (e.g., Hageraars, van Minnen, & Hoogduin, 2010). Borderline personality disorder, which has been thought to impede effects of treatment of anxiety disorders (Merrill & Strauman, 2004), has little effect on the outcome of EBTs for PTSD (Clarke, Rizvi, & Resick, 2008; Feeny, Zoellner, & Foa, 2002; Zlotnick, Franklin, & Zimmerman, 2002). Similarly, Hembree, Cahill, and Foa (2004) found that PE patients with any comorbid

personality disorder showed reduction in PTSD severity similar to patients without a personality disorder. Similar outcomes have been found for panic disorder (Brown, Antony, & Barlow, 1995) and generalized anxiety disorder (Borkovec, Abel, & Newman, 1995).

Third, even in studies that found comorbidity to affect outcome, individuals with comorbidity still benefited significantly from treatment, albeit not as much as those without the comorbidity. For example, Hagenaars et al. (2010) found that individuals with current comorbid depression had higher PTSD scores at baseline than did individuals without depression; thus although the comorbid group experienced similar reductions in PTSD symptoms, their relatively higher PTSD scores persisted at posttreatment. Similar results were found by Foa et al. (in preparation).

Fourth, perhaps the most direct evidence for the applicability of findings from RCTs to community practice come from studies showing that EBTs delivered in the community produce effect sizes similar to those obtained in RCTs. For example, Wade, Treat, and Stuart (1998) found that CBT for panic delivered in a community mental health center produced treatment gains comparable to those found in two efficacy studies (Barlow, Craske, Cerny, & Klosko, 1989; Telch, Lucas, Schmidt, & Hanna, 1993). In the meta-analysis discussed earlier, Stewart and Chambless (2009) reported large effect sizes from effectiveness studies that were of similar magnitude as those obtained from efficacy studies (e.g., pre-post effect size for PTSD, $d = 2.59$, vs. 1.92 for PE completer sample in Foa et al., 1999). The fact that variants of exposure therapy were found to be effective in clinics around the world (e.g., US, Canada, Spain, UK, Australia, Sweden, the Netherlands, Israel), with different trauma populations (e.g., survivors of rape, assault, motor vehicle accidents, torture), and with diverse samples (e.g., race, socioeconomic status, comorbidities) can be viewed as supporting the direct applicability to community practice of treatments that demonstrated efficacy in RCTs.

A novel approach to address the question of whether RCTs samples are representative of community patients used a review of the clinical charts of patients from a large managed behavioral healthcare company (Stirman, DeRubeis, Crits-Christoph & Brody, 2003). The results indicated that according to the diagnoses in the charts, 80% of the patients would have been eligible to be included in at least one RCT which had been studies in the RCT literature. This finding provides strong evidence against the assertion that participants in RCTs differ fundamentally from patients in community practice. The most common reason that patients would have been deemed ineligible for an RCT in the Stirman et al. (2003) study was insufficient illness severity or duration (10%); in contrast, only 1 patient of 146 (0.7%) would have been ruled out due to being too severe. These finding strongly defies the claim that patients in RCTs represent a less severe population, and support the view that treatments which help patients in RCTs are likely to benefit patients in community settings. It is important to note, however, that 58% of the patients in the clinical sample had primary diagnoses that had not been investigated in the RCT literature, most commonly an adjustment disorder (29%) and dysthymia (9%). This finding points to the need for additional research on these and other neglected patient populations and how to treat them effectively to provide empirical data to guide clinicians' choice of interventions.

In summary there is evidence that the patients in RCTs are representative of patients treated in community practice. Patients in RCTs for anxiety disorders tend to have high rates of comorbid diagnoses, and these comorbidities generally do not impede treatment success. Indeed, effectiveness studies, which are representative of community practice, generally report effect sizes of similar magnitude as those found in efficacy studies. Even if patients in community practice represented a more severe population than those found in RCTs, a crucial question to consider is whether it would make sense to withhold a well-tested form of treatment from these individuals in favor of an untested or ad hoc version of therapy. Given that individuals with comorbid disorders are likely to benefit from EBTs, it would seem that EBTs are the *treatment of choice* for patients with more severe psychopathology.

Treatment Choice—Another argument by those who challenge the validity of findings from RCTs is based on the random assignment to treatment condition that is definitional to RCTs. Because individuals in the community choose their treatment, the argument goes, the random assignment of individuals to treatment condition invalidates the findings from RCTs. However, this argument assumes that patients are knowledgeable about the treatments that are available, which often is not the case. We contend that patients choose treatments largely based on referrals from doctors or friends and not necessarily based on the knowledge of what treatment should be given and often without knowing what treatment they will receive from the therapist to whom they are referred. Thus, in reality a patient chooses a therapist, not a treatment. Therapists in general have allegiance to a given tradition and are not knowledgeable about a wide array of treatments; thus therapists are not likely to present their patients with options.

In fact, there is some evidence that patients in “real life” often do not get to choose their preferred treatments. For example, individuals with OCD would prefer exposure therapy, but patients tend to receive medication more often than psychotherapy (e.g., Olfson, Marcus, Wan, & Geisler, 2004). The same has been found for PTSD; although most patients when asked say that they would prefer to receive PE rather than sertraline (Zoellner, Feeny, Cochran, & Pruitt, 2003), patients in the community are more likely to receive medication for their PTSD (e.g., Harpaz-Rotem, Rusenheck, Mohamed, & Desai, 2008; Spont, Murdoch, Hodges, & Nugent, 2010). Therefore random assignment to treatment condition in RCTs does not appear to represent a significant deviation from how patients are matched to treatments in the community.

General vs. Narrow Improvement—Seligman (1995) and others argue that while RCTs are concerned with clinical improvement along a narrow dimension of psychopathology—namely, the target of the treatment—therapists in practice are concerned with improvement in their patients' general functioning. While it is true that the primary outcomes for RCTs are diagnoses and/or symptom severity scores on the disorder of interest, many RCTs also include a more diverse set of outcomes. For example, Foa et al. (2005) in their RCT for PTSD examined the additional outcomes of depression and social adjustment; other RCTs also included measures of global improvement (e.g., Barlow, Foa, & Livanou, 2007), work and social adjustment (e.g., Barlow et al., 2007; Difede et al., 2007; Talbot et al., 2011), and overall mental health-related functioning (e.g., Talbot et al., 2011). Thus

although RCTs initially may have focused on a narrow range of clinical outcomes, RCT outcomes now are more likely to comprise a broader range.

Flexible vs. Rigid Treatments—In a 1998 point-counterpoint article, Persons & Silberschatz argued that the highly structured nature of treatments tested in RCTs (e.g., set number of sessions) renders them fundamentally different from treatments in clinical practice that involve more flexibility and tailoring of treatments to patients (e.g., variable number of treatment sessions based on patient response). This argument is fundamentally flawed because it presumes that the treatment is fully dependent on the number of sessions provided. In fact, in a proper evaluation of any treatment it is essential to standardize the number and intensity of treatments for one to conclude that the treatment approach is efficacious. This does not support the conclusion that every application of this treatment must adhere to the number of sessions used in the treatment trial.

Persons & Silberschatz (1998) further argued that treatment manuals may prioritize the delivery of specific therapeutic techniques at the expense of important variables like the therapeutic alliance. This view reflects a common, yet mistaken, view that equates a manualized treatment with a rigid, one-size-fits-all form of therapy. Manuals allow for flexibility within a structured treatment. Some manuals used in RCTs are not session-by-session descriptions of a treatment but rather general guidelines and techniques (e.g., cognitive therapy for depression; Beck, Rush, Shaw, & Emery, 1979). Many RCTs feature a flexible number of sessions depending on response to treatment; for example, Foa et al. (2005) provided an additional 3 sessions to patients who had not met a specified threshold of improvement. In fact, some manuals even build in examples of how to tailor the treatment to the individual patient; the PE manual (Foa, Hembree, & Rothbaum, 2007), for example, provides guidelines for how to deal with avoidance, not doing homework, under- or overengaging emotionally with the traumatic memory (i.e., too much or too little distress during revisiting the traumatic memory), and more. Therefore the characterization of EBTs as unbending in the face of individual patient needs overlooks the substantial customization to the individual patient that is part and parcel of these treatments.

To summarize, some of the arguments put forward against the relevance of RCTs to clinical practice were justified in some earlier RCTs. As the field has progressed over the last decade, however, it is clear that available evidence does not support the arguments about the inapplicability of RCT findings to community practice. RCT samples seem to be representative of patients in the community, including patients with comorbid Axis I and II diagnoses; with regard to the criticism that patients in RCTs cannot choose their treatment, patients in the community also do not generally “shop” for their preferred form of treatment but rather tend to be treated with whatever form of psychotherapy is provided by the clinician to whom they are referred, and many do not have a preferred treatment. In the last decade, RCTs are investigating a broader range of outcome variables in addition to symptom improvement for the target disorder; and the characterization of EBTs that were tested in RCTs as rigidly adherent to a manual at the expense of the necessary human elements in therapy (e.g., warmth, empathy) is not accurate. Nevertheless, these objections to findings from RCTs persist in the face of limited evidence to support them. The persistence of these views may be related to the professional culture, described above, that is resistant to

modifying the traditional assumptions about what psychotherapy is. As such, addressing these often tenacious beliefs during the various phases of dissemination can pave the way for more successful dissemination and implementation efforts. In the next section we discuss another persistent objection to EBTs that is also based on limited empirical support—that all forms of psychotherapy are equally effective.

Challenging the Superiority of EBTs Over General Psychotherapy

The arguments against the use of EBTs, presented above, questioned the relevance of these treatments to community practice. A different objection to EBTs comes from challenging their unique effects on the target symptoms. The claim here is that EBTs examined in RCTs are not superior to other forms of psychotherapy practiced in the community. Several authors have argued that there are no significant differences among psychotherapies and that psychotherapy is effective because of “common factors” that cut across the many schools of therapy. Saul Rosenzweig first proposed in 1936 that different psychotherapies share so many implicit factors in common, that comparisons among them would reveal only small differences in their outcomes. Rosenzweig's hypothesis was supported by Luborsky, Singer, and Luborsky's (1975) review of 100 treatment studies which found a trend for relatively small differences in the outcomes of different treatments. The belief that EBTs are no better than unstudied types of psychotherapy needs to be addressed up front; otherwise it is likely to interfere with dissemination efforts throughout the phases of dissemination.

More recently Bruce Wampold and colleagues have taken up the common factors approach, suggesting that the “active” ingredients in psychotherapy are the ones that cut across theoretical approaches: therapist-client alliance, the therapist's allegiance to a particular orientation, and therapist effects (Messer & Wampold, 2002). This conclusion is based on studies like that of Wampold et al. (1997), who conducted a meta-analysis on the results from treatment outcome studies and found no overall significant differences between treatments. The conclusion that all treatments are equally effective—dubbed the “dodo bird verdict” (Luborsky et al., 2002; Rosenzweig, 1936) after the Dodo in Lewis Carroll's (1865) *Alice in Wonderland* who said that “Everybody has won and all must have prizes”—casts doubt on the importance of disseminating EBTs; after all, if no treatment is superior to another, then it does not matter which treatment patients receive.

Before discarding the value of EBTs, it is imperative to examine the studies on which this verdict was based and to determine what the lack of treatment differences reflects. One possibility, and the only damning one for the EBT movement, is that EBTs are not superior to other treatments that focus on promoting the common factors such as client-therapist alliance and do not use specific techniques that were developed to directly target a given psychopathology (e.g., exposure and response prevention for OCD). In fact, the equivalence results cited by proponents of the “dodo bird verdict” generally arise in one of two ways: either by including several relatively weak treatments in the analysis, thereby watering down the overall effect of treatments, or by comparing only relatively strong treatments, thereby capitalizing on a ceiling effect.

For example, in their meta-analysis, Ahn and Wampold (2001) compared treatments with more versus fewer components to test the specificity of interventions, and found no

significant difference between treatments with more versus fewer components. The authors concluded that the specific techniques in these treatments are unimportant and that what matters are the “common factors” (e.g., therapeutic alliance) that are found in all forms of psychotherapy. However, many of their comparisons involved a good treatment versus the same treatment with an added component, and as we reviewed earlier, adding components to highly efficacious treatments often does not increase efficacy (e.g., due to ceiling effects). Similarly, they compared CBT alone to CBT that was modified to include religious content for the treatment of depression. It is illogical to conclude that because an additional component did not increase treatment benefit, none of its components was necessary. By analogy one could compare acetaminophen and acetaminophen plus ibuprofen for headache relief; if both treatments produce similar improvements we cannot conclude that the medications themselves were unbeneficial and that a common factor in headache treatment—for example, the relationship with the treatment provider—was the active ingredient (see DeRubeis, Brotman, & Gibbons, 2005, for a similar argument).

Several researchers have challenged the conclusions of Wampold and others who claim equivalent efficacy of all psychotherapies, and have presented evidence that contradicts the dodo bird verdict. DeRubeis et al. (2005) noted that there are at least four instances in which research has identified a treatment for specific disorders that are more efficacious, including exposure and response prevention for OCD, CBT for panic disorder, exposure therapy for PTSD, and group CBT for social phobia. Additional evidence for psychotherapy specificity comes from Siev and Chambless (2007) who found that CBT was superior to relaxation training for the treatment of panic disorder but not for the treatment of GAD. These findings demonstrate that, in contrast to what Wampold and others would predict, matching a specific treatment with the specific disorder for which the retreatment was developed produces superior outcomes to non-specific treatment.

More recently, Benish et al. (2008) conducted a meta-analysis of treatments for PTSD, limiting their analyses to “bona fide psychotherapies.” To meet their definition of “bona fide” the treatments had to meet certain criteria: The treatment should be based on psychological principles, a manual of the treatment should be available, and active ingredients of the treatment should be listed (e.g., exposure). This definition resulted in the inclusion of RCTs in their meta-analysis which compared two well-established treatments for PTSD, for example, stress inoculation versus PE (Foa, Rothbaum, Riggs, & Murdock, 1991), exposure versus cognitive therapy (Marks et al., 1998), and EMDR versus PE (Rothbaum et al., 2005). Therefore, it should not be surprising that they found an effect size of $d = 0.00$ for PTSD outcomes—that is, no difference between active treatments. The authors conclude that the “lack of treatment differences suggests that specific ingredients may not be critical for the treatment of PTSD,” and concluded that “factors common to all treatments” may be the important curative ingredients of psychotherapy (p. 754).

The logic behind this conclusion is flawed for the reason that, as agreed above, the equivalent efficacy of acetaminophen and ibuprofen in reducing headache does not imply that these medications are ineffective and that common factors such as belief in the effects of medication or a relationship with one's pharmacist were responsible for clinical improvement. The valid test for specific ingredients versus common factors would pit an

active treatment such as PE for PTSD against a treatment that included *only* common factors, for example, general counseling for PTSD. Powers et al. (2010) included such studies in their meta-analysis of PE and found a large and significant effect in favor of PE ($g = 0.65$). Thus it is incorrect to conclude that specific treatment components make no difference in the treatment of PTSD.

Furthermore, a thorough examination of the Benish et al. (2008) article reveals problematic features of the meta-analysis and the conclusions therein, as presented by Ehlers et al. (2010). First, the Benish et al. study selection procedure excluded supportive therapy, which is widely used to treat patients with PTSD (e.g., Ehlers, Gene-Cos, & Perrin, 2009; Schnurr et al., 2007) and has been associated with significant PTSD improvement (e.g., Bryant, Moulds, Guthrie, Dang, & Nixon, 2003; Schnurr et al.). In this context it should be noted that supportive therapy has been used as a control condition in trials of PTSD and ASD to intentionally control for the effects of nonspecific treatment factors, including therapist attention and support. Many of these trials have concluded that PE (or similar exposure programs) is effective because it resulted in moderate to large effect sizes relative to supportive counseling (Bryant et al., 1998; Bryant, Moulds, Guthrie, et al., 2003; Bryant et al., 1999; Foa, Rothbaum, Riggs, & Murdock, 1991). The exclusion of supportive therapy trials has the effect of reducing the effect size of PTSD treatment comparison trials, given that trauma-focused treatment programs like PE tend to produce larger effect sizes compared to supportive therapy (e.g., Bryant et al.; Schnurr et al.).

Second, Ehlers et al. (2010) point out that several of the comparisons in the meta-analysis are between treatments that have not been shown reliably to be better than no treatment for PTSD (e.g., trauma desensitization vs. psychodynamic psychotherapy vs. hypnotherapy; Brom, Kleber, & Defares, 1989). It is a mistake to conclude that two treatments are equally effective based on a nonsignificant difference in their effectiveness; as Ehlers et al. argued, we would not conclude that aspirin and vitamin C are both effective for treating a bacterial infection if neither were more effective than the other and neither were very effective. Furthermore, a study by Bryant et al. (2008) published after the Benish et al. (2008) meta-analysis reported a significant difference between “bone fide” PTSD treatments, with the full PE treatment (in vivo and imaginal exposure plus cognitive restructuring) yielding superior results compared to in vivo alone, imaginal exposure alone, or in vivo plus imaginal exposure without cognitive restructuring. This study demonstrates that the removal of specific components of a treatment package can render it less effective than the full treatment, and represents strong evidence against the “common factors” argument of Wampold and others (e.g., Wampold, Ahn, & Coleman, 2001).

Contrary to the argument that all treatments have the same effects, there is evidence that several CBT programs for PTSD are more effective than non-specific treatments. Different studies have compared the effectiveness of CBT programs including PE, cognitive therapy, stress inoculation training, and EMDR to treatments that do not specifically target PTSD such as treatment as usual, relaxation training, and supportive counseling. These studies revealed that each of the CBT programs was more effective than at least one of the comparison conditions (e.g., Foa et al., 1991; Marcus, Marquis, & Sakai, 1997; Schnurr et al., 2007; Taylor et al., 2003).

Limited Clinician Training in EBTs

Although graduate training happens outside the scope of typical dissemination efforts, it has a crucial influence on factors related to successful dissemination, including treatment allegiance and attitudes toward EBTs. Indeed, training in graduate school is one of the strongest influences on mental health professionals' practices (Cook et al., 2009); from a standpoint of EBT dissemination, the influence of training on practice is problematic given that many graduate training programs do not provide adequate training in EBTs. Crits-Christoph, Frank, Chambless, Brody, & Karp (1995) found that while a majority of graduate programs offered supervision in exposure therapy for PTSD (59%), only 26% of internships provided such supervision. Similar numbers were reported for Exposure and Response Prevention for OCD, with 48% and 22% of graduate programs and internships (respectively) offering supervision.

There is evidence that education in EBTs varies by type of training program. Graduate students who are in more research-based psychology programs report that they receive more training in evidence-based practice than do students in more clinically-focused programs (Luebke, Radcliffe, Callands, Green, & Thorm, 2007). Accordingly, students in research-focused programs reported greater influence of evidence-based practices on their current clinical work and greater reliance on results from RCTs in forming treatment plans than did students in clinically-focused programs. Similarly the number of courses in EBTs and the number of practicum hours with manualized treatments are correlated with clinical students' positive attitude towards EBTs and with use of manuals (Karekla, Lundgren, & Forsyth, 2004). In surveying clinicians, Becker et al. (2004) found that only 28.5% had any training in using imaginal exposure to treat PTSD, a well-documented procedure for treating this disorder. Training appeared to have a significant effect on clinicians' use of imaginal exposure; approximately 2% of untrained clinicians used imaginal exposure with their PTSD patients versus 54% who were trained in imaginal exposure.

How many graduate clinical training programs teach EBTs? Weissman and colleagues (2006) surveyed a random sample of all accredited training programs in psychiatry, psychology and social work in the U.S. to determine the amount of EBTs taught. In this study, the gold standard of training for a given treatment required both didactic instruction and clinical supervision. Psychiatry met this gold standard for the largest percentage of EBTs examined (28.1%), followed by PhD programs (16.5%). PsyD and social work programs, which tend to have the largest number of students and the greatest emphasis on clinical training, met this standard for the smallest percentage of EBTs at 11.5% and 9.8%, respectively. Even more striking, 95.7% of psychiatry residency programs met this gold standard for at least one of the EBTs whereas 43.8% of PhD programs, 67.3% of PsyD programs, and 61.7% of MSW programs failed to meet this standard for *any* EBTs. It is possible that the view of EBTs as uninspiring, mechanical treatments discussed earlier may contribute in part to the anti-EBT stance taken by many graduate trainers and consequently to the lack of EBT training in many graduate programs. This pattern poses a particular challenge for dissemination of PE because it appears that many clinicians commence their careers with an attitude that is antithetical to EBTs, and which arguably is reinforced during the initial years of clinical practice.

Limited Effectiveness of Commonly Used Dissemination Procedures and Cost Associated with Effective Dissemination Programs

An important barrier to the widespread use of EBTs is the high cost of effective dissemination programs. Effective training in new EBTs generally involves more than just exposure to a treatment manual. Sholomskas et al. (2005) examined three ways of trying to increase provider proficiency in the delivery of CBT for substance abuse problems: reading the treatment manual, the manual plus interactive Internet-based training, or the manual plus a seminar and supervision on treatment cases. The most effective training method included the manual, a seminar, and supervision. Of course, this enhanced method of training is costly, and this high cost may deter mental health systems as well as individual practitioners from investing in learning EBTs. Thus one of the challenges to successful dissemination is to design cost effective dissemination efforts and to secure adequate funding to support the initiative. Issues related to funding need to be addressed from the inception of the dissemination program in the planning phase and through all subsequent phases. It may be particularly important to ensure that funding will be available not only to train the mental health professionals in delivering the EBT but most importantly to establish the necessary infrastructure for maintaining the results of the dissemination effort; otherwise the payoff from investing in training and implementing the new EBT will be limited at best.

Summary

As we have detailed in this section, there are multiple barriers to effective dissemination of EBTs for PTSD, including a professional culture that is antagonistic toward EBTs, a lack of training in EBTs, the limited effectiveness of commonly used dissemination techniques, and the cost associated with effective dissemination models. These barriers notwithstanding, much work has been done to disseminate existing EBTs, including those that effectively treat PTSD. In the section that follows we review dissemination efforts that have been used to bring PE to patients with PTSD across the US and around the world; many of the lessons learned from PE dissemination apply to other dissemination efforts and can inform future dissemination programs.

Meeting the Global Need: Disseminating Effective Treatments

Because of the easy access to news around the world through the Internet and other media, we are constantly bombarded with the realization of endless mass traumas in a large number of countries due to wars, terrorism, and natural disasters. Not counting traumatic events that are experienced by individuals as opposed to entire populations, the number of people who need help for their PTSD and related symptoms is mind boggling. Thus PTSD treatment researchers are acutely aware of the tremendous need to disseminate effective treatments widely such that patients have access to them, and are also aware of the challenges to successfully meet this need.

It is important to note that the barriers for disseminating EBTs described above were conceived from the perspective of western settings where human and organizational resources (e.g., mental health clinics, mental health professionals) are in place. In these countries the challenge is to modify the clinicians' attitudes and behaviors so that they utilize

EBTs when appropriate. The challenges to providing EBTs for PTSD sufferers in developing countries, where human and organizational resources are extremely limited and sometimes non-existent, are daunting.

Dissemination of EBTs in Developed Countries

Optimal Candidates for Dissemination

As noted earlier, several treatment programs received strong empirical evidence for their efficacy and potentially could be candidates for dissemination. What makes a program suitable for dissemination? We suggest that not all treatments are equally disseminable and that optimal candidates for widespread dissemination should possess at least the following attributes: 1) have solid evidence for their efficacy with a wide range of traumas; 2) be effective for patients with varied demographic backgrounds; 3) be effective for patients with complex presentations and comorbid diagnoses; 4) be relatively simple and streamlined to facilitate training to a broad base of variably qualified practitioners; and 5) have a structured manual that contains a step-by-step guide for the therapist.

PE has all of these characteristics, making it an optimal candidate for widespread dissemination. As reviewed earlier, PE has an extensive evidence base in support of its efficacy from studies that cover a wide range of traumas and conducted by independent research groups from different countries. Moreover, PE's efficacy is comparable across various demographic backgrounds, and has been shown to work with patients who have comorbid diagnoses such as depression, personality disorders, and alcohol dependence. Finally, PE is a simple, streamlined treatment program that is fully laid out in a highly structured (yet flexible) manual that is readily available (Foa et al., 2007). After two psychoeducation and treatment planning sessions, the remaining sessions follow a predictable structure. They begin with homework review, proceed to imaginal exposure and processing of the trauma memory revisiting, and conclude with assigning homework. The straightforward procedures that comprise PE make it relatively easy to learn and deliver.

The first systematic program for disseminating PE emanated from the Center for the Treatment and Study of Anxiety (CTSA) in Philadelphia, PA. Since that time other CBT researchers have developed their own dissemination programs. In this section we will present an overview of some of the PE dissemination efforts, focusing on the dissemination experiences of the first author and her colleagues. Throughout the description of the dissemination efforts, we will highlight the challenges that are part and parcel of each step of the dissemination process, the barriers that need to be overcome, and the successes that can be achieved.

Evaluating Efforts to Disseminate CBT for PTSD

Dissemination of PE to a Local Clinic—The first dissemination effort at the CTSA was to clinics in the Philadelphia community with the goal of examining the ability of master's level community mental health professionals, naïve to cognitive behavioral therapy, to learn how to conduct PE and to compare their treatment outcomes to those of PE experts in the CTSA. This dissemination effort is an excellent example of the challenges involved in

the planning and communication phases, and the measures that can be taken to meet these challenges.

The first step in planning to disseminate EBTs for PTSD to community clinics was to identify the population of trauma survivors who are likely to have high rates of PTSD. Inspection of the literature suggested that the trauma survivors with the highest rates of PTSD were women who had experienced sexual abuse and rape (Kessler et al., 1995). Thus the next step was to find community centers that were open to adopting EBT for their clients, and the largest rape crisis center in the Philadelphia area where the CTSA resides was Women Organized Against Rape (WOAR). In some cases an organization initiates the dissemination effort and approaches experts to implement new procedures; in other cases it is the proponent that approaches the organization and offers to implement an EBT. WOAR represented the second case and thus substantial efforts were needed to open lines of communication and secure the willingness to partner with an outside agent. At the time in 1984 they were a grass roots organization that was hostile to research; they were resistant to the idea of partnering with researchers, and initially refused to even entertain the idea of collaboration. This attitude of the organization toward academic researchers and perceived outside dictation of how to deliver clinical services represented a cultural barrier that had to be addressed in the planning and communication phases.

One way to overcome this kind of initial resistance is to identify individuals who favor the goals of the dissemination effort and who have a trusting relationship with the organization. The CTSA addressed this barrier in this way, by approaching a clinical researcher in their academic department who was excited about the project and at the same time was a part of the grass roots organizations of abused women in Philadelphia. This researcher engaged the director of WOAR in a series of discussions; a long process that involved many meetings with the director and the board of directors of WOAR culminated in forming a partnership. The dissemination process then could continue as planned, beginning with the training phase.

The PE training phase included a 5-day PE workshop provided by CTSA experts and included background information on the theory and efficacy of PE, instruction on PE interventions (e.g., delivering the treatment rationale, conducting imaginal exposure), discussion of therapist issues such as distress and fatigue, and the use of PTSD assessment tools. Therapists were to receive weekly group supervision throughout the study, which consisted of meeting for 2 hours per week to view and discuss videotapes of ongoing therapy cases. Two-day “booster” workshops were given every 6 months during the first 2 years of the study, during which therapists from both community clinics presented cases and videotapes from therapy sessions.

The implementation phase revealed issues that had not been resolved during the planning, communication, and training phases. Although the community therapists came to supervision each week and discussed their cases, initially they found reasons to exclude each patient from receiving PE—for example, that the patient was “too fragile” or “not ready” for PE. This pattern continued for approximately 6 months as PE supervisors from CTSA worked to overcome community therapists' reluctance to refer their patients for PE. Thus, as

is generally necessary in the process of dissemination, CTSA personnel maintained communication with WOAR's leadership and had a series of discussions; ultimately the crucial component in the implementation phase was a top-down mandate that counselors needed to refer patients for PE treatment, which led to patients being referred to the study. This step highlights the need for organizational support for the innovation to succeed because there is typically the need for structural persuasion to overcome reluctance of practitioners to shift their traditional beliefs and practices.

Importantly, systems were in place to evaluate the outcomes of these cases—which revealed that the patients generally improved rapidly—and ongoing group supervision allowed the counselors to share their successes. As a result, the counselors developed enthusiasm for PE and pride in their ability to deliver the treatment effectively. The process of disseminating PE at WOAR exemplifies how the principles of adopter models function because the training and supervision allowed practitioners to be participants in the process, ensuring close communication between the practitioners and the proponents at each stage. At the end of the 6-year study the outcomes for community clinicians were excellent and were as good as those of PE experts from the CTSA (Foa et al., 2005). Because of ongoing collaboration with the CTSA, the culture of adopting PE remained intact. For example, therapists at one of the community centers took the initiative to have the PE manual translated into Spanish in order to train local Latino community therapists so that Spanish-speaking patients could benefit from this treatment. In addition, they developed and began using a PE intervention program for incarcerated women with PTSD. The retention of the culture favorable to PE was apparent when CTSA researchers developed a PE protocol for children; clinicians at the community center immediately began using the protocol with their pediatric patients and collected data on treatment efficacy.

This dissemination trial also underscored the significant cost involved in effective dissemination, including having expert supervisors provide ongoing oversight and maintaining a culture that was receptive to EBTs. Additionally, because of the proximity of the community centers to a PE expert center it left unanswered the question of how to disseminate effectively when traditional face-to-face supervision with centralized experts is not an option.

Study of PE Dissemination in the Department of Veterans' Affairs—A challenge for training therapists unfamiliar with PE in 12 VA sites across the country was provided by a large study conducted in the Department of Veterans Affairs (VA) comparing the efficacy of PE to that of present-centered therapy (PCT) in female veterans and active duty military personnel (Schnurr et al., 2007). The VA provided the initiative for the collaboration and the treatment outcome study and thus there was no need to persuade the organization of the merits of PE during planning and communication. However, the distance between the expert center and the 12 study sites presented two challenges that required a modification in the dissemination program: first to provide supervision to a large number of therapists (24) at once; and second, to retain the on-line principle of post-workshop supervision with therapists across the country in New Mexico, Atlanta, Cincinnati, and so forth.

During the planning phase the program was adapted such that therapists would receive supervision and feedback before each new session in the following ways: Each therapist was assigned a supervisor to whom they sent therapy tapes overnight immediately after they completed each PE session to allow time for the supervisor to view the tape, provide feedback by email, and then discuss the session with the therapist by telephone. These procedures allowed the supervisors to address issues before the next PE session was conducted. This approach was successful and therefore has been retained to this day. With advances in technology, session recordings are being sent via the Internet, not only from therapists within the US but from around the world. This treatment study demonstrated ways in which training and implementation of innovation must be tailored to the structure and scale of the organization. Rigid adherence to a specific aspect of a dissemination program (in this case, face-to-face supervision) often will interfere with successful implementation of innovation.

An additional principle illustrated by the VA study was the importance of developing an infrastructure and building a culture that will sustain the use of EBTs. In this study there was no face-to-face contact between the PE therapists of the Schnurr et al. (2007) study and CTSA PE experts, nor was there a plan for newly trained PE therapists to continue to deliver PE beyond the end of the study period. Thus the continuation of PE use depended entirely on each therapist's personal preference. As with the study of community therapists (Foa et al., 2005), the success of the study likely was due to the continuous supervision that therapists received from PE experts throughout the life of the study, and such intensive supervision is very costly. If the success of disseminating PE (or any other EBT) depends on continuous supervision by experts, then the practicality of such a dissemination program is limited.

Given the limits, costs, and impracticality of relying on centralized experts to conduct the supervision, a second dissemination model was developed that minimized experts' involvement in the dissemination process. This alternative approach has the greatest implications for the training and implementation phases. In this model, PE experts conduct an intensive workshop at the dissemination site. Following training, committed workshop participants implement PE with limited supervision; a subset of trained therapists are invited to receive further training at the CTSA in order to become PE supervisors. Once certified, supervisors begin to supervise therapists who have completed the PE workshop. Also, the 5-day workshop was condensed to 4 days. Finally, some supervisors become trainers who conduct PE workshops. This model has been used to disseminate PE nationally and even internationally, promoting independence from the PE developers. In the next section we discuss challenges and successes in dissemination and implementation across countries and cultures.

Dissemination of PE in Israel—In 2002 the first PE workshop was held in Israel, spurred in large part by the Al-Aqsa intifada that began in 2000 and the frequent terrorist attacks that raised consciousness about PTSD and the need for effective treatment. The dissemination program included the intensive workshop and a strong recommendation to treat the first PE patients under weekly supervision. The goals of the initial workshop were

to introduce PE to mental health professions in Israel with the main goal of introducing PE to therapists of active duty personnel and veterans.

After the initial workshop there was a lot of interest and many requests from the government, national healthcare systems, and the military to provide PE training to therapists who work in these systems. This demand for trained PE providers necessitated the creation of a quality assurance infrastructure. A three-tiered system of certification was created: PE therapist, PE supervisor, and PE trainer certification. Thus PE dissemination in Israel followed a “train the trainers” model.

The PE dissemination initiative in Israel has enjoyed considerable success. Several leaders emerged, each of whom created a trauma clinic where PE is the first-line treatment for PTSD and where weekly PE group supervision takes place. Each clinic has at least one certified PE supervisor, core therapists, as well as practicum students. In addition to supervising the clinicians in their own clinic, the PE supervisors also supervise outside clinicians who are seeking to be certified as PE therapists. Additionally a large PE research and clinical center was established in the largest veterans' mental health clinic in Israel. One measure of the success of the PE dissemination in Israel is that therapists seek out opportunities to develop expertise in PE without the initiative of their places of employment, as was the case in the first stages of PE dissemination; approximately 100 therapists per year bear the cost of attending PE workshops, demonstrating that evidence-based treatment for PTSD, and particularly PE, has entered the culture of psychotherapy in Israel.

Several lessons emerge from the PE dissemination efforts in Israel. First, these efforts were driven by the organizational readiness sparked by the reality of terrorist attacks, the awareness of which fuels the ongoing interest in disseminating treatments that work. A related motivation for effective treatment is the relatively frequent military conflicts in Israel, and the anticipation of imminent future wars. Second, it is important that the participants in the PE workshop are actually therapists who are working with PTSD patients. From the first workshop, only 15 of 45 participants completed the training requirement of treating two to three patients under the expert supervision of four mental health professionals who had been trained in Philadelphia. Of the many hundreds of therapists who completed the PE workshop, only about 100 completed supervision and became certified as PE therapists, partly because the institutions that were targeted for dissemination (e.g., the army) did not mandate it. Thus it is crucial to establish in the planning and communication phases a roadmap for maintaining the use of the novel treatment.

Although it is heartening on one level that many non-PE certified therapists are using PE, the lack of certification is cause for concern because it may reduce therapist competence and quality of treatment. Without formal means to evaluate the clinical outcomes associated with these clinicians' PE cases it cannot be known how effectively they are delivering PE. Additionally, the maintenance of PE use depends to a large degree on individual proponents of the treatment; there are no formal mechanisms in place to require and maintain the use of EBTs. Thus, many Israeli veterans with PTSD still do not receive effective treatments. Recently the Ministry of Health developed guidelines that require the use of EBTs,

including PE, in treating veterans. It remains to be seen how and to what degree these guidelines will be implemented.

Dissemination of PE in Japan and China—Efforts to bring PE to Japan and China also highlight central challenges in dissemination. First, there must be a perceived need for the innovation and engaged leaders who will promote the dissemination; several such leaders in Japan attended a PE workshop in their home country and then came to the CTSA to receive additional training to become certified PE therapists and supervisors. Their respective clinics have since become PE centers where treatment, supervision, training, and research are conducted, including the RCT by Asukai et al. (2010). After the tsunami of March 2011 there was a renewed interest in dissemination of EBTs because of the urgent need to treat many thousands of trauma survivors. This interest and the initial dissemination successes notwithstanding, a formal infrastructure for widespread dissemination has not been developed and the maintenance of PE wholly depends on the ongoing efforts of a few key individuals. Thus it remains to be seen whether larger scale dissemination will be developed in Japan.

A similar scenario played out in China where the 2009 earthquake in Sichuan Province motivated the local head of mental health to seek PE training; although this individual has treated hundreds of earthquake survivors, the impetus for EBT dissemination may have dwindled because no formal plan was in place to disseminate PE broadly and to maintain its presence.

In sum, many PE workshops have been given around the world to many thousands of mental health professionals. PE is effective across cultures in the hands of trained mental health professionals and can be successfully disseminated to single clinics within mental health systems. However, it is unknown whether and to what extent these mental health professionals continue to practice PE. Another positive achievement is the development of a methodology to conduct effective supervision across cities and countries. These dissemination efforts also underscore considerable challenges. In each of the examples above the relatively limited scope of dissemination is disappointing; by analogy, we would not be satisfied if a powerful treatment for breast cancer were successfully implemented in only a few clinics. Additionally, although many hundreds of therapists have been trained, only a relatively small percentage of them completes training for PE certification, so quality of treatment delivery is questionable. It seems that a significant impact on mental health services may be achieved only when large service delivery systems systematically promote and invest in the development and maintenance of an infrastructure that will support the use of EBTs. Such an initiative was undertaken by the central office of the Veterans Health Administration (VHA) in the US beginning in 2005 (Karlin et al., 2010).

Current Dissemination of PE in the VA—As in the case of PE dissemination in Israel, military conflicts led to a great number of individuals from the US military with PTSD which, in turn, has raised public consciousness about the urgent need for effective treatment. This awareness prompted calls for policies and adequate funding to meet the needs of veterans and active duty service personnel with PTSD (e.g., Domestic Social Policy Division, 2006), reflected in numerous media reports. The VHA central office responded by

rolling out two initiatives for disseminating EBTs for PTSD to VA clinicians: PE and Cognitive Processing Therapy (Karlin et al., 2010). Here we will describe the PE initiative, the goal of which was to establish the VA's ongoing capacity to train and supervise their mental health practitioners in conducting PE. This approach stands in contrast to the goal of the Schnurr et al. (2007) study which was to examine the efficacy/effectiveness of PE among veterans, with no aim of encouraging the continuous use of PE.

Disseminating an EBT to a large system requires considerable planning and preparation, particularly when quality of delivery is an important goal. Cost considerations are also an important force that determines the extent of the dissemination, the investment to promote treatment adherence, and the infrastructures for maintaining the use of the EBT after the training and implementation phases. The requirement that each PE therapist receive close supervision with two patients necessitates training supervisors before widespread training of therapists. It is relatively straightforward to train thousands of people in a short period of time if the only requirement is participation in a workshop. In contrast, close supervision to ensure quality of delivery requires having supervisors in place prior to the commencement of the large scale dissemination. Fortunately in the VA there were 10 PE therapists from the Schnurr et al. (2007) study who were selected to be trained as PE supervisors and received the supervision workshop before the launch of the dissemination initiative.

Training model and outcomes—The training and dissemination model for the VA followed the model developed for use in Israel and included PE certification of therapists, supervisors, and trainers. This model allowed for exponential increase in the number of trained PE therapists. As of May 2012, 1466 clinicians have been trained in PE, 1050 have completed consultation, 175 are currently in consultation, and 240 have dropped out or been removed. There are a total of 67 certified consultants and 16 certified trainers. An additional 242 clinicians have been trained in coordination with the VA rollout.

Several lessons emerged from disseminating PE in the VA, the largest PE dissemination project to date. First, as with smaller initiatives, the success of the VA dissemination required a top-down directive from the VHA central office. Such top-down directives are needed to overcome the substantial cultural barriers discussed earlier: a resistance to change, a commitment to the treatment approaches that clinicians have been using, and the effort required to follow a manual. The top-down influence seems to have been responsible for the high percentage of PE workshop participants in the VA that completed the requirement of close supervision with two PE cases (88%); in contrast, only 20% of workshop participants in Israel completed supervision because there was no similar mandate. The importance of supervision is evident from data gathered in the evaluation phase and presented by Ruzek et al. (2009), which compared PE therapist attitudes toward PE pre- and post-supervision. Therapists reported increases in self-efficacy to deliver PE, to receive PE referrals, and in expected patient benefit from PE, as well as decreases in their beliefs about expected drawbacks of PE. Ninety-five percent of those who completed supervision reported they were “very likely” to use PE with their PTSD patients.

In addition to the planning and communication that preceded the training, the success of this initiative depended on the VA's commitment to the training and supervision infrastructure,

given the organizational needs involved in assigning hundreds of therapists to supervisors. While the short-term success of this initiative is unquestionable, it is unknown to what extent PE use will be maintained in the VA. Such maintenance requires a cultural change in the entire system from the top to the mid-level management to the therapists. This can be facilitated by formalized and systematic integration of PE into VA service delivery rather than reliance on the variable influences of key individuals. These changes include incentives and directives to enhance the use of EBTs and to fight the temptation to regress to old clinical habits. Also, it still is the case that there is a preference to treat as many veterans as possible, which dictates that they cannot receive weekly treatment as required to achieve success with PE and therefore continue to require mental health services for many years. An alternative approach is to treat fewer veterans at a time more effectively; they will be seen for an average of 10 weeks and then reduce their need for mental health services, thus making room for other veterans to receive effective short-term EBTs. Indeed, Tuerk (unpublished data) found that after PE completion mental health care visits dropped from an average of eight visits per year to four, with the majority of patients receiving three or fewer.

Dissemination of EBTs in Developing Countries

Despite the success of these dissemination efforts in varied cultural settings, there are distinct challenges to disseminating PE in developing countries. While PE has been successfully implemented in countries outside the US such as Japan and Israel, these settings have the infrastructures, educational systems, and health services that permit effective dissemination. Developing countries often lack these resources; the impact of lack of resources is compounded by the finding that trauma and disasters that occur in non-western (and typically less developed) countries have a worse psychological impact than when they occur in a western setting (Norris, Friedman, & Watson, 2002). Moreover, in many countries affected by disaster or war, poverty or political instability is so widespread that mental health needs often are not a priority relative to the needs of feeding a population, ensuring clean water, or maintaining safety for a community. In these situations it is unrealistic to expect that disseminating effective strategies for reducing PTSD will be promoted until these other more pressing matters are addressed. Even when mental health needs may be a priority, developing countries face the challenge of training personnel who often lack basic mental health training, have a limited understanding of the importance of evidence in deciding how to treat a psychological problem, and have limited finances to allocate to optimal implementation of dissemination programs.

To date there is limited but growing evidence that PE can be adapted to various cultures. Despite the many concerns expressed in the literature about the distinctiveness of each culture and the problems inherent in applying assessments or interventions uniformly in different cultural settings (Zur, 1996), there is also evidence that post-trauma reactions are similar across cultures (Steel et al., 2009). An approach that can help successfully disseminate PE across developed and developing cultures is to identify the core mechanisms of exposure and to determine how to effectively implement them in various settings. For example, to the extent that extinction learning is a core element of exposure, programs that implement extinction learning in ways that are culturally acceptable and efficient need to be developed.

In advancing the international agenda for evidence-based management of posttraumatic stress, it is important to consider how some of the obstacles faced in developing countries may be overcome. A recent commentary of dissemination trials for treating depression in three different settings (Pakistan, India, and Uganda) concluded that the major conditions that need to be met to foster successful dissemination are the recruitment of counselors from the local community, participatory training programs, treatment programs that are adapted to match the skill set of local counselors, the availability of supervision to promote ongoing skills development, and proactive strategies to reduce stigma and encourage help-seeking (Patel, Chowdhary, Rahman, & Verdeli, 2011).

In the section that follows we review specific examples of the kinds of barriers that must be overcome to disseminate EBTs effectively in developing countries, and we provide examples of efforts to overcome these barriers.

Examples of Adapting Exposure Therapy to Distinct Cultures

Individuals in many parts of the world suffer trauma as a result of political conflict, either in the context of civil wars or international conflicts. One challenge in the dissemination of PE is managing barriers to effective treatment in post-conflict settings. For example, one of the authors (RAB) is currently implementing a PE program in Aceh, Indonesia. This region has been affected by civil conflict for decades as a result of a separatist movement against the Indonesian government. During this period up to 33,000 people were killed over three decades (Hadi, 2011). One challenge in these settings, which is very common in conflict-affected regions of the world, is to implement a treatment that requires revisiting and narrating the trauma memories that invariably involves transgressions by people who are often known to the patient. In the context of Aceh, there can be great concern about revealing who participated in human rights violations because of unofficial reprisals or formal human rights commissions or war crime investigations. A central element of PE is to provide important details of the traumatic experience in order to ensure that all aspects of the memory are processed. Implementing PE in conflict-affected settings can be achieved safely by instructing patients not to identify perpetrators or victims (when they themselves are the perpetrator) to reduce the likelihood that people will avoid therapy programs because they fear disclosure may compromise their safety or freedom. This issue may also be relevant when treatment is employed with military personnel or veterans in developed and developed countries who had been involved in or witnessed atrocities.

There are also cultural issues that may limit effective dissemination. In strict Islamic regions like Aceh, for example, treatment seeking can be impaired because accepting one's fate is a tenet of the religion; attending therapy and revisiting one's trauma experience may be perceived as failing to accept one's fate. It is common in some Islamic settings for people to attribute trauma to Allah, and to believe that the traumatic event may have occurred to test the individual's belief; accordingly, refusing to accept persistent distress after a trauma may be interpreted as a sign of not accepting Allah's will. This tendency can be particularly common in women who experience a strong social expectation to accept their role in society and to not question their traumatic experiences. These barriers are not insurmountable and careful clarification of the mechanism of PE and its potential consistency with people's

religious worldviews can be achieved during the planning and communication phases. Indeed, this situation highlights that dissemination of PE requires careful considerations of local perceptions of PE and what function the treatment will be serving. If PE is interpreted as a threat to local cultural standards, dissemination may be disrupted both by local authorities who perceive therapy in general as a form of western contamination of local culture, as well as by resistance of individuals to engage in therapy. In many western settings where PE has been shown to be efficacious, these issues are less prominent.

Another challenge for disseminating PE across cultures is the collectivist nature of many non-western settings. Whereas western contexts typically revolve around an individualistic perception of events and oneself, many non-western peoples perceive their identities as part of their collective group, typically their village or ethnic grouping ((Jobson & O'Kearney, 2008a)). This distinction has an impact on PE dissemination in several ways. First, and at a practical level, it is foreign to many people to engage in a formal one-on-one interaction with another person; instead, most activities would occur in a group setting where people interact with various other people. Imposing individual therapy can be incongruous with the culture and is often not feasible. This scenario raises potential problems for PE because having patients narrate their trauma memories in front of others can be distressing for other traumatized individuals, especially those who may suffer from long-term and severe PTSD. Indirect evidence for this possibility comes from data showing that patients with borderline personality disorder cope less well with group trauma-focused therapy than those without this personality disorder (Cloitre & Koenen, 2001).

PE has been adapted for group settings; in this format patients are prepared for hearing others' stories, then each participant provides a PE narrative for the group, and participants subsequently repeat this process for homework (Foy, Ruzek, Glynn, Riney, & Gusman, 2002). There is much less evidence for the efficacy of this approach relative to individually-administered PE, and the best controlled studies suggest that it performs modestly at best (Schnurr et al., 2003). Despite the greater difficulties in administering PE within group settings, there is a need to develop this approach because in many cultures group interventions are the most feasible means to deliver therapy. Moreover, the greater cost-effectiveness of group therapy for poorer regions underscores the need to optimize the effectiveness of group-based PE.

Apart from the practical challenges in providing PE in collectivist societies, there are also conceptual issues that dissemination efforts need to address. There is considerable evidence that people who collectively experience traumatic or aversive experiences have collective memories of these events; that is, whereas people from individualistic societies tend to recall episodes characterized by "I," those from collective societies tend to recall personal memories experienced as "we" (Jobson & O'Kearney, 2008b; Wang & Conway, 2004). This phenomenon is consistent with repeated findings that people from collectivist societies describe their identities in a collective, rather than individualistic, manner (Jobson & O'Kearney, 2008a). These patterns suggest that PE may need to incorporate the collective nature of both the trauma (when it occurs in the context of mass violence or disaster) and the collective nature of the identity.

For example, one of the authors (RAB) is currently developing an exposure-based program for Aboriginal Australians, who hold an identity that involves (a) their current self, (b) their community, (c) the land that they are part of, and (d) their ancestors. Presenting exposure to trauma memories that focus on the experience of the individual would be foreign to these individuals and would not target the actual perception that they have of their traumatic experience. Accordingly, this adaptation of PE is expanding the content of exposure to include the trauma suffered to the individual, to the broader community, to ancestors, and to their country. In such adaptation the change mechanisms remain the same as in traditional PE insofar as therapy will aim to activate the sufferers' trauma memories and assist them to learn that these memories (which include mental representations of the harm done to their people and country) can be managed. Although yet to be evaluated through randomized trials, this approach is one example of how PE can be adapted to accommodate the worldview of collectivist societies.

Other barriers needed to be addressed in order to implement PE for survivors of terrorist attacks in southern Thailand (Bryant et al., 2011). In the wake of the 2004 tsunami, the third author (RAB) worked with the Thai Ministry of Health to train mental health professionals to treat PTSD in those affected by the tsunami. The planning and communication phases included discussions with Thai personnel concerning the usual practice of PE and the mechanisms underpinning it. There was initial concern that this procedure may not be applicable in Thailand because of the reluctance in Thai culture to both elicit distress in another person and to express distress. It was decided to proceed with PE in standard form; however, treatment would be supplemented with a focus on meditation because it is a common practice in Buddhist-dominated Thailand.

Over the course of a year counselors were trained in PE techniques and rehearsed their skills with tsunami survivors between training sessions. The efficacy of this approach was subsequently tested in an RCT in southern Thailand, where extremist Islamist militants were carrying out severe and regular terrorist attacks; over 3,000 people have been killed in this region in recent years. Participants were women who developed PTSD and complicated grief following bombings or shootings in which family members were killed, and who continued to live in terrorist-affected areas. To accommodate this factor, PE included post-exposure discussions that explicitly addressed the actual risk of being further harmed in terrorist attacks, and the need to accept a degree of risk if one is to function in that context. In fact, such discussions commonly take place in developed countries where realistic danger is part of the patient's life such as living in inner cities in the US where exposure to violence is a daily occurrence, or living in communities close to the border with Gaza where exposure to missiles occurs daily. This design of the Thai version of PE versus treatment-as-usual (TAU; non-specific counseling) was tested within CONSORT guidelines (Altman et al., 2001), with random allocation of participants to the two conditions by staff in Bangkok who were independent of the trial in southern Thailand, and with blind assessments. Seventy-five percent of participants who received the PE-based therapy achieved high end-state functioning 3 months after treatment finished, compared to only 33% of those receiving TAU. This finding reinforces the point that despite reasonably brief training and minimal supervision, practitioners with virtually no experience in cognitive-behavioral principles or practice can learn PE-based therapy. Furthermore, it highlights the necessity of planning and

communicating with organizational leaders in order for dissemination efforts to be successful.

Other adaptations of exposure therapy for non-western settings have been effective. Narrative Exposure Therapy (NET) has been evaluated across a range of studies with displaced persons in Africa, survivors of political violence in Romania, and asylum-seekers in Germany (Bichescu, Neuner, Schauer, & Elbert, 2007; Neuner et al., 2010; Neuner et al., 2008; Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004). NET is an adaptation of exposure therapy that was designed for war-affected refugees and attempts to accommodate the pattern of long-term and repeated trauma exposure; it involves recounting of the patient's life story, focusing particularly on the traumatic experiences that initiated PTSD symptoms. The therapist develops a record of the patient's life story in written form; this record is provided to the patient and, if the patient wishes, a copy is sent to an appropriate human rights organization (Schauer, Neuner, & Elbert, 2005).

Neuner and colleagues (2008) investigated the effectiveness of NET when delivered by lay counselors in a refugee camp in southern Uganda. Participants were randomly assigned to six bi-weekly sessions of either NET, trauma counseling (a less structured discussion of past traumas and their relationship to current experiences), or to a no-treatment control group. Importantly, counselors were nine refugees from the same camp who received training in NET and general counseling skills. Blind assessments indicated that whereas all participants exhibited significant reductions in PTSD symptoms, those who received NET and trauma counseling manifested a greater reduction in symptoms than those in the control condition. Accordingly, in terms of PTSD diagnosis, significantly fewer patients in the NET (30%) and the trauma counseling (35%) conditions continued to meet clinical criteria for PTSD at a 9-month follow-up assessment compared to those who did not receive treatment (63%). Impressively, this approach has been implemented in local settings and proven effective when administered by local lay therapists given only minimal training (Ertl, Pfeiffer, Schauer, Elbert, & Neuner, 2011).

Using another adaptation of PE, Hinton and colleagues have conducted a series of trials with Vietnamese and Cambodian refugees (Hinton et al., 2005; Hinton, Hofmann, Pollack, & Otto, 2009; Hinton et al., 2004), in addition to two case-series studies (Hinton, Pich, Chhean, Safren, & Pollack, 2006; Hinton, Safren, Pollack, & Tran, 2006). The authors adapted exposure-based CBT to treat culturally-specific panic attacks and symptoms of posttraumatic stress (Hinton, Chau, et al., 2001; Hinton, Um, & Ba, 2001). The treatment primarily consisted of exposure to trauma memories (PE) and interoceptive exposure to bodily sensations because of evidence of panic-like presentations in Cambodian refugees (Hinton et al., 2006), as well as instruction in culturally-appropriate visualization, traditional meditation and mindfulness strategies (see Hinton, Safren, et al., 2006, for a full description of the therapy; Otto & Hinton, 2006). For example, in one study Hinton and colleagues (2005) randomly allocated 40 Cambodian refugees with PTSD and panic attacks to either 12 weekly sessions of adapted CBT or a wait-list control; participants receiving exposure therapy exhibited a significantly greater decline in PTSD, depression, anxiety and panic symptoms than those in the wait-list condition.

Across this growing body of studies there is accumulating evidence that PE can be implemented effectively across cultures. Although each treatment entails some aspect that is culturally-specific, they each contain components of PE in reasonably standard form. The convergent finding that PE-based treatments lead to impressive treatment gains across cultural settings highlights that PE can be effectively taught, implemented, and evaluated in non-western settings. The evidence from Thailand and Uganda further highlight that locally trained people with modest levels of training can be competent in delivering exposure-based therapies. These cross-cultural dissemination efforts involved additional considerations at the planning and communication phases to ensure that the innovation was acceptable to and appropriate for the target groups. As in most PE dissemination efforts in developed countries, there is little evidence that these training and implementation efforts led to sustainable PE practice, largely because there was not a specific plan to do so. The monitoring phase represents a relatively neglected step in PE dissemination; it is imperative that more resources are devoted to maintaining the substantial investments that are made in the training and implementation phases of dissemination.

Successes in the Dissemination of Interventions to Ameliorate Reactions to Trauma

It is important to note, that despite the barriers described above, progress that has been made in moving systems toward increased use of evidence-based practices. We noted earlier the successful dissemination of PE in the VA. In this section we briefly review other initiatives for disseminating interventions in existing systems: psychological debriefing, *Skills for Psychological Recovery* in response to Hurricane Katrina in 2005, the National Child Traumatic Stress Network, the move by the American Fire Service towards providing EBTs to firefighters, and the Treatment Collaborative for Traumatized Youth.

Psychological Debriefing to Prevent Development of Chronic Reactions to Trauma

Arguably one of the most successful examples of dissemination in the field of traumatic stress involves psychological debriefing. Unfortunately the effectiveness of this intervention had not been established prior to its wide dissemination, and subsequent studies did not find it useful (McNally, Bryant, & Ehlers, 2003). For many years, agencies have responded to the perceived needs of survivors of small and large scale traumatic events by providing immediate psychological debriefing within the initial hours or days of the event. For example, after the terrorist attacks on New York City in 2001, many thousands of counselors provided immediate debriefing services in the initial aftermath (Kadet, 2002). This debriefing approach can be traced back to Critical Stress Response Debriefing, which was a highly structured single-session program offered to firefighters (Mitchell, 1983). This approach was typically provided within days of a traumatic experience, although in the context of large scale disasters it may be offered weeks afterwards (Everly & Mitchell, 1999). The session typically involves education about stress reactions, encouraging expression of cognitive and emotional reactions to the traumatic experience, advice about coping, and possible referral information (Mitchell & Everly, 2001). Although initially

developed for emergency responders, it was subsequently deemed appropriate for primary victims of trauma (Everly & Mitchell, 1999). Different variants of psychological debriefing have now been integrated into government and private organizations around the world.

Analysis of the enormous popularity of this approach suggests that its widespread use can be understood in terms of its reliance on adopter model strategies, as it was developed in close collaboration with the users (emergency response agencies originally), evolved in the context of many organizations, was perceived as compatible with organizational structures which often conducted systematic reviews of critical incidents, and was subsequently introduced to a larger network of agencies via influential role models. In this respect, the large-scale adoption of psychological debriefing offers an example of how a psychological intervention can be effectively disseminated to the point of becoming the predominant psychological intervention for trauma across the western world. Thus, psychological debriefing constitutes an example of highly successful dissemination of a strategy that has not been empirically supported because available evidence suggests that this early intervention does not reduce subsequent PTSD (McNally et al., 2003). The disappointing effects of psychological debriefing in preventing the development of chronic PTSD underscore the need to establish the efficacy and effectiveness of an intervention before widely disseminating it to the general community and mental health systems.

Skills for Psychological Recovery

In the wake of Hurricane Katrina, there was an initiative to develop evidence-informed interventions that could manage the large-scale mental health needs of the many thousands of people who were experiencing marked posttraumatic stress in the months after the event. Continuing difficulties related to rebuilding and managing ongoing stressors seemed to exacerbate these posttraumatic stress reactions (Kessler et al., 2008). As a result, the US National Child Traumatic Stress Network and the National Center for Posttraumatic Stress Disorder collaborated in preparing a modular-based program (*Skills for Psychological Recovery; SPR*) that could be taught to crisis counselors across the affected regions, and subsequently disseminated in trainings across the US (Berkowitz et al., 2010). This program was designed specifically for widespread dissemination of evidence-informed strategies for ameliorating the common problems experienced after disasters. It comprises six modules that include (a) an assessment and an action plan, (b) problem-solving skills, (c) basic cognitive restructuring, (d) distress management, (e) behavioral activation, and (f) facilitating social connections. The distress management module includes an adaptation of PE insofar as the survivor repeatedly writes down his or her memories of the trauma with the aim of achieving fear extinction. The framework of SPR included flexibility of dosing, with participants receiving 1 or 5 sessions depending on their need and willingness.

In the aftermath of massive bushfires in Australia, the SPR protocol was adapted in a government-initiated program to systematically provide evidence-informed treatments to as many people as needed it. As these fires affected many towns in regional areas, there were minimal mental health services available and thus a need to train local practitioners in evidence-based programs. An initial workshop of SPR was conducted for 30 trainers, who subsequently trained 342 practitioners in 25 different workshops (Forbes et al., 2010).

Importantly, this framework recognized that the brief intervention may not alleviate all problems, and that a proportion of disaster survivors would subsequently develop full-blown clinical disorders, including PTSD. To address this need, this dissemination effort adopted a stepped-care approach. A more thorough training program was implemented that trained mental health professionals in affected regions in PE; individuals who did not respond to the SPR protocol were referred to locally trained clinicians in PE and other EBT paradigms. This framework was then implemented through the entire state of Victoria, beyond the regions affected by the fires, with the intent of training practitioners to be prepared for future disasters.

At this point this implementation has not been subjected to a controlled effectiveness evaluation; nevertheless, it provides a model that is amenable to strict evaluation. An evaluation of practitioners who participated in the trainings indicated that one-third reported at the commencement of their training that they believed that EBTs were too prescriptive, and that this perception was associated with reports that they would not implement SPR in actual practice and would not implement the strategies including managing posttraumatic stress (Forbes et al., 2010). These findings highlight some barriers for dissemination discussed earlier, emphasizing the need to bridge the gap between biases against EBTs and willingness to accept and implement proven strategies. As discussed above, these barriers need to be addressed in the planning, communication, and later phases (e.g., training and implementation).

American Fire Service (AFS) Standards

In 2011 the National Fire Protection Association, the standards body for the American Fire Service, proposed an important revision to its Standard on Fire Department Health and Safety Programs. The previous set of standards mandated the delivery of Critical Incident Stress Debriefing (CISD), the intervention described earlier that has been shown to not have empirical evidence for its efficacy (Bisson, Brayne, Ochberg, & Everly, 2007). Specifically, the previous version of the AFS standards called for the establishment of a critical incident stress program for each fire department and stipulated that the program be made available to fire department members following traumatic incidents; there was no requirement for referral to specialists who provide EBTs. In recognition of the importance of EBTs, the latest version of the standards now states that wellness programs should be supported by empirical research that demonstrates their safety and efficacy, noting the lack of empirical support for CISD (McNally, Bryant, & Ehlers, 2003). Furthermore, the standards call for referral to behavioral health specialists who can provide EBTs that are in line with practice guidelines. These changes demonstrate policymakers' determination to base mental health care decisions on empirical evidence, constituting an encouraging step toward greater use of EBTs.

The National Child Traumatic Stress Network (NCTSN)

The Center for Mental Health Services of the US federal government's Substance Abuse and Mental Health Services Administration (SAMHSA) has provided funding to make EBTs available for traumatized youth through the NCTSN; the FY 2012 budget allocation for this network was \$45.8 million (<http://avahealth.org/vertical/Sites/%7B75FA0828-D713-4580->

[A29D-257F315BB94F%7D/uploads/NCTSN_FY_2012.brief.pdf](#)). This major initiative aims to improve the lot of traumatized youths in the US by making appropriate treatments more widely available. An integral element of the program is to create a “sustainable national resource” of effective care for traumatized youths (www.nctsn.org/about-us/mission-and-vision).

Researchers acting under the auspices of the NCTSN are disseminating trauma-focused CBT (TF-CBT; Cohen, Mannarino, & Deblinger, 2006), which shares many elements in common with PE: TF-CBT also involves psychoeducation about trauma and PTSD, in vivo exposure to trauma reminders, and creating a trauma narrative (similar to imaginal exposure) that allows the patient to process trauma-related thoughts and emotions. This treatment is more effective than child-centered therapy for the treatment of PTSD among children (Cohen, Deblinger, Mannarino, & Steer, 2004). A pilot dissemination study of TF-CBT among 12 treatment centers (Amaya-Jackson, Ebert, Forrester, & Deblinger, 2008, as cited in McHugh & Barlow, 2010) found that 1 year after training, all reporting sites (11 of 12) continued to provide TF-CBT. More research is necessary to determine the extent to which therapists reliably deliver this EBT for PTSD among youths; nevertheless, the scope of this dissemination effort and the apparent success to date provide an example of encouraging efforts that are underway to make EBTs widely available.

Treatment Collaborative for Traumatized Youth

In 2006 the Treatment Collaborative for Traumatized Youth began in North Dakota (for a full description, see Wonderlich et al., 2011) with the aim to disseminate evidence-based programs for the psychological effects of childhood trauma throughout the state. The program was based on a Collaborative Learning Model, which is organized by a series of initiatives, including (a) national coordinating centers, (b) academic centers that develop and disseminate evidence-based treatments, and 3) a network of centers that implement treatments in frontline community settings (Wonderlich et al., 2011). As with the NCTSN, this program emphasizes TF-CBT.

The North Dakota program occurred over four phases. In the initial phase, experts trained a select number of clinicians with an interest in learning evidence-based techniques through workshops, videoconferencing, and supervision. The second phase established the proficiency of the locally-based team via regular supervision. The third phase commenced dissemination by inviting all licensed psychologists, social workers, and counselors in North Dakota to participate in training, which resulted in 40 clinicians who completed training in TF-CBT. In the following year, the trained clinicians began using TF-CBT in their work with children; during the evaluation phase, post-treatment assessments indicated marked reductions in PTSD symptoms (Wonderlich et al., 2011). This program has shown success in training clinicians in an evidence-based approach and has apparently resulted in an increased usage of this treatment. The authors noted, however, that a major barrier for development of the program is the reluctance of community clinicians to participate in evaluation (Wonderlich et al., 2011). Consequently, they suggested that this program will need to overcome this barrier to determine whether the dissemination translates into improved health care of the traumatized children.

Future Directions

Enhancing Dissemination by Novel Applications

Central to dissemination of any treatment is to overcome the major barriers to care that limit potential beneficiaries from receiving the desired treatment. In terms of disseminating EBTs, there is a need to consider the fundamental ingredients of the treatment and how to integrate them into novel paradigms that allow new populations to gain access to treatment. Over the years scholars have speculated about the numerous change mechanisms involved in PE. It appears that patients respond to the treatment through a combination of extinction learning that the feared stimulus is no longer threatening, correction of the perception that avoidance is required to control anxiety, and perceived self-mastery (Jaycox & Foa, 1996; Rothbaum & Davis, 2003; Rothbaum & Mellman, 2001; Rothbaum & Schwartz, 2002). Different variants of exposure therapy emphasize different processes. The challenge for dissemination is to adapt these change mechanisms and to deliver them in ways that promote use in communities in need.

Web-Based Treatment—The World Wide Web is providing a substantive medium by which to deliver evidence-based treatments, across a range of disorders (Newman, Szkodny, Llera, & Przeworski, 2011; see also Kazdin & Blase, 2011). Therapy can either be fully delivered on the Internet or web-based applications can be used as an adjunct to face-to-face therapy. There are numerous advantages in using the Internet to deliver CBT programs. It overcomes the obstacle of distance, allowing poorly resourced regions to access evidence-based treatment. It provides anonymity because online programs allow people to self-identify in ways that do not require public acknowledgment of a psychiatric diagnosis or that they are seeking treatment. This factor is very important in populations in which stigma often precludes treatment seeking, such as the military or police. The Internet also provides a cost-effective alternative to face-to-face treatment because it reduces the resources required to fund (often costly) clinician-time, as well as to build the infrastructure required to provide traditional therapy.

As we have noted, cost-effectiveness is an important factor in dissemination, especially in under-resourced nations and in people in low socioeconomic regions who often cannot access mental health care. Previous reports suggest that providing therapy via the Internet can save between \$540 and \$630 for each patient compared to face-to-face therapy (Newman, Consoli, & Taylor, 1999; Newman, Kenardy, Herman, & Taylor, 1997). Importantly, the Internet also permits therapy to be delivered internationally. Nations vary in their familiarity with evidence-based therapy, and many countries in the world do not enjoy the benefits of having clinicians who have been trained in evidence-based treatments. Patients can bypass this barrier by accessing specialist web programs that may not be available in their own region. Crucially, computer-based CBT programs can be as effective as face-to-face therapy in managing anxiety and depression conditions (Kiropoulos et al., 2008; Selmi, Klein, Greist, Sorrell, & Erdman, 1990).

There is an increasing number of CBT-based Internet treatments for PTSD (Hirai & Clum, 2005; Klein et al., 2010; Knaevelsrud & Maercker, 2007; Lange et al., 2003; Lange, van de Ven, Schrieken, & Emmelkamp, 2001; Litz, Engel, Bryant, & Papa, 2007). Exposure

procedures are used in most of these interventions in the form of writing about one's traumatic experience or directive revisiting of the experience (Klein et al., 2010; Litz et al., 2007; Lange et al., 2003; Lange et al., 2001; Litz et al., 2007). These implementations are somewhat different from the standard PE protocol; however, participants in these treatments do engage the trauma memory in a detailed way repeatedly and construct a narrative of the experience. Generally these programs demonstrate beneficial effects. Although some of these programs have been evaluated only in relation to wait-list (Hirai & Clum, 2005; Klein et al., 2010; Knaevelsrud & Maercker, 2007; Lange et al., 2003; Lange et al., 2001), others have shown efficacy in comparison to alternative Internet programs (Litz et al., 2007). These initial results indicate that web-delivered or web-assisted exposure-based treatments for PTSD can be effective, and can overcome some of the major hurdles in providing many patients with evidence-based intervention. It should be noted that exposure therapies such as PE are particularly amenable to web-delivery because unlike strategies that require greater cognitive skills, such as cognitive restructuring, exposure instructions can be more simply delivered via the Internet.

It is important to note the limitations to the Internet. The major limitation is that it requires access to computers and Internet technology. Whereas these resources are widely available in developed regions, most people in the world, including many in developed nations, do not have access to the Internet. Accessing resources via the Internet also requires a degree of computer literacy, which tends to be greater in younger people. Further, on the basis of the limited evidence currently available, programs that include some degree of direct therapist contact result in better treatment outcomes than those without such contact (Newman et al., 2011).

The Utility of Telemedicine

In recent years there has been recognition of the value in using telemedicine (or telehealth) technologies, such as videoconferencing or telephone, to conduct therapy for patients with PTSD (Frueh et al., 2007). This approach decreases the burdens of travel time and costs, time away from work or family, and can be implemented cost-effectively (Bose, McLaren, Riley, & Mohammedali, 2001; Elford et al., 2000; Fortney, Steffick, Burgess, Maciejewski, & Petersen, 2005). Much attention has focused on this medium for providing evidence-based treatments to veterans, with the US Department of Veterans Affairs promoting telemedicine as an important means of providing care to veterans living in regional and remote areas (Committee on the Future of Rural Health Care, 2005).

Several uncontrolled reports indicate that telemedicine can reduce PTSD symptoms in veterans (Deitsch, Frueh, & Santos, 2000; Germain, Marchand, Bouchard, Drouin, & Guay, 2009; Morland, Pierce, & Wong, 2004). For example, in a proof-of-concept trial Tuerk and colleagues administered PE to veterans via video-conferencing and compared their outcomes to those of a sample of veterans who were treated with PE in a standard clinical setting (Tuerk, Yoder, Ruggiero, Gros, & Acierno, 2010). There were few differences in the videoconferencing format, apart from sending the audio recording of the PE session to the patient by express mail on a weekly basis. Although this trial was not an RCT, it did

demonstrate that this delivery mode was safe and resulted in effect sizes comparable to those observed in patients treated the traditional way.

It is becoming clear that delivering PE via telemedicine approaches has great utility. In an initial RCT that compared videoconferencing with standard PE treatment, Frueh and colleagues reported that videoconferencing resulted in comparable reductions in symptoms as face-to-face therapy; however, patients in the videoconferencing condition reported less comfort with therapy and poorer adherence to homework exercises than their counterparts who received treatment in person (Frueh et al., 2007). A larger study found that whereas telemedicine-delivered PE resulted in significant symptom reduction, it was not as powerful as treatment delivered face-to-face; it needs to be acknowledged, however, that this study did not randomize patients (Gros, Yoder, Tuerk, Lozano, & Acerno, 2011). Encouraging findings also came from a strongly-powered RCT that found comparable results in treating anger in veterans with PTSD via telemedicine as through in-person therapy (Morland et al., 2010).

Additional research is required to determine how effective telehealth approaches are compared to in-person therapy; however, the relative gains of reaching PTSD patients who would not otherwise receive an EBT suggests that efficacy of telehealth approaches relative to traditional therapy is not the only standard by which these approaches should be judged. If they can be delivered in a safe and cost-effective manner and result in respectable effect sizes, then they represent significant progress in disseminating PE to people who would otherwise not receive this treatment. There are currently larger and better controlled trials underway, such as with veterans from OIF and OEF, that will more definitively allow conclusions about the effectiveness of this medium (Gros, Strachan, et al., 2011).

Challenges for the Disseminating Current EBTs

Large-Scale Disasters

It is essential to note that many large-scale disasters simply cannot be managed in the context of traditional clinical services. In the aftermath of some recent events, such as Hurricane Katrina in Louisiana, the 2004 Asian tsunami, the 2010 Haiti earthquake, or the Japanese earthquake/tsunami/nuclear accident, many thousands of people may suffer the psychological effects of the event; consequently there will be too few mental health resources to treat the affected people individually. In this context, it can be more realistic to adopt a public health, rather than clinical, approach to ease the burden. For example, Hobfoll et al. (2007) have proposed five major principles, drawn from evidence-informed practices of managing common post-disaster problems: 1) promoting a sense of safety, 2) calming or arousal reduction, 3) sense of efficacy, 4) social connectedness, and 5) hope or expectancy of recovery. It is often impractical to expect to provide clinical service to thousands of people, and so providing techniques via education programs, the media, or other community approaches that are expected to promote recovery may enhance recovery in a proportion of people. In this scenario, the community may adopt a stepped-care approach and the smaller proportion of trauma survivors who have persistent PTSD may eventually receive the limited mental health resources. This model underpins the Skills for Psychological Recovery

paradigm discussed earlier that was implemented following Hurricane Katrina and the 2009 bushfires in Australia (Forbes et al., 2010).

Dissemination Across Disciplines—Earlier we elaborated on cultural barriers within the discipline of psychology for disseminating EBTs. It is important to underscore, however, that there is a parallel challenge to convince various disciplines of the importance of EBTs. Skepticism about the relevance of EBTs to clinical practice also exists, and sometimes to a greater extent, in the related disciplines of psychiatry, social work, counseling, and primary care. Many people affected by PTSD will seek help from professionals in these disciplines as their only point of contact; thus it is critical that dissemination efforts strategically target these various disciplines that do not necessarily share the emphasis that much of psychology places on evidence. The scientist-practitioner model is foreign to several core disciplines that treat people with PTSD, and it is important to develop dialogues with the bodies that manage these disciplines to raise awareness of the utility of EBTs for people suffering from PTSD. One important consequence of this initiative would be to facilitate referral of patients with PTSD to practitioners who provide EBTs rather than the current situation in which health practitioners commonly refer patients to mental health providers, irrespective of the treatments they provide.

Thus far we have defined the scope of the problem that trauma and posttraumatic stress responses entail; discussed highly effective treatment programs that greatly benefit the majority of patients who receive them; described projects that indicate that these treatments can be successfully used by community practitioners; presented data showing that the majority of mental health clinicians do not deliver these treatments, discussing reasons why that is the case; and summarized successful efforts to disseminate PE in the US and around the world. The discussion above underscores the public health need to disseminate PE and other EBTs for reducing PTSD symptoms. The burden of disease arising from PTSD represents a significant psychological and economical cost to both developed and developing countries. The projected increases in disasters in the future further highlight the need for strategies to enhance the accessibility of evidence-based approaches to treating PTSD. In the section that follows we define a vision for bringing state-of-the-art PTSD treatment to the people who need it.

Public Health Initiatives

In order to promote widespread access to effective treatments for PTSD, several systems need to act in concert. The key systems include graduate training programs, which introduce students to the concept of evidence-based practice and teach specific EBTs; government agencies which, as payers, can mandate the use of EBTs; insurers, who can also mandate the use of EBTs in order to maximize cost effectiveness in treatment delivery; professional organizations like the American Psychological Association and American Psychiatric Association that can mandate the teaching and training of EBTs through their accreditation process; healthcare delivery systems such as public and private hospitals; clinical researchers, who provide the knowledge base about which treatments are evidence based; and public education systems such as the media, which can educate mental health consumers

to demand EBTs, as well as motivate mental health professionals to seek training in EBTs. Below we elaborate on the role of each system.

Graduate Programs

One of the most important roles of graduate programs is to promote a culture that favors treatments with evidence for their efficacy over untested treatment in making treatment decisions. These programs can form the next generation of mental health providers not only by teaching them EBTs but also by establishing that, based on the principle of beneficence, it is unethical to deliver treatment that lacks evidence for its efficacy when an EBT for the disorder in question exists.

Graduate school training must also entail didactic courses and supervision on how to use EBTs effectively. In addition to training therapists, graduate programs are charged with training the next generation of clinical researchers. As such, there can be a synergistic dialogue between graduate training programs and researchers, with research informing training and training leading to subsequent research.

Government Agencies

Given the public health significance of PTSD and the taxing effects of PTSD on the healthcare system, government agencies are clearly stakeholders in fostering the use of EBTs because of their effectiveness and efficiency in restoring wellness. Importantly, the federal government and state governments have the power to promote EBT use. For example, the federal government could mandate the use of EBTs for reimbursement through Medicare and Medicaid; similarly, Medicaid payments for mental health services could be higher for EBTs, which would provide an incentive for clinicians to deliver these “premium” treatments. In addition, state licensing boards could require training in EBTs in order to grant a license to practice.

Another vital role of government is generating and funding EBT dissemination initiatives and establishing treatment guidelines. An outstanding example is the Veterans Health Administration initiative to disseminate PE and Cognitive Processing Therapy throughout the VA mental health system; thousands of mental health care providers have been trained and mandated to use these treatments with PTSD patients (Karlin et al., 2010).

Research Priority

To date there has been a dearth of well-conducted trials that evaluate the processes, predictors, and outcomes of dissemination attempts for psychological treatments of PTSD. It is important that research agencies place an emphasis on effectiveness and dissemination programs to determine the optimal means of transporting PE and other efficacious treatments to communities that need them. Such emphasis is apparent in the mission statement of the US National Institute of Mental Health (NIMH), in the revisions of its strategic goals, and in the encouragement of dissemination research through specific Requests for Applications. Whereas much research funding has been allocated to efficacy studies over recent decades, the relative lack of funding for dissemination research leaves many crucial questions in this area unanswered. Progress could be made in the science of

dissemination by making funding available for dissemination research following traumatic events, such as disasters; importantly, this research needs to occur across international settings in both developed and developing countries.

Insurance Agencies

As with public payers like Medicare and Medicaid, private medical insurance companies could decide which treatments they would reimburse based on the level of evidence for their effectiveness. Providers who choose to use other treatments would either not have their services reimbursed or would be reimbursed at a lower rate. Insurance companies would appear to have the incentive to set such policies given that effective treatment likely would result in significant savings, both from the shorter number of sessions needed to achieve remission, as well as from the improvement in associated impairment (e.g., cardiovascular disease, substance abuse).

Professional Organizations

Several organizations—including the American Psychological Association (APA), American Psychiatric Association (APA), the Association for Psychological Science (APS), the Association for Behavioral and Cognitive Therapies (ABCT), and the International Society for Traumatic Stress Studies (ISTSS)—could substantially influence the PTSD treatment landscape. These organizations could establish practice guidelines that are based on EBTs, which the American Psychiatric Association (2006), for example, has done. Further, those organizations that adhere to EBTs should forge greater ties with other organizations that represent disciplines that may be less familiar with EBTs yet nonetheless routinely provide services to traumatized people (see above).

Professional organizations often have training requirements that could influence the extent to which professionals learn and use EBTs. The American Psychological Association, for example, requires that graduate programs in psychology expose students to effective interventions and that they place students in settings that provide, among other treatments, empirically supported ones (APA, 2007). It does not, however, require that EBTs be chosen over non-EBTs when possible. In contrast, the mission of the Academy of Psychological Clinical Science (APCS) clearly prioritizes teaching EBTs both in graduate training programs and in internships. Professional organizations could also interact with other systems by educating government agencies, healthcare delivery systems, and the media about EBTs and their superiority.

Healthcare Delivery Systems

These systems can ensure the use of EBTs by providing funding for clinician training (e.g., workshops, supervision). As noted above, the VA is exemplary in promoting the use of EBTs for PTSD, and the US military has been making strides in this direction. Healthcare systems could also establish incentive policies that favor EBTs such as reducing patient load for clinicians who use EBTs. These systems are also in a position to educate health service consumers about the existence of EBTs, for example, through placing informational brochures in waiting rooms. Additionally, many non-government organizations (NGOs) provide counseling or related psychosocial services to trauma survivors around the world;

given the enormous number of therapy contacts that occur each year from NGOs, it would be useful to engage them in initiatives that attempted to integrate PE or other EBTs into their strategies.

Clinical Researchers

The role of clinical researchers is to produce knowledge about treatments that effectively treat PTSD. Part of the knowledge base generated by researchers includes developing efficient assessment tools to identify individuals who need treatment (see Kazdin & Blase, 2011). Researchers also play a crucial role in the development of effective dissemination strategies as they develop and test effective and efficient ways to train a sufficient number of therapists to ensure widespread access to EBTs.

The role of clinical researchers does not end with the development of effective treatments and ways to deliver them. Researchers play an active role in educating other relevant systems (e.g., graduate schools, government agencies, professional organizations, insurers) about treatments that work. For example, earlier we discussed the role of government in enabling clinical researchers to achieve these goals through funding policies; it is important to note that clinical researchers could and do influence funding policies through their innovative research and through serving on committees that help the mission of government agencies (e.g., review committees for the National Institutes of Health). Finally, clinical researchers educate the public about the best treatments available through books, websites, and other media.

The Media

Finally, the media can use the knowledge provided by clinical researchers, government agencies, professional organizations, and healthcare systems to promote awareness about EBTs to the public, including the consumers and the providers of mental healthcare (see Kazdin & Blase, 2011). Armed with knowledge about EBTs, individuals can seek appropriate providers who deliver effective treatments. If a person recognizes that his or her provider is using a treatment that lacks empirical support, that person can request that the provider use a different treatment or can ask for a referral to a provider that uses EBTs. The media, then, is in the position of enabling consumers to assume responsibility for their care, and of encouraging mental health professionals to seek training in EBTs. The media are also in a strong position to highlight the financial benefits of employing EBTs via reporting of health economic analyses that highlight the public savings by reducing the burden of disease associated with PTSD through EBTs.

Concluding Comment

Millions of people who currently suffer from PTSD are not receiving existing evidence-based, short-term, low-cost treatments. Despite the difficulties involved in dissemination in both developed and developing countries, the personal distress and the public health burden caused by PTSD renders the dissemination of PE and other EBTs critical. While clinical researchers continue to develop more efficacious and efficient interventions for PTSD, it is imperative to focus on ways to effectively and efficiently disseminate PE and other EBTs.

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Table 1

Dissemination Phases	Challenges
Planning (e.g., focus groups, surveys, advisory boards, assessing organizational readiness, identifying target agency/department, matching innovation to agency need)	<p>Low motivation to participate in dialogue with EBT proponents</p> <p>Widespread ideological resistance to change</p> <p>Lack of organizational structure to survey stakeholders</p> <p>Difficulty locating 'allies' to facilitate planning</p> <p>Inadequate resources to support planning initiatives</p> <p>Difficulty finding common goals in planning</p>
Communication (e.g., engaging opinion leaders, enhancing positive perception of innovation, initiating information-raising programs, establishing feedback mechanisms)	<p>Poor communication channels in organization</p> <p>No systematic means to contact stakeholders</p> <p>Inadequate financial resources to fund communication processes</p> <p>Domain/qualification differences impeding education initiatives</p> <p>Language barriers</p>
Training (e.g., pilot programs, refining training to ensure acceptance, establishing supervision systems)	<p>Willingness to engage in training</p> <p>Inadequate time/money for sustained training</p> <p>Inadequate time/money for supervision</p> <p>Supervisors resistant to supervision</p>
Implementation (e.g., initiating organizational changes to accommodate EBT, ensuring management supportive of change, ongoing supervision)	<p>Allegiance to existing practices</p> <p>Inadequate resources to implement change</p> <p>Incorrect targeted starting point</p>
Evaluation (e.g., assessment of knowledge/skills update, assessment of behaviour change, assessment of organizational response)	<p>Organization antithetical to evaluation</p> <p>Individuals concerned about personal evaluation</p> <p>Assessment only possible in cooperative sectors</p>
Monitoring (e.g., ongoing evaluation of EBT practice, evaluation of failures within organization, monitoring changing needs/structure of agency)	<p>Lack of sustained resources to conduct monitoring</p> <p>Resistant sectors not participants in monitoring</p> <p>Leadership changes change commitment to change</p>