Preliminary Evidence of Efficacy for EMDR Resource Development and Installation in the Stabilization Phase of Treatment of Complex Posttraumatic Stress Disorder

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This article reviews the complexity of adaptation and symptomatology in adult survivors of childhood neglect and abuse who meet criteria for the proposed diagnosis of Complex Posttraumatic Stress Disorder (Complex PTSD), also known as Disorders of Extreme Stress, Not Otherwise Specified (DESNOS). A specific EMDR protocol, Resource Development and Installation (RDI), is proposed as an effective intervention in the initial stabilization phase of treatment with Complex PTSD/DESNOS. Descriptive psychometric and behavioral outcome measures from two single case studies are presented which appear to support the use of RDI. Suggestions are offered for future treatment outcome research with this challenging population. © 2002 Wiley Periodicals, Inc. J Clin Psychol 58: 1465–1487, 2002.

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Complex Posttraumatic Stress Disorder

Current Definitions

In recent years, clinicians and researchers have started to recognize child abuse not just as an event, but as a complex process, often embedded within a context of severe neglect,

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deprivation, and emotional invalidation (Briere, 1996; Chu, 1998). In addition to more readily identifiable acts of commission (sexual, physical, and emotional abuse, witnessing of violence), acts of omission (unmet physical and emotional needs, parental unavailability, failure to protect, and childhood separations) are now being recognized as significant factors related to psychiatric difficulties in children and adults. While many abused and neglected children grow up to meet the current DSM-IV criteria for posttraumatic stress disorder (PTSD; American Psychiatric Association, 1994), the defining symptoms of intrusive reexperiencing, constriction, avoidance, and hyperarousal do not fully address the complex, long-term adaptations to chronic interpersonal neglect and abuse (Briere, 1996; Courtois, 1988; Herman, 1992a; Terr, 1991). Chronic abuse and/or failures in caretaking appear to have a profound effect on cognitive, affective, and psychosocial development, leading to an inadequate sense of self, impaired schemas, deficits in affect regulation and impulse control, and problems in forming and maintaining healthy, secure attachments in adulthood (Demos, 1988; Liotti, 1992; Schore, 1994, 1997; Teicher et al., 1997; Young, 1994).

Research has demonstrated a strong relationship between childhood trauma and the development of borderline personality disorder (Bryer, Nelson, Miller, & Krol, 1987; Herman, Perry, & van der Kolk, 1989; Herman & van der Kolk, 1987; Wagner, Linehan, & Wasson, 1989), somatization disorder (Saxe et al., 1994), dissociative disorders (Putnam, 1989; Ross et al., 1991), eating disorders (Garner & Garfinkel, 1985; Root & Fallon, 1988), self-mutilation (van der Kolk, Perry, & Herman, 1991), suicide, high-risk behaviors, and substance abuse (Felitti et al., 1998). Borderline Personality Disorder (BPD), perhaps more than any other diagnosis, has been viewed as a posttraumatic personality and relational adaptation to childhood abuse and neglect including disruptions of attachment and bonding (Kroll, 1993; Linehan, 1993a). Briere (1984), in fact, suggested that BPD be conceptualized as a post-abuse syndrome. In line with this view, Roth and Bateson (1997) reported that patients diagnosed with BPD represent the more severely affected complex PTSD patients. Over the years, specific diagnoses have been proposed in recognition of the range of sequelae associated with chronic childhood traumatization (Terr, 1991; World Health Organization, 1992).

The committee given responsibility for defining PTSD for the DSM-IV identified 27 core symptoms and proposed a diagnostic category referred to as "Disorders of Extreme Stress, Not Otherwise Specified" (DESNOS) (Pelcovitz et al., 1997), which also became known as Complex Posttraumatic Stress Disorder (Herman, 1992a, 1992b). This diagnostic framework, spanning both DSM axes I and II, was carefully evaluated in a series of field trials (Pelcovitz et al., 1997; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997), but was not formally included in the DSM-IV, except in the form of associated features of simple PTSD (American Psychiatric Association, 1994). Support was found for alterations in seven areas: (a) regulation of affect and impulses, (b) attention or consciousness, (c) self-perception, (d) perception of the perpetrator, (e) relations with others, (f) systems of meaning, and (g) somatization. Although the DSM-IV field trials found that DESNOS was comorbid with PTSD (Pelcovitz et al., 1997), other studies have found it to be independent of PTSD. For example, recent research by Ford (1999) demonstrated that a quarter of military veterans seeking inpatient PTSD treatment met criteria for DESNOS or Complex PTSD while failing to meet the diagnostic criteria for simple PTSD. This finding suggests that the "associated features" designation for Complex PTSD may need to be revisited in the future.

Since the DSM-IV field trials, a growing body of empirical research has been directed towards measurement and validation of the DESNOS/Complex PTSD construct, and towards examination of its clinical correlates and effects on associated psychopathology

and treatment outcome (e.g., Ford & Kidd, 1998; for a review, see van der Kolk, Roth, Pelcovitz, Mandel, & Spinazzola, in press). As a result of this research, in conjunction with extensive clinical work with this population, substantial advances have been made in the assessment and differential diagnosis of Complex PTSD (Luxenberg, Spinazzola, & van der Kolk, 2001). While no Complex PTSD treatment outcome studies have been completed to date, one NIMH-funded multisite treatment development study for Complex PTSD is under way (Ford, 2001), and initial guidelines for clinical intervention with this population have been proposed (Luxenberg, Spinazzola, Hidalgo, Hunt, & van der Kolk, 2001; van der Kolk, 2001).

In considering the reported limitations, needs, and challenges of treating the most impaired survivors of chronic childhood abuse and neglect (Briere, 1996; Chu, 1998; Courtois, 1999; Linehan, 1993a; McCann & Pearlman, 1990), this article introduces a specific Eye Movement Desensitization and Reprocessing (EMDR) protocol known as Resource Development and Installation (RDI; Leeds, 1997; Leeds & Shapiro, 2000), which emphasizes stabilization, reparation of attachment and affect regulation deficits, development of coping skills, and strengthening of self-capacities during the initial phase of treatment.

Review of the Treatment Literature

Most psychosocial PTSD treatment outcome studies have focused on combat veterans and adult, single episode trauma survivors (Blake & Sonnenberg, 1998; Solomon, Gerrity, & Muff, 1992; Van Etten & Taylor, 1998) and have not specifically evaluated an identified Complex PTSD population. A meta-analysis and commentary on all of the interventions for PTSD (including pharmaceuticals) by Van Etten and Taylor (1998) found that Selective Serotonin Reuptake Inhibitors (SSRIs), EMDR, and behavior therapy were most effective, but that EMDR was in fact more efficient, requiring less total treatment time. Though controlled studies support EMDR's use for treatment of civilian PTSD (Marcus, Marquis, & Sakai, 1997; Rothbaum, 1997; Scheck, Schaeffer, & Gillette, 1998; Wilson, Becker, & Tinker, 1995, 1997), it is important to note that most of these study participants differ from adults with chronic abuse and neglect histories in terms of symptom presentation and capacity for tolerating trauma-focused work. In a randomized experimental evaluation studying adult female survivors of childhood sexual abuse, Edmond, Rubin, and Wambach (1999) found support for EMDR in reducing trauma-related symptoms. However, neither PTSD nor any other diagnosis was used as a prerequisite for study inclusion; and hence its relevance to an examination of Complex PTSD is, once again, limited. In clinical practice, Complex PTSD patients typically fail to meet readiness criteria for standard EMDR treatment proposed by Shapiro (1995) and present with severe affect dysregulation, a range of self-injurious and dissociative behaviors, and often, with chronic suicidality. In the clinical literature, there are numerous reports of poor treatment response (Follette, Alexander, & Follette, 1991; Herman & Schatzow, 1984), high dropout rates, and increased levels of anxiety (Dye & Roth, 1991; Goodman & Nowak-Scibelli, 1985) in trauma-focused groups for childhood trauma survivors with high levels of pretreatment distress.

Though treatment-outcome data with this population remain scant, there is a remarkable consensus within the professional trauma-treatment literature that therapeutic work with adult survivors of childhood trauma should be phase-oriented, multimodal, and skill-focused (Brown, Scheflin, & Hammond, 1998; Chu, 1998; Courtois, 1999). The consensus model of posttrauma treatment (Courtois, 1999) initially emphasizes stabilization,

personal safety, and development of self and ego capacities (i.e., tolerating and modulating strong affect). Traumatic memories typically become a focus of treatment in the middle or second phase of treatment, and only after adequate gains have been made in the first phase of treatment.

Linehan's (1993a, 1993b) clinical and empirical work with BPD patients is relevant in considering the development of effective treatment modalities for survivors with limited capacities and high levels of distress. Linehan's Dialectical Behavior Therapy (DBT) model includes group-based skill development, reduction of parasuicidal and suicidal behaviors, development of the therapeutic relationship, and alteration of behaviors which interfere with therapy and quality of life. Outcome studies have shown DBT to be more effective than "therapy as usual" in the treatment of many of the problematic behaviors associated with BPD (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Tutek, Heard, & Armstrong, 1994). Other recent studies, controlled (Cloitre, Koenen, Cohen, & Han, in press; Zlotnick et al., 1997) and uncontrolled (Najavits, Weiss, Shaw, & Muenz, 1998), support an early phase, present-centered, group-treatment model emphasizing affect management, safety, interpersonal skills, and self-care for adult survivors of childhood trauma. The empirically evaluated, stabilization-focused group treatments emphasize the development of emotional self-regulation skills for patients where attachment-related issues appear to be at the core of their symptoms (Alexander, 1992; Allen, 1998). Case reports of hypnotic ego-strengthening interventions have suggested that they may be useful when attempting to stabilize complex PTSD and dissociative disorder patients (Frederick & McNeal, 1999; Phillips & Frederick, 1995). However, none of the reports in the hypnotic ego-strengthening literature for this population include standardized assessments or outcome measures. With this background in mind, we describe evidence for EMDR RDI's efficacy for patient stabilization and ego-strengthening in the early phase of treatment of Complex PTSD.

The RDI Protocol

Foundations of the RDI Protocol

Shapiro (1995) described EMDR as an eight-phase treatment approach incorporating (a) patient history, (b) preparation, (c) assessment, (d) desensitization, (e) installation, (f) body scan, (g) closure, and (h) reevaluation. In addition to a unique integration of aspects of psychodynamic, behavioral, cognitive, and experiential therapies, EMDR includes alternating, bilateral stimulation via eye movements, auditory tones, or hand taps. Shapiro has stated that changes in both negative and positive associations appear to occur throughout EMDR reprocessing of targeted memories. Negative imagery, affects, sensations, and beliefs are diffuse and less valid while positive imagery, affects, sensations, and beliefs become more enhanced and strengthened. Shapiro (1995) reported that EMDR trauma-focused processing enables patients to integrate and strengthen positive self-statements with images of effective coping in the future (referred to as future templates). A unique effect of the bilateral stimulation, as reported by Shapiro (1991, 1994, 1995) and a number of others (Fensterheim, 1996; Frederick & McNeal, 1999; Goldstein & Feske, 1994; Rogers & Silver, 2002; Steketee & Goldstein, 1994; Stickgold, 2002), is the rapid production of rich, emotionally vivid associations. Some of these authors have described these associations as leading to substantial decreases in panic in the absence of prolonged or repeated exposure to the initially phobic scene (Goldstein & Feske, 1994; Steketee & Goldstein, 1994) and to changes in the life situation of patients with complex character pathology (Fensterheim, 1996).

Evolution of the RDI Protocol

Francine Shapiro (personal communication, August 10, 1998) reported that early in EMDR's development, Neal Daniels proposed a procedure for combining an image of a safe place with bilateral eye movement to increase combat veterans' feelings of calm and to enhance their ability to successfully engage in subsequent trauma processing. Clinical feedback supported the use of this safe-place procedure, and it was soon introduced as a recommended part of the preparation phase of EMDR treatment (Shapiro, 1995). Subsequent to Daniels's suggestion, a number of EMDR innovators reported clinical benefits from incorporating alternating, bilateral stimulation for enhancing positive (or "functional") memories (Greenwald, 1993a, 1993b; Martinez, 1991; Wildwind, 1992). To bring more attention to these potential ego-strengthening benefits, Leeds (1995) introduced the term *Resource Development and Installation*, along with proposed principles for the use of bilateral stimulation with positive images, memories, and symbols. Leeds selected the term *installation* to parallel the terminology used by Shapiro for the installation phase of EMDR treatment. In this phase, the patient is asked to focus on a desensitized memory no longer associated with emotional distress, together with a positive self-assessment (e.g., "I am worthy") while attending to one or more sets of bilateral stimulation.

Leeds (1995) incorporated aspects of several well-established ego-strengthening traditions (i.e., hypnosis, therapeutic relationship, skill development) (Baker, 1981, 1983; Brown et al., 1998; Frederick & McNeal, 1999; Hovarth, Gaston, & Luborsky, 1993; Linehan, 1993a, 1993b) into his RDI model (Leeds, 1997). RDI is most similar to ego-strengthening methods in the hypnotherapeutic tradition, particularly the permissive approaches (Brown & Fromm, 1986; Erickson, Rossi, & Rossi, 1976). It also is compatible with DBT and other relationally and skill-focused models.

RDI refers to a set of EMDR-related protocols which focus exclusively on strengthening connections to resources in functional (positive) "memory networks" (Leeds & Shapiro, 2000; Shapiro, 1995) while deliberately not stimulating dysfunctional (traumatic) memory networks. The addition of bilateral stimulation differentiates RDI from earlier hypnotic ego-strengthening methods in the hypnotherapeutic tradition. Again, the inclusion of the bilateral stimulation in the protocol appears to lead to spontaneous, rapid increases in affective intensity within an initially selected memory network and to rich, emotionally vivid associations to other functional (positive) memory networks. These increases in intensity of positive emotions and new functional associations bring additional ego-strengthening material into consciousness. Patient reports of these changes during RDI lead to other RDI procedural steps that may further reinforce the patient's ability to access affective, cognitive, and behavioral coping skills linked to these functional memory networks when the patient is later confronted by stress-related stimuli.

In contrast to the standard EMDR procedure (Shapiro, 1995), which calls for 24 to 36 or more bidirectional movements per set, in RDI, shorter sets of six to twelve bidirectional movements are used. As described earlier, a pronounced effect of the bilateral stimulation is to increase association to weakly associated (i.e., dissociated) memory networks. For this reason, shorter sequences of bidirectional movements are used in RDI to allow associations to only the most strongly associated, positive, functional memories. Each sequence of bidirectional stimulation is stopped before associations to more weakly associated, dysfunctional (traumatic) memory networks take place. These clinically observed effects are consistent with existing research and theoretical models on state-specific memory models (Bower, 1981; Putnam, 1997), which describe greater functional ease at recalling memories or enacting behaviors which share state features with the present state.

The Basic EMDR RDI Protocol

RDI is a creative and flexible procedure that must be adapted to the unique needs of each patient. The following is a general script.

1. Identifying Needed Resources

"I'd like you to think about a particularly challenging situation in your current life. Perhaps you would want to think about therapy and the challenge of facing your trauma. Perhaps you're facing a challenging situation with a particular person in your life. When you think about this situation, what qualities, resources, or strengths are you missing? What do you need? What would you like to believe about yourself in this situation? How would you like to feel?"

Possible answers are: "I'd like to feel stronger, safer, more connected, more grounded, more confident, more courageous, more self-trusting, more hopeful, more determined, more flexible. I need to strengthen my sense of commitment to this process of healing. I want to believe in myself. I want to be able to soothe myself. I want to be able to tolerate and manage my feelings. I want to have better boundaries. I want to feel lovable."

2. Resource Development—Exploring Various Types of Resources

Mastery Experiences and Images. "Think of a time when you felt _____ (i.e., strong, safe, confident, soothed, able to tolerate your feelings). Think of a time when your were able to behave with more _____ (i.e., courage, self-trust, flexibility). What experiences capture that desired quality or feeling?" Are there parts of yourself that you rely on (i.e., your wise self, professional self, warrior self). Can you see an image of yourself in the future possessing the qualities or resources that you desire?

Relational Resources (Models and Supportive Figures). "Think of people in your life, now or in the past, who possess or embody this quality. Think of who you would want in your corner, cheering you on, coaching you, helping you to feel _____ (i.e., stronger, supported, more confident, etc.). Think about friends, relatives, teachers, caregivers, therapists. Think of any people out there in the world who possess or embody this quality, who serve or could serve as a role model for you (i.e., TV stars, public figures, or characters in books, movies, or cartoons). Think about your mentors, people who have made a difference in your life. Do you have a spiritual guide, someone or something that gives you hope or strength along the way? Are there any animals or pets that you associate with these positive feelings or qualities?"

Metaphors and Symbolic Resources. "Think of any other images, symbols, or metaphors that would help you to feel _____ (i.e., soothed, loved, connected, protected, contained, peaceful, etc.). Think of any positive images or symbols that have come up in your artwork, dreams or daydreams, or guided imagery exercises (i.e., a strong yet flexible tree)."

3. Resource Development—Accessing More Information

(Working with one resource image or association at a time . . .) "When you think about that _____ (i.e., experience, person, symbol, etc.), what do you see? What do you

hear? What do you smell? What emotions do you notice as you focus on this image or memory? What sensations do you experience in your body?

4. Checking the Resource

"When you focus on _____ (repeat description of image) and notice the _____ (repeat description of feelings, sensations, smells, sounds, etc.), how do you feel?" (Check whether the association is, in fact, positive. Verify whether patient can attend to and tolerate a connection to the resource without negative associations or affects.)

5. Resource Installation

"Now, focus on _____ (repeat the patient's verbatim description of the image and associated emotions and sensations) and follow my fingers (or tones, lights, taps, etc.)" (The clinician then provides several short sets of bilateral stimulation with 6–12 complete movements in each set. After each set of bilateral stimulation, the clinician makes a general inquiry.) "What are you feeling or noticing now?" (The bilateral stimulation is not continued if the patient reports negative associations or affect. The negative material is either contained imaginally (i.e., in a box, vault, etc. before proceeding or the process is started over with an alternate resource association).

6. Strengthening the Resource—Linking with Verbal or Sensory Cues

"Imagine going a step further in connecting with this resource. As you remember that experience (i.e., for mastery experiences), what are the most positive words you can say about yourself now? Imagine that person (i.e., for models or supportive figures) standing near you and offering you what you need. Imagine that he or she knows exactly what to say to you, exactly what you need to hear. Imagine merging with this person or stepping right into his or her body. Imagine holding this resource (i.e., for a metaphoric or symbolic resource) in your hands. Imagine being surrounded by this image or feeling. Breathe this feeling in. Notice where you feel the positive quality in your body." (Continue with sets of bilateral stimulation as long as processing appears helpful.)

7. Establishing a Future Template

"Think about possessing this resource in the future as you face _____ (describe the challenging situation identified earlier). Imagine possessing the _____ (i.e., courage, strength, boundaries) you need to cope effectively. Imagine feeling _____ (i.e., confident, peaceful, grounded) in the scene. Imagine feeling connected with _____ (i.e., name their supportive person or relational resource) as you face this challenging situation. Notice what that would be like for you. Hear your resource person saying exactly what you need to hear. Feel your resource (i.e., for metaphoric or symbolic resources) in just the way you need to feel it. Be aware of your resource in just the way you need to experience it." (Continue with short sets of bilateral stimulation as long as processing appears helpful).

This process may be repeated for each of the qualities the patient wants to strengthen. In future sessions, the clinician should check resources that have been installed as well as the patient's written log for any feedback. When the patient is ready for stage two, trauma-focused work, the clinician can begin the session by first bringing in and strengthening

(with bilateral stimulation) the resources needed to address the traumatic material. During trauma-focused EMDR reprocessing, the clinician may use previously installed resources as cognitive interweaves which Shapiro (1995, pp. 244–271) defined as strategies "to introduce new information or a new perspective" when "spontaneous processing is insufficient for the achievement of therapeutic goals."

Two Single-Subject-Design Case Reports

The following two case reports provide preliminary descriptive evidence to support the use of EMDR RDI in the stabilization phase of treatment with adult survivors of childhood neglect and abuse.

Participants

Both patients were self-referred and seen in the first author's practice. Both patients reported histories of childhood neglect and abuse and met criteria for Complex PTSD/DESNOS as determined by the Structured Interview for Disorders of Extreme Stress (Pelcovitz et al., 1997). Both met DSM-IV (American Psychiatric Association, 1994) criteria for PTSD, Major Depressive Disorder, and BPD.

Patient 1 is a 39-year-old, divorced, obese, full-time employed woman with no previous history of inpatient or outpatient treatment. A college graduate living alone and working as a bank teller, she had left several jobs due to her inability to tolerate the stress associated with work. She reports sexual abuse by her father from ages 4 through 12 and emotional abuse and neglect by both parents throughout childhood. Patient 1 describes herself as "shy, scared of the world, fragile, and a failure."

Patient 2 is a 31-year-old, single, full-time employed, junior college graduate living with her boyfriend. She is a secretary and assistant office manager; she has been fired from jobs in the past due to "personality conflicts and temper tantrums." She has been in treatment once before (ages 28–30) and has had two inpatient psychiatric hospitalizations (ages 28 and 29). She was physically abused by her alcoholic father from an early age until she left home at age 16. She reports neglect and emotional abuse from both parents and witnessed her father beating her siblings and mother on many occasions. Patient 2 describes herself as similar to her father, "angry, easily irritated, unfaithful, impulsive, and self-destructive." She has been clean and sober for almost 3 years, with a history of substance abuse dating back to age 14.

Measures

The Trauma Symptom Inventory (TSI; Briere, 1995), Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994), and consent forms were completed during the first session. Since the SCL-90-R has good test-retest reliability (Derogatis, 1994), it is reasonable to consider external variables with confidence when evaluating potential factors responsible for test-retest variability. Test-retest reliability information was not available for the TSI (Briere, 1995). While the SCL-90-R does not have formal validity scales, the TSI has three validity scales.

Target behaviors were identified during the first session. Both patients agreed to collect daily behavioral baseline data for three weeks and throughout the RDI treatment and follow-up phases.

Procedures and Design

During the baseline phase, patients were seen for weekly 90-min sessions with the focus on assessment, history taking, and treatment planning. During the three-week treatment phase, resources were developed and installed with respect to target behaviors and stabilization goals in weekly 90-min RDI sessions.

The standard RDI protocol was used. Prior to starting this study, the first author's fidelity in the use of the standard RDI protocol was validated by the second author (who developed the RDI protocol) through a review of videotaped treatment sessions. Posttreatment scores on the SCL-90-R and TSI were obtained at the start of Session 7.

Patients were seen for weekly psychotherapy sessions during the four-week follow-up phase, but RDI interventions were not used. Treatment was supportive with brief cognitive–behavioral interventions (i.e., problem solving, breathing instruction, and psychoeducation) introduced as needed. A week of follow-up behavioral data was gathered at one-month posttreatment.

For each behavioral measure, daily measures were analyzed using ANOVA to compare the three periods: baseline phase, RDI treatment phase, and follow-up week. Additional predictors were included in the model to measure trends during the baseline phase and during the treatment phase.

Baseline Presentation and Behavioral Targets

Patient 1 initially presented with complaints of depression, generalized anxiety, PTSD symptoms, and "out of control" binge eating. She described herself as "self-blaming, self-hating, and self-sacrificing" and appeared to regularly suppress anger. She reported she had avoided intimate and sexual relationships with men since her divorce several years earlier. The binge eating became the focus of treatment as it perpetuated her self-hatred and sense of hopelessness. In completing a behavioral chain analysis, the patient identified a pattern of increased negative self-statements in response to perceived failures, rejections, or difficulties, followed by an increased sense of depression or "misery," followed by overeating. In turn, her binge eating would intensify her negative self-statements and experience of "misery." She stated "I can't get out of the cycle. I'm always feeling out of control and miserable, and often, I just wish that I were dead." She clearly identified self-soothing as the function of overeating. Patient 1 agreed to take daily baseline measurements on (a) negative self-statement episodes, (b) intensity of "misery," and (c) episodes of binge eating.

Patient 2 initially presented with reports of uncontrollable angry outbursts, depression, generalized anxiety, PTSD symptoms, relationship conflict, and self-injurious behavior (cutting with a razor, digging her nails into her arm, hitting herself, puncturing her skin with pins). She described herself as "full of self-loathing and always on the verge of exploding." Her emotional dysregulation and associated behaviors became the focus of treatment. A behavioral chain analysis revealed a pattern of increased negative self-statements in response to perceived disappointments, obstacles, losses, and failures followed by angry outbursts, and then, self-injury. She explained that self-injury was either an attempt to punish herself for losing control or an attempt to reduce tension. Patient 2 agreed to gather daily baseline measurements on (a) negative self-statement episodes, (b) angry outbursts, and (c) self-injurious behavior episodes.

Treatment

In the first RDI treatment session, the qualities desired and associated resource images for each patient were identified and at least two resources were installed and incorporated into a future template (Shapiro, 1995). In each of the subsequent treatment sessions, two to four resources were installed with a continued emphasis on incorporating future template work for generalization. The resources were developed and installed in the order described later.

Patient 1 stated that she wanted to increase her capacity for self-acceptance and healthy self-soothing. She wanted to be able to experience a connection to the qualities of "joy and gratitude" even when "having a bad day." Two types of resources associated with self-acceptance were installed. First, two separate memories of times when she had felt positively about herself and her accomplishments became the focus. The focus then shifted to an exploration of significant others who had expressed acceptance of her over time. At first, Patient 1 could only identify one person in her entire life who had offered unconditional acceptance and caring—her maternal aunt. After Patient 1 was asked to focus on the positive images, emotions, and sensations associated with her maternal aunt and sets of eye movements were introduced, she spontaneously reported memories or images of other positive figures representing unconditional acceptance and/or validation in her life—her high school guidance counselor and the poet, Maya Angelou. This rapid strengthening of associations to other personally relevant memories, images, and beliefs appears to be one of the hallmark differences between RDI and hypnotic interventions for mastery.

PATIENT 1: My aunt really cared about me. No matter what. She understood me and believed in me. My whole body relaxes when I think of her. I could almost cry.
THERAPIST: Stay with that. And hear her voice if you'd like. (EM)
PATIENT 1: You know, I had a guidance counselor who also really believed in me and I wasn't a great student. I can see her smiling at me. I still write to her about once a year.
THERAPIST: Stay with that. Hear her voice if you'd like. (EM)
PATIENT 1: That's why I read Maya Angelou's books. They're all about accepting yourself for who you are. Maya is a proud, self-accepting woman. I heard her speak last year. I felt like she was talking right to me.

To address Patient 1's desire to increase adaptive self-soothing capacities, the following resources were installed: the image (and smell) of crayons, the image (and smells and sensations) associated with sitting in a natural sulfur spring, and the image (and smells and sensations) associated with sitting in the sunshine surrounded by fragrant wild flowers. Finally, to capture the experience of joy and pure enjoyment, the memory of riding a roller coaster was installed as she remembered herself screaming and laughing with her friend's teenage daughter at her side. All of these resources were incorporated into future templates in which she imaginally rehearsed the use of appropriate resource(s) in future difficult situations with bilateral stimulation.

Patient 2 stated that she wanted to be able to maintain a sense of calm and self-control in the face of triggers, to "let things go and not take them so personally." She wanted to increase her patience, to be able to forgive herself and others more readily, and to be able to discharge emotional pain and tension without hurting herself or others. Resources associated with a sense of calm were cultivated and installed: the image (and sounds and smells) of a mountain-top lake surrounded by lush greenery and the image of

the Dalai Lama. To enhance her capacity "to let things go" and to reduce or release tension safely, the following resources were installed: a raft floating down a river carrying excessive feelings or reactions, a science-fiction character discharging laser bolts through his fingertips, and a melting ice cube. Finally, to increase a sense of self-control and patience, the following resources were utilized: a tree firmly rooted in the earth, bending and swaying in the wind without breaking, and her previous therapist saying to her, "Live and let live." All resources were imaginally rehearsed through future template installations with bilateral stimulation.

Results

Figures 1 and 2 display daily data for each patient's target behaviors across baseline, treatment, and follow-up phases. To assist with the visual inspection and evaluation of the data, means were calculated separately for each phase (baseline and treatment), and mean lines were plotted based on recommendations offered by Bloom, Fischer, and Orme (1999).

With both patients, a stable trend for all three target behaviors was established during the baseline phase. There was no significant trend across time in any target behavior

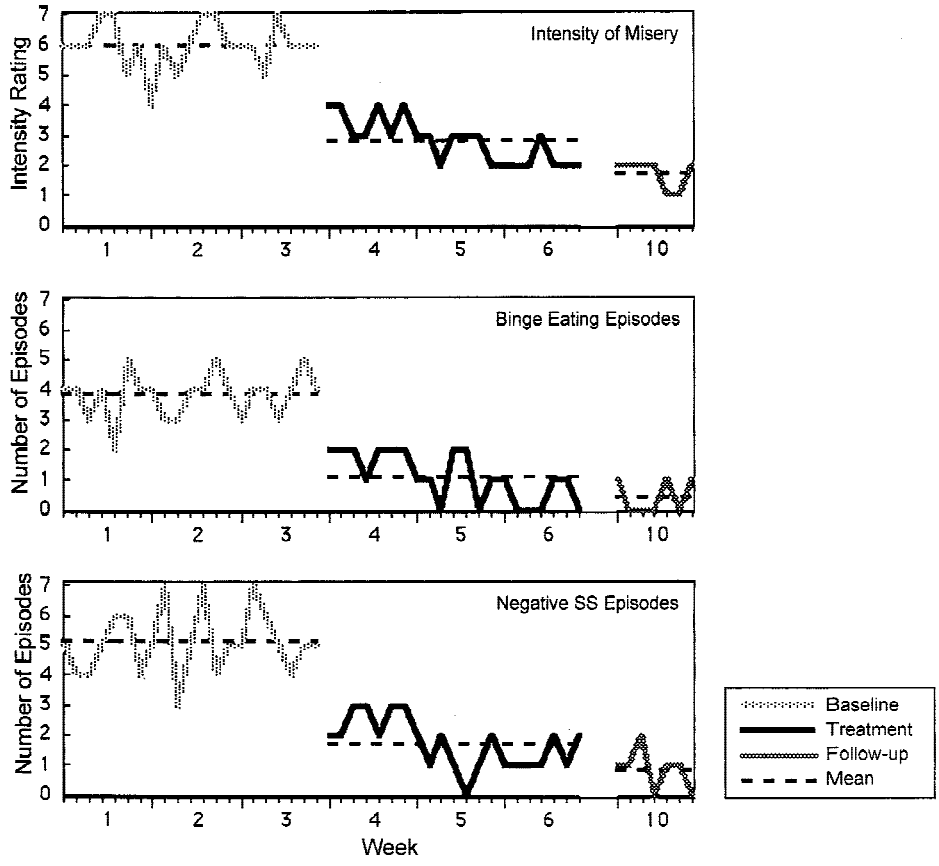

Figure 1. Patient 1 symptom alleviation across time. Intensity of "misery" scores (0–7 self-rating scale), binge eating episodes (middle), and negative self-statement episodes (bottom) are shown for Patient 1 across three baseline weeks, three weeks of treatment, and one week of posttreatment follow-up.

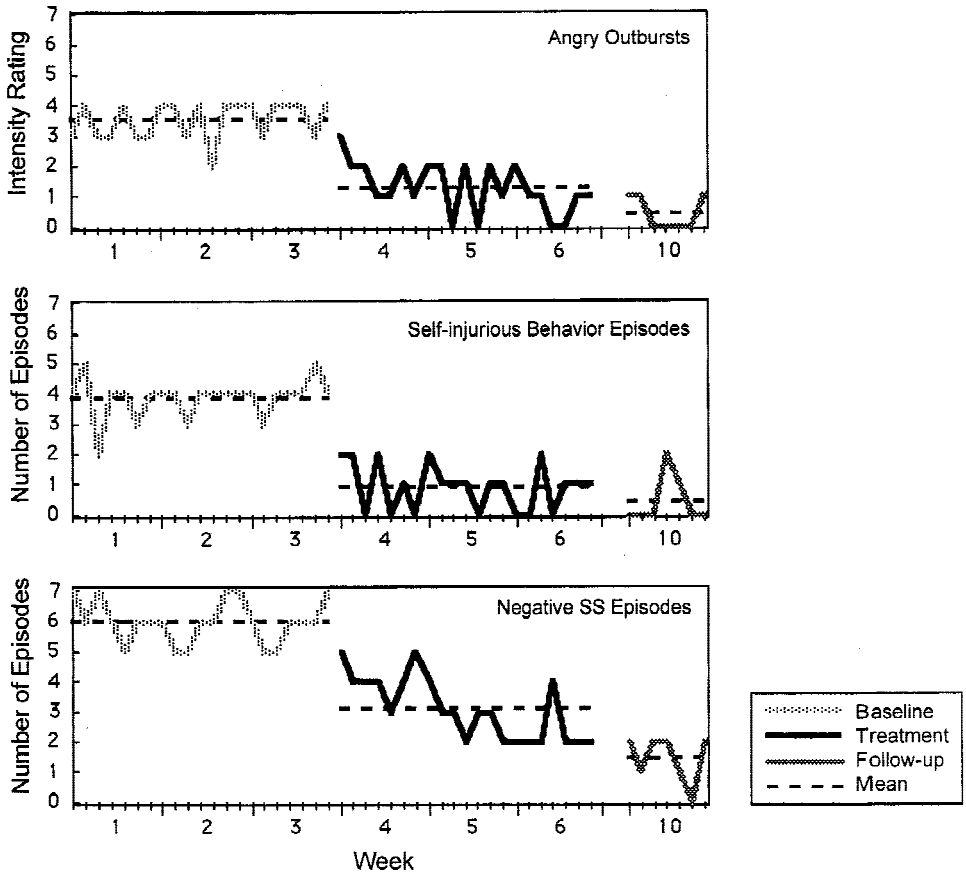

Figure 2. Patient 2 symptom alleviation across time. Angry outbursts (top), self-injurious behavior episodes (middle), and negative self-statement episodes (bottom) are shown for Patient 2 across three baseline weeks, three weeks of treatment, and one week of posttreatment follow-up.

during the baseline phase. Upon introduction of the RDI intervention, both patients showed considerable decreases in the frequency and/or intensity of target behaviors. Levels of all behaviors during treatment were significantly lower than pretreatment levels ($p < .0001$). It also appears that the frequency and/or intensity of target behaviors showed a decreasing trend across treatment sessions. For all behaviors other than self-injurious behaviors, the decrease during treatment sessions was statistically significant ($p < .05$). Pure behavioral responses (binge eating, angry outbursts, self-injurious behavior) showed a faster drop to the mean (noted during the first week following the introduction of RDI) in both cases. Measures reflecting cognitive or emotional responses (negative self-statement episodes, intensity of misery) showed a slower trend toward the mean (coming down across a two-week period following the introduction of RDI) in both cases. For both patients, treatment means for daily target behaviors were at least 50% less than baseline means. In several cases, treatment means were 75% less than baseline means (Patient 1: binge-eating episodes; Patient 2: angry outbursts, self-injurious behavior episodes).

Follow-up data, gathered one month after the completion of RDI, showed a maintenance of treatment gains for both patients across all target behaviors, with some behav-

iors reaching lower intensity or frequency levels than reported during the treatment phase. For all behaviors other than self-injurious ones, the decrease during treatment sessions was statistically significant ($p < .05$). As mentioned earlier, during the four-week follow-up period, no new resources were specifically developed or installed with EMDR bilateral stimulation and methodology. However, other brief cognitive–behavioral and didactic interventions (i.e., problem solving in response to environmental crises, relaxation training, psychoeducation) were introduced as needed during this four-week period. In inspecting the data, it can be stated that change clearly occurred across time and phases and that this change, in fact, remained stable.

Both patients also showed clinically relevant changes on several clinical scales of the SCL-90-R and the TSI. For this chronic population, a criterion of 5 T-score points (or one half a *SD*) was established by the authors for change to be considered clinically relevant from pre- to posttreatment. Both patients appear to have had valid TSI and SCL-90-R profiles.

Figures 3 and 4 show the pre- and posttreatment scores for both patients on all clinical scales where there were T-score changes of 5 points or more on the SCL-90-R and the TSI. Tables 1 and 2 show all pre- and posttreatment scores on the SCL-90-R and the TSI.

The Outpatient Psychiatric Female norm group was used for evaluating both patients' responses on the SCL-90-R. For Patient 1, 10 of 12 dimensions on the SCL-90-R decreased from pre- to posttreatment, with four dimensions (Depression, Anxiety, Global Severity Index, and Positive Symptom Distress Index) decreasing 5 or more T-score points. Two of 12 dimensions (Hostility and Paranoid Ideation) showed no change. Patient 1's Depression T score dropped over 1 *SD* to 50 by posttreatment, placing her in the 50th percentile of the normative sample. Her decrease on the Anxiety dimension to 53 also brought her close to the 50th percentile for that construct. The Global Severity Index (GSI) is the single most sensitive numeric indicator of a patient's psychological status, combining information on the number of symptoms endorsed and the perceived intensity of distress. The Positive Symptom Distress Index (PSDI) represents a pure symptom intensity measure. Both of these scales showed clinically significant reductions, indicating an overall decrease in psychological distress. Patient 1's PSDI was actually below the T-score mean for the chosen norm group by posttreatment.

On the TSI, Patient 1 showed a decrease in T scores in 7 of 10 clinical scales, with four scales (Anxious Arousal, Depression, Defensive Avoidance, and Dissociation) decreasing 5 or more T-score points. Two scales showed no change (Impaired Self-Reference and Tension Reduction Behavior), and one scale (Anger/Irritability) showed a minimal increase. For all TSI clinical scales, T scores at or above 65 are viewed as clinically significant. Patient 1's Anxious Arousal score fell into the nonclinically significant range by posttreatment. Her Depression score was just at the clinically significant cutoff point at posttreatment evaluation, dropping over 1 *SD* (10 T-score points) from pretreatment evaluation.

For Patient 2, 9 of 12 dimensions on the SCL-90-R decreased from pre- to posttreatment, with four dimensions (Depression, Hostility, Global Severity Index, Positive Symptom Distress Index) decreasing 5 or more T-score points. Two of 12 dimensions (Phobic Anxiety and Positive Symptom Total) showed no change and one dimension (Obsessive-Compulsive) showed a minimal increase. Patient 2 also experienced a clinically significant reduction on the Depression dimension, dropping 1 *SD* to 51 by posttreatment. Reductions on the GSI and PSDI dimensions brought the patient closer to the mean for the normative sample and, as with Patient 1, indicated a clinically relevant shift toward a more manageable level of psychological distress.

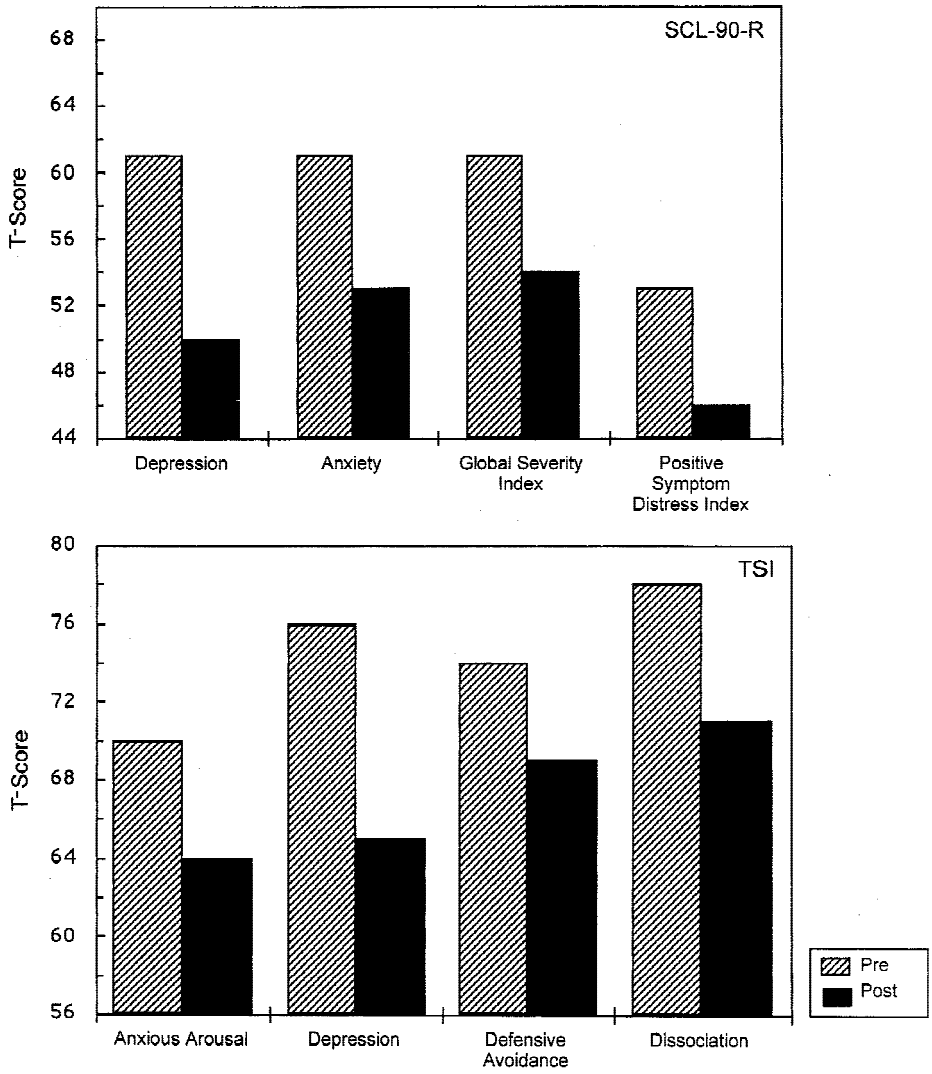

Figure 3. Overall improvement of Patient 1. Consistent decreases from the pre- to the posttreatment period for Patient 1 are shown for SCL-90-R primary symptom dimensions and global indices (top) and for TSI clinical scales (bottom).

On the TSI, Patient 2 showed a decrease in T scores on 6 of 10 clinical scales, with four scales (Depression, Anger/Irritability, Dysfunctional Sexual Behavior, and Tension Reduction Behavior) decreasing 5 or more T-score points from pre- to posttreatment. Four scales (Intrusive Experiences, Defensive Avoidance, Sexual Concerns, and Impaired Self-Reference) showed no change. Patient 2's Depression and Anger/Irritability T scores fell into the nonclinically significant range by posttreatment. The Anger/Irritability score dropped more than 1 *SD* by posttreatment. Dysfunctional Sexual Behavior and Tension Reduction Behavior scores remained in the clinically significant range despite the fact that they both dropped over 1 T-score *SD* from pretreatment.

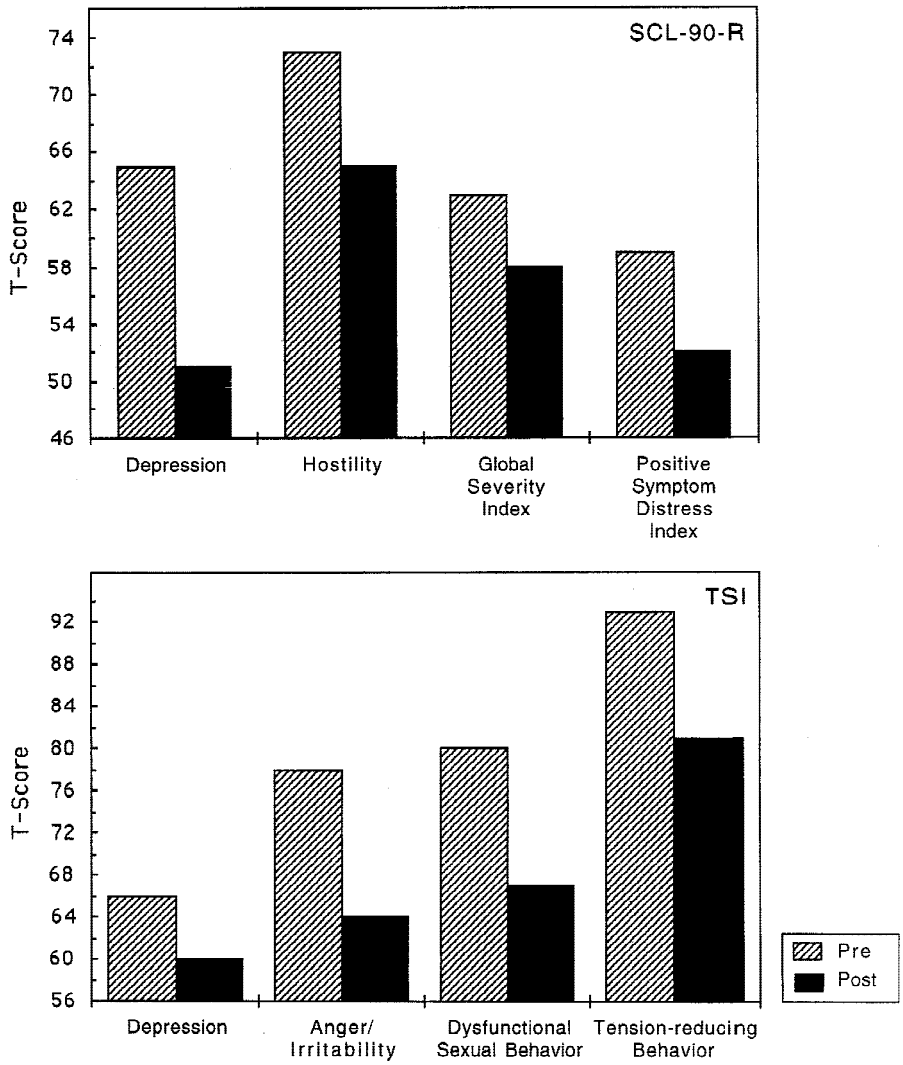

Figure 4. Overall improvement of Patient 2. Consistent decreases from the pre- to the posttreatment period for Patient 2 are shown for SCL-90-R primary symptom dimensions and global indices (top) and for TSI clinical scales (bottom).

Discussion and Suggestions for Future Research

Both patients showed clinically significant changes from baseline through treatment on targeted behaviors and psychological constructs. When behavioral data were gathered at a one-month follow-up, behavioral gains appeared to have been maintained. The very limited AB design of this practice-based study does not permit definitive conclusions about RDI or any other potential agents of change with respect to these Complex PTSD cases. However, similar patterns of change across both patients and rapid reduction of certain behaviors almost immediately after the introduction of RDI strongly suggest that RDI holds promise as an ego-strengthening, stabilization intervention with survivors of childhood abuse and neglect who meet criteria for the proposed Complex PTSD/

Table 1
Improvement on SCL-90-R Subscales From Pretreatment to Posttreatment Periods

	Patient 1: T-Scores			Patient 2: T-Scores		
Subscale	Pre	Post	Change	Pre	Post	Change
Somatic	58	55	−3	57	55	−2
Obsessive-Compulsive	55	51	−4	50	51	+1
Impaired Self-Reference	62	59	−3	65	61	−4
Depression	61	50	−11	65	51	−14
Anxiety	61	53	−8	61	58	−3
Hostility	48	48	0	73	65	−8
Phobic Anxiety	56	54	−2	56	56	0
Paranoid Ideation	55	55	0	68	65	−3
Psychotic	64	61	−3	60	58	−2
Global Severity Index	61	54	−7	63	58	−5
Positive Symptom Distress Index	53	46	−7	59	52	−7
Positive Symptom Total	65	63	−2	63	63	0

Note. Subscales 1 to 9 reflect primary symptom dimensions; Subscales 10 to 12 reflect global indices of distress. For description of subscales, see Derogatis (1994).

DESNOS diagnosis. Clinical experience with RDI suggests that treatment gains from skill-focused and relational work may be further enhanced with RDI procedures and that its applicability is certainly not restricted to a Complex PTSD population.

With both patients, behavior changes seemed to precede changes in cognitive patterns (intensive negative self-talk) or reductions in intensity of emotional experience (misery). Perhaps this highlights the importance of increasing self-efficacy and mastery with individuals who have encountered chronic powerlessness, failure, and disappointment (Peterson, Maier, & Seligman, 1993; Seligman, 1990). The focus on strengthening resources which could interrupt the behavioral chain seemed effective in reducing both affective and cognitive distress to trauma-related triggers.

Table 2
Improvement on TSI Clinical Scales From Pretreatment to Posttreatment Periods

	Patient 1: T-Scores			Patient 2: T-Scores		
Subscale	Pre	Post	Change	Pre	Post	Change
Anxious Arousal	70	64	−6	62	58	−4
Depression	76	65	−11	66	60	−6
Anger/Irritability	43	45	+2	78	64	−14
Intrusive Experiences	70	66	−4	72	72	0
Defensive Avoidance	74	69	−5	69	69	0
Dissociation	78	71	−7	75	73	−2
Sexual Concerns	48	44	−4	67	67	0
Dysfunctional Sexual Behavior	45	44	−1	80	67	−13
Impaired Self-Reference	64	64	0	58	58	0
Tension Reduction Behavior	48	48	0	93	81	−12

Note. For description of clinical scales, see Briere (1995).

A number of the avoidant and hyperarousal symptoms of chronic PTSD appear to have improved by posttreatment. Thus, measures of symptoms related to anxiety, depression, anger, and overall affective dysregulation (notably dissociation, tension-reduction behavior, binge eating, cognitive and behavioral avoidance, dysfunctional sexual behavior) generally improved by posttreatment. While the intrusive symptoms of PTSD did not improve in a clinically significant way for either patient, these symptoms have been shown to respond to the standard EMDR PTSD protocol (Marcus et al., 1997; Rothbaum, 1997; Scheck et al., 1998; Wilson et al., 1995, 1997). Indeed, after sufficient stabilization and preparation with RDI, these intrusive symptoms were addressed in subsequent sessions with these patients with the standard EMDR PTSD protocol. The results of this study appear to support the consensus phase-oriented model's view that patients benefit from being more grounded, affectively regulated, and behaviorally stable prior to addressing trauma-based material in a direct manner.

Of particular note is the effect of RDI on decreasing Patient 1's binge-eating episodes and the associated significant reductions in the level of her anxiety and depression. She also reported feeling "less overwhelmed and fragile and more present in the world;" this subjective report is supported by the reductions in Defensive Avoidance and Dissociation on the TSI. With additional coping skills and somewhat increased behavioral control (over binge eating), she reported feeling more hopeful and motivated. When asked, she attributed her decreased distress and increased capacity to cope and self-soothe in adaptive ways to the RDI work. She reported that she regularly and spontaneously hears the voices of Maya Angelou and her maternal aunt, and that she deliberately calls upon self-soothing and "joyous" resources to help her refrain from binge eating. Patient 1's subsequent clinical work involved a flexible and integrated (i.e., responding to the patient's need for pacing, ego-strengthening, and modulation) use of both the RDI and the standard EMDR PTSD protocols throughout the course of treatment. Patient 1 achieved all of her stated treatment goals in approximately 18 months.

Patient 2 reported significant reductions in depression, anger, sexually promiscuous behavior, and self-injurious behavior. When asked, she commented that her behavior was less "out of control" (referring to angry outbursts) and consequently her guilt, shame, and self-hatred had decreased. As a result, she felt better able to reduce her self-injury. She declared, "everything is slowed down and softer." Patient 2 was able to address much of her traumatic history using the standard EMDR PTSD protocol following an extended focus on RDI. Again, an integrated and flexible use of the RDI and standard EMDR PTSD protocols enabled this patient to make considerable progress toward treatment goals by the time she moved out of state approximately 11 months after the start of treatment.

In the future, it would be useful for others to replicate the basic AB design of this study using repeated measures relevant to Complex PTSD through the follow-up phase. The Structured Interview for Disorders of Extreme Stress (Pelcovitz et al., 1997), a relatively new instrument, could be used for repeated measures. Multiple baseline designs and standard experimental group designs offer greater possibilities for drawing definitive conclusions about the value and applicability of RDI in the stabilization phase of Complex PTSD treatment.

Survivors of childhood neglect and abuse often meet criteria for a variety of diagnoses (in addition to PTSD or Complex PTSD) such as eating disorders, borderline personality disorder, substance abuse, depression, and generalized anxiety disorder. The positive effects observed in this study on binge eating, depression, anxiety and impulse control over rage and sexual acting out suggest that further study may be warranted in populations with these symptoms. For patients (i.e., comorbid BPD or Dissociative Identity

Disorder) with extremely limited self-capacities (i.e., affect tolerance), alternate strategies focusing on gradual development of resources and affect tolerance capacities may be required. A description of those strategies is beyond the scope of the present article. Differential diagnosis, case formulation, treatment planning, and supervised training in EMDR are essential for the safe and effective use of RDI with such complex cases.

In this study, the changes observed across phases and from pre- to posttreatment could have been caused by expectancy effects, the demand characteristics of the therapist, and/or the patients' desire to please the therapist. However, the continued decrease in symptoms as measured during the follow-up period somewhat lessens the probability of these effects. Results also could have been related to changes in environmental factors (i.e., the start of Spring and a change in weather). Similar changes in noncontiguous subjects mitigates against this factor. Future research designs should control for these factors to ascertain the impact of RDI versus extraneous factors.

Future research designs might compare RDI with hypnotic mastery and ego-strengthening strategies or with cognitive–behavioral methods to evaluate differential treatment effects. While the RDI protocol uses imagery and repetition, the observed effects of bilateral stimulation in these case studies and earlier reports suggest that RDI enhances patients' ability to access and integrate functional memory networks across changes in state. EMDR outcome research with PTSD subjects by Wilson, Silver, Covi, and Foster (1996) showed a type of "compelled relaxation response" in the eye movement condition, but not in control conditions. Such relaxation responses have been previously associated with increased vividness of imagery (Mitchell & Lundy, 1986). Investigating the effectiveness of RDI with trauma survivors who meet criteria for Complex PTSD/DESNOS versus those who do not meet these criteria (but meet criteria for PTSD) also might prove useful, especially in light of Ford's (1999) findings on discrete PTSD and DESNOS populations. Finally, validation of treating clinicians' proficiency prior to commencing research and the use of fidelity checks also are recommended to assess and insure the appropriate use of the RDI protocol.

One intriguing prospect is the potential for integrating EMDR RDI with other stabilization or ego-strengthening approaches. For example, EMDR RDI, within the context of a DBT program, can be used to enhance skills and reinforce critical concepts. Mindfulness capacities, for example, are seen as fundamental to DBT skills use. During RDI, patients are encouraged to "just notice," to be mindful of present thoughts, sensory experiences, and emotions. Titrated approaches (i.e., short sets of bilateral stimulation) appear to allow patients to develop the capacity to tolerate positive arousal states without withdrawing, dissociating, or impulsively acting to end such exposure. In DBT, patients are encouraged to connect with and respond from their "wise mind" as they develop mindfulness skills. "Wise mind" could be enhanced by the development and installation of attachment figures from one's life who represent wise beings or role models. Clinical experience indicates that behavioral rehearsal in DBT can be enhanced through the installation of future templates with EMDR. Distress tolerance and emotion regulation skills can be strengthened through EMDR by developing and installing resources that facilitate calming, containment, grounding, and a sense of safety.

In conclusion, the results of this study together with extensive clinical, anecdotal data from EMDR clinicians (Leeds, 1998) suggest that RDI can be effective in reducing distress and associated behaviors in Complex PTSD patients while increasing self-capacities and readiness for middle phase, trauma-focused work with the EMDR PTSD protocol. Given the extreme difficulty of working with this complex population and the absence of individual treatment-outcome studies, further research is warranted on this highly promising intervention.

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