EMDR Treatment of Distressful Experiences That Fail to Meet the Criteria for PTSD

Robert Cvetek
University of Ljubljana, Slovenia

Eye movement desensitization and reprocessing (EMDR) is thought to successfully treat not only posttraumatic stress disorder (PTSD) but also other psychiatric disorders and mental health problems inasmuch as these have experiential contributions. This randomized clinical trial investigated the effects of treatment of distressful experiences (or small "t" trauma) that fail to meet the criteria for PTSD. Three hours of a slightly adapted form of EMDR were compared to active listening (attentional placebo, also 3 hours) and wait list. Results with 90 participants showed that EMDR produced significantly lower scores on the Impact of Event Scale than active listening or wait list. EMDR also resulted in a significantly smaller increase on the State-Trait Anxiety Inventory (State subscale) after memory recall. Some limitations and implications of findings are discussed.

Keywords: EMDR; effectiveness; dysfunctionally stored stressful experiences; small "t" trauma; randomized clinical trial

Memory research indicates that the brain is normally unable to precisely reproduce the imprints of previous experiences (van der Kolk, 2002). Instead of being an accurate recollection, memories are usually transformed into stories that people tell themselves and others. Traumatic memories, however, are coded in the brain differently from normal experiences (Rauch et al., 1996; Shin et al., 1999; van der Kolk, 1994; van der Kolk, Hopper, & Osterman, 2001). Specific feelings, images, sensations, and muscle reactions that are parts of trauma are "deeply imprinted" (van der Kolk, 2002, p. 57) in the memory of traumatized individuals. These traumatic imprints may be reexperienced without any major transformation months, years, and even decades after the event (e.g., van der Kolk, 1994; van der Kolk & Fisler, 1995; van der Kolk et al., 2001), and a person experiences them when the memory of the trauma is triggered.

In order for an incident to meet the criteria for a "traumatic event" in the diagnosis of posttraumatic stress disorder (PTSD), the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR;* American Psychiatric Association, 2000) requires that the individual experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury or a threat to the physical integrity of the self or others. There are many distressful events that fail to meet the *DSM-IV-TR* criteria, such as humiliation or abandonment in childhood, divorces, and so on. All these occurrences can be very disturbing for an individual and may cause many different disorders and problems, especially if they are personally important (Gostečnik, 2002; Kompan-Erzar, 2003; Repič, 2005; Shapiro, 1995; Shapiro & Forrest, 1997). While a certain event may seem insignificant to an adult, it can prove very important for a developing child. These types of incidents are referred to as small "t" traumas by Shapiro (2001). Small "t" traumas are any life events that have a lasting negative impact on the mind. That is, recalling them from memory still causes a certain degree of anxiety and brings forth negative images, feelings, and cognitions that were present at the time of event. The supposition is that they are stored in the memory in dysfunctional form.

The Mol et al. (2005) study compared PTSD symptoms in the general adult population following a range of traumatic events that fulfill the *DSM-IV-TR* criteria with symptoms that are generated following more common events (called "life events"), such as chronic

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disease, problems with relations (e.g., marital discord), study, or work (e.g., unemployment). The results showed that people whose worst event was such a "life event" demonstrated more PTSD symptoms related to that event than those people whose worst event was traumatic (e.g., an accident or a disaster). Mol and colleagues concluded that considerable suffering results from both (life and traumatic) types of events.

Dysfunctional physiological storing of stressful and traumatic experiences is not limited to the obvious trauma victims; rather, it actually contributes to the mass of problems bringing clients into therapy (Shapiro, 2002e). This includes cases such as when a person believes he or she is not worthy of love or that he or she is worthless or a failure, that he or she cannot succeed, or that he or she will be abandoned. Dysfunctionally stored stressful experiences are therefore the foundation for disorders that are clinically diagnosed as well as for difficulties otherwise not considered clinical disorders despite the fact they are very important in everyday life (Shapiro & Maxfield, 2003).

Some memory researchers (e.g., Levin, Lazrove, & van der Kolk, 1999; van der Kolk, 2002, 2003; van der Kolk & Fisler, 1995) stress that dysfunctionally stored memory is represented in the memory not as a verbal account of the past but rather as fragmented sensorial and emotional elements of traumatic experience. These different elements often stay disconnected from other elements. Such dysfunctionally stored stressful experiences stay "locked" or "frozen" in a so-called neurobiological lock; this means that the neurological connections that would normally allow resolution or processing do not develop (Gilligan, 2002; Shapiro, 2001; van der Kolk et al., 2001). Thus, the traumatized individual can experience bodily sensations, a smell, or a reaction to fear and all without the simultaneous appearance of a visual image or other orienting stimulus that might help him or her place these "memories" into the dimensions of time and space. This individual will not be able to experience these memories as an integrated whole, as a tragic event that happened at a certain moment under particular circumstances (Levin et al., 1999). Such disconnected elements of dysfunctionally stored stressful experience then remain unprocessed, and the individual is prevented from recording them as a personal story. The evaluation, classification, and contextualization of the person's experiences are thus in disarray. The trauma is experienced not as a single tragic event that happened at a certain moment, under certain circumstances, but rather as a timeless emotion or bodily sensation (Levin et al., 1999).

Stickgold (2002) claims that inadequate memory processing is characterized in part by the prolonged and inappropriate predomination of episodic memory (instead of semantic) of the traumatic event. Disturbance of the normal process of transferring and integrating episodic memory into the semantic memory system causes episodic memory, its affect, and other elements to persist in an inappropriately strong and affect-laden form. We can assume it is also possible that only some aspects of the episodic memory need to be processed. Furthermore, processed memory can have a strong episodic component, only without reexperiencing the affect, and often with observer as opposed to field visualization. Some of these and other research findings provide support for the adaptive information processing model (AIP; Shapiro, 2001). The AIP model claims that dysfunctional storing of experiences probably occurs as the result of a blockage to adaptive information processing. This prevents a person from extracting the useful aspects from a traumatic experience, such as knowing when to be cautious with certain people or perhaps to avoid them; at the same time, it compels them to "throw away" what is useless and self-destructive, such as emotional disturbance, anxiety, physical tensions and alertness, and irrational cognitions. This prevents the individual from attaining (or reattaining) the capacity to experience and express the appropriate emotional state as concerns the traumatic event and thus acquire the ability to efficiently manage his or her future endeavors (Shapiro, 1999, 2002b, 2002c).

When a highly stressful event occurs, information processing may be blocked. Perceptions and information, such as visual images and bodily and other perceptions of experience encountered by a person during an event can be "locked" in the brain and maintained in such a form (Shapiro, 2001). Equipped with this kind of memory information, individuals exposed to stimuli reminiscent of the trauma may reexperience the past with an immediate sensorial and emotional component. This causes them to feel as if the event were repeating itself despite their knowing that their reactions are not in accordance with the present stimuli (van der Kolk, 2003).

Processing of dysfunctional material in memory networks is a hallmark of eye movement desensitization and reprocessing (EMDR).

EMDR

EMDR was originally designed to treat PTSD. Some controlled studies of EMDR for civilian PTSD (those not connected with combat or war experiences) report 77% to 100% success after only 3 to 10 hours of EMDR (Lee, Gavriel, Drummond, Richards, & Greenwald,

2002; Marcus, Marquis, & Sakai, 1997; Rothbaum, 1997; Scheck, Schaeffer, & Gillette, 1998; Wilson, Becker, & Tinker, 1995, 1997; Wilson, Silver, Covi, & Foster, 1996). While some studies (e.g., Devilly & Spence, 1999; Jensen, 1994) have reported lesser effects for EMDR, EMDR is validated as an effective treatment for PTSD in Bisson and Andrew (2007) and by various organizations, including the International Society for Traumatic Stress Studies (Chemtob, Tolin, van der Kolk, & Pitman, 2000), the American Psychiatric Association (2004), and the American Psychological Association (Chambless et al., 1998).

Some EMDR clinicians and researchers (EMDR Institute, 2005; Shapiro, 1999, 2001, 2002a; Shapiro & Forrest, 1997; Sprang, 2001; Taylor, 2002) have claimed that EMDR clinical practice and case studies exhibit success with a variety of psychological disorders (including personality disorders, anxiety disorders, depressive disorders, and addictions). EMDR is thought to successfully treat not only PTSD but also other disorders inasmuch as they have experiential contributions (Shapiro, 1997, 2001, 2002a). However, these claims still await more definitive research support (see, e.g., Cvetek, 2000; Maxfield, 2007; Shapiro, 1999, 2001). Shapiro (2002a) also stresses the need for research regarding the use of EMDR in cases of dysfunctionally stored stressful experiences, such as those not included in the diagnosis of PTSD.

EMDR Treatment of Undiagnosed Participants

There has never been a clinical study that directly assessed the effects of EMDR treatment with undiagnosed participants whose distress related to small "t" traumas. However, some randomized clinical trials have included participants whose symptoms did not meet full criteria for PTSD. In a study by Scheck and colleagues (1998), only 67% of participants had a PTSD diagnosis. However, all participants reported a traumatic memory and dysfunctional behaviors, such as sexual promiscuity, runaway behavior, and drug and alcohol abuse. They found greater pre–post change for EMDR-treated participants as compared with participants who were treated only with active listening on various measures. Likewise, in a study by Wilson et al. (1995), 54% of the traumatized participants did not have a PTSD diagnosis. A linear regression analysis indicated that treatment gains did not vary as a function of pretreatment symptom severity or PTSD diagnosis. Participants showed a significant improvement on measures of depression, anxiety, and posttraumatic stress.

In addition, some controlled studies have investigated the effects of eye movements independently of the EMDR protocol (laboratory setting) for nontraumatic memories among nonclinical participants (Andrade, Kavanagh, & Baddeley, 1997; Kavanagh, Freese, Andrade, & May, 2001; Sharpley, Montgomery, & Scalzo, 1996; van den Hout, Muris, Salemink, & Kindt, 2001). Such memories include going unprepared to an exam, the illness or death of relatives, parental divorce, threats from animals, arguments with friends, horror movies, and so on. The studies demonstrated that eye movements decreased the vividness of memory images and the associated emotion. Van den Hout et al. (2001) concluded that eye movements not only reduce the vividness and emotionality of memories during the actual process of the eye moving but also affect future recollections when no eye movements are made.

Integration of EMDR With Other Approaches

There has been a trend toward integration of EMDR with other important psychotherapeutic approaches (Manfield, 1998; Shapiro, 1999, 2001, 2002b, 2002d) where EMDR is typically used to process traumatic antecedents. Some known examples of integrating EMDR with other significant psychotherapeutic approaches include psychoanalytic (Snyker, 1998; Wachtel, 2002), cognitive-behavioral (Smyth & Poole, 2002), experiential (Bohart & Greenberg, 2002), family (Kaslow, Nurse, & Thompson, 2002; Shapiro, Kaslow, & Maxfield, 2007), and marital (Protinsky, Sparks, & Flemke, 2001) approaches. Many therapists who use EMDR report that they integrate EMDR into the therapeutic approach or techniques they usually practice (DiGiorgio, Arnkoff, Glass, Lyhus, & Walter, 2004). This is usually called assimilative integration (DiGiorgio et al., 2004). It is also suggested in EMDR training (Solomon, personal communication, 2003) that therapists use their regular therapeutic approach and that on encountering an appropriate "target" they can apply EMDR (in fact, since the target is already defined, they may even use a slightly modified EMDR approach) and then continue with their usual approach. A few promising case studies do exist; in general, however, integrations and applications of EMDR in other approaches are for the most part insufficiently empirically studied. These other psychotherapeutic approaches often lead to the encounter of events in the client's past that do not meet the criteria for a traumatic event according to PTSD but that are nonetheless therapeutically very important. Thus, considering integration and the use of EMDR in other psychotherapeutic approaches, the effectiveness of EMDR for such events is of great significance. Because of the context, the application of EMDR

in such integration often calls for slight modifications in the process; for example, the history phase is often not necessary, the reevaluation phase is limited, and so on (for a detailed description of the entire procedure, see Shapiro, 1995, 2001). Dworkin (2005) states that "in Phases 3–6, standardized steps must be followed to achieve fidelity to the method" (p. 224). These phases are assessment (trauma activation sequence), desensitization (active trauma processing), installation (linking to the adaptive perspective), and body scan (intensive body awareness). The objectives of the other four phases—attaining the client history and treatment planning (trauma case conceptualization), client preparation (testing affect tolerance and body awareness), closure (debriefing), and reevaluation—are achieved within the provision of the alternate psychotherapy.

The Research Problem

The information processing model that is the theoretical basis for EMDR and many clinical reports suggests that EMDR is effective in treating dysfunctionally stored stressful experiences that fail to meet the criteria for PTSD. Shapiro (2002a) states that such effectiveness has yet to be adequately assessed and that there is a need for more rigorous methodological evaluation. Similarly, the integration and use of EMDR in other psychotherapeutic approaches has yet to be properly evaluated (DiGiorgio et al., 2004). This study examines whether the slightly adapted form of EMDR, which omits phases 1, 2, and 8, is more effective in treating dysfunctionally stored stressful experiences (or small "t" trauma) than active listening (attentional placebo) and wait list.

This study also examined the hypothesis that recall of a relevant event that fails to meet PTSD criteria will cause an increase in state anxiety. This is consistent with Shapiro's (2001) AIP model, which posits that the activation of unprocessed stressful memories causes the experience of disturbing elements of those memories. Such an increase is considered an indicator of dysfunctional storing of memory.

Method

Participants

Ninety participants were included in the study. During the course of the study, five participants dropped out from the study prior to the final assessment for a variety of reasons. Participants were between 19 and 32 years old. Initially, there were 30 males and 60 females; ultimately, the numbers counted 28 males and 57 females because of the dropout. The participants were undergraduate and postgraduate Slovenian students from various faculties at the University of Ljubljana (Faculty of Economics, Faculty of Theology, Faculty of Pedagogy, Faculty of Arts, and Faculty of Law) as well as seniors (fourth year) from the Economics High School and the Gymnasium in Radovljica. On average, the participants were 23.4 years old (23.6 not counting those participants who dropped out), and the standard deviation was 3.7 years (also not counting those participants who dropped out).

Instruments

Two measures were applied in the study: the Slovene version of the STAI X-1 (state) subscale of the State-Trait Anxiety Inventory (STAI; Lamovec, 1988; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979). Both of these measures are frequently used in studies of EMDR (see Cvetek, 2000). The STAI X-1 subscale is a 20-item self-report measure using a 4-point Likert scale, with scores varying from 20 to 80. It measures the current state of anxiety (called state anxiety as opposed to trait anxiety). This instrument is important for the purposes of this study, considering that intrinsic to dysfunctionally stored (unprocessed) stressful memories is the triggering of a certain level of anxiety at recall. A higher score on the scale denotes a higher level of state anxiety. STAI has a good convergent validity; the reliability for STAI X-1 is expectedly lower at 0.33 (Spielberger et al., 1983).

The IES, a 15-item self-report Likert-type scale, assesses current subjective distress related to a specific life event (Horowitz et al., 1979). It is designed to assess the frequency of stressful phenomena, such as avoidance and intrusive symptoms related to a certain event, experienced in the past 7 days. It is one of the most frequently used scales for the assessment of posttraumatic phenomena. The IES scale also has two subscales: One assesses intrusive symptoms (intrusive thoughts, nightmares, feelings, and imagination), while the other measures symptoms of avoidance (numbness, avoidance of feelings, situations, and thoughts). All items in the IES refer to a specific stressor (Horowitz et al., 1979). A higher score on the scale denotes a higher level of posttraumatic phenomena. The IES subscales demonstrate very good reliability, with coefficients of internal consistency ranking between 0.79 and 0.92 (Corcoran & Fischer, 1994). The IES has good criterion, content, and construct validity (Horowitz et al., 1979).

Selection and Assessment of Participants

Figure 1 illustrates the flow of participants through the assessment and treatment processes. Potential participants were randomly asked at their faculties and schools to voluntarily participate in the study. No payment was offered for participation. Those who were interested were additionally informed about the study (including potential benefits and disadvantages). Those who decided to participate signed an informed consent form and after an introductory relaxing talk were asked to complete the STAI X-1 (first administration of the STAI X-1). Then they received instructions to briefly describe a memory currently still disturbing to them as well as their feelings at the time of the event. This part of the procedure will be called "memory recall." Memory recall lasted approximately 1 to 2 minutes. Seven volunteers who could not remember any suitable event were not included in the study. The remaining participants completed the STAI X-1 again (second administration of the STAI X-1), evaluating how they felt at the time of completing the scale and not at the time of the event. Subsequently, they also completed the IES (first administration of the IES). Clinical interviews were performed with the participants to check for safety factors—these are usually checked for during the first phase of the EMDR procedure (see Shapiro, 2001)—as well as for the possibility of any serious mental health problems, previous psychiatric diagnoses, or a prior trauma history (according to the description of a traumatic event in the *DSM-IV-TR*). On the basis of these interviews, another six individuals who had serious mental health problems, a previous psychiatric diagnosis, or a prior trauma history were excluded from continuing the study, and some of them were referred to appropriate agencies.

The recalled memories of the remaining individuals did not meet the criteria for a traumatic event in the *DSM-IV-TR*. These 90 participants were divided into three groups. The groups were matched (for the purpose of improving comparison of groups) according to the results on the STAI X-1 prior to their memory recall (first administration) and then randomly assigned to one of three groups.

Treatment Provision

All members in the experimental group received, over approximately 10 weeks, three 1-hour EMDR

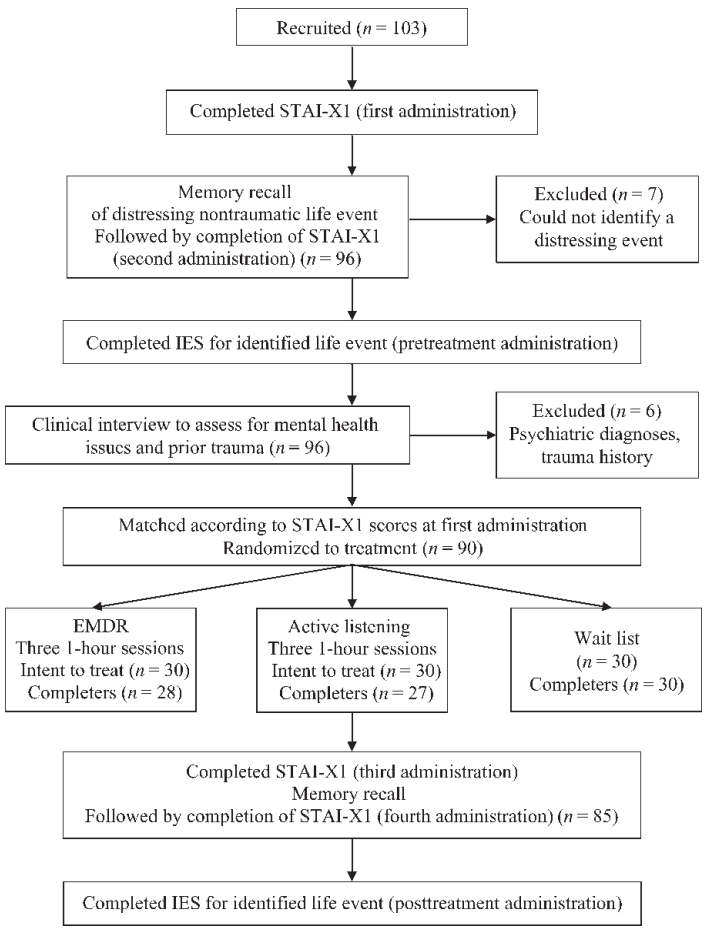


FIGURE 1. Flowchart of participants' progress through the study.

therapy sessions according to the procedure described previously. Phases 1 and 2 were adjusted as is a common practice when EMDR is integrated and applied into other psychotherapeutic approaches. Since the target was already chosen and safety factors were checked, the history phase was largely unnecessary (e.g., except a check for eye problems). The framework and limits of this study prevented working on the therapeutic relationship for a longer time in the preparation phase. Therapy sessions lasted just 1 hour. In addition, the reevaluation phase was reasonably adjusted (there was no overall treatment plan to integrate the targeting sessions; the study focused on one target and was not deliberately seeking other targets for more complete treatment of participants; follow-up sessions were offered to participants, but they were not part of the study). In all other respects, the standard EMDR procedure (Shapiro, 2001) was carefully followed.

Every participant in the active listening (AL) control group received, during the course of approximately 10 weeks, three 1-hour treatment sessions. This condition was used for control of the "attentional placebo" factor (Prochaska & Norcross, 1999) or control of nonspecific factors of psychotherapy, such as the therapeutic relationship, the expectation of gain, and sympathetic attention (Seligman, 1995). The therapist's endeavors in this group involved active listening, summarizing, clarifying, and further inquiry about their narration. The focus of AL was on the identified memory and any issues connected with it.

The second control group (wait list [WL]) did not receive any treatment at that time. This group acted as a control for any spontaneous improvement and effects due to the assessment procedure.

Final Assessment

The final assessment was conducted approximately 10 weeks after the first assessment. The participants were reevaluated with a readministration of the STAI X-1 and the IES. This was the second administration of the IES. As previously, the STAI X-1 was administered to measure current state anxiety (third administration) and then to measure anxiety subsequent to memory recall (fourth administration). While the study consisted of limited treatment sessions, all participants were given the option of continuing treatment at no cost on the conclusion of the study.

Results

The memories recalled by the participants in the study referred to events such as the conclusion of a romantic relationship, distressing and painful childhood and adolescent experiences with parents (e.g., lack of support, anger, roughness, injustice, and so on), minor medical operations, humiliating experiences with peers in childhood and adolescence, disappointments in friendships, and school failures. Scores on used measures (means and standard deviations) are shown in Table 1.

Increase in State Anxiety With Memory Recall

There were no significant differences between the treatment conditions at the first assessment (pretreatment) on the STAI X-1 scores. The effect of memory recall on state anxiety was evaluated by determining the amount of change in STAI X-1 scores before and after memory recall using paired-sample *t* tests (see Table 2). Memory recall produced a statistically significant ($p < .01$) increase in state anxiety for all three groups, at pretreatment as well as at posttreatment. An analysis was then conducted to determine if treatment had an effect on the size of this increase by comparing the pretreatment and posttreatment increases for each condition. For both the EMDR and AL participants, memory recall resulted in a significantly smaller increase after treatment ($p < .001$); there was no significant difference for the WL group. In addition, a comparison across groups using independent *t* tests (see Table 3) determined that the EMDR participants reported a significantly smaller increase than both the AL and the WL condition ($p < .001$). In comparison to WL, AL also had a significantly smaller increase (see Figure 2).

Traumatic Stress

Although the participants' reported events did not meet the PTSD criteria, their IES scores at pretreatment varied from 4 to 49, with a mean score of 27.1 (26.8 for treatment completers), thus placing them in the moderate range of event-related distress. Similar to the results on the STAI X-1, there were no significant differences between conditions on the IES scores at pretreatment (see Table 4).

An analysis was conducted to evaluate pretreatment and posttreatment changes in the IES scores for each condition (see Table 2). Total and subscale scores on the IES showed a significant decrease at posttreatment for the EMDR ($p < .01$) and AL groups ($p < .01$). After treatment, the IES Total score for the EMDR participants (mean = 6.6) placed them in the subclinical range, while the AL participants were in the mild range (mean = 18.7). The scores of the WL group on the IES were also in the mild range of event-related distress (mean = 23.6). The IES intrusion subscale was significantly

TABLE 1. Means and Standard Deviations for STAI-X1 and IES

	EMDR				Active Listening				Wait List	
	Intent to Treat ($N = 30$)		Completers ($N = 28$)		Intent to Treat ($N = 30$)		Completers ($N = 27$)		Intent to Treat Completers ($N = 30$)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Pretreatment										
Increase in state anxiety with recall	14.5	6.96	14.4	7.21	15.0	6.15	14.9	6.32	15.8	7.1
IES Total	27.1	10.9	26.1	10.3	27.3	11.5	27.6	11.7	26.7	11.4
IES Intrusion	10.8	5.6	10.2	5.3	11.2	5.5	11.3	5.7	10.5	4.4
IES Avoidance	16.4	6.6	15.9	6.5	16.1	7.1	16.3	7.2	16.2	7.7
Posttreatment										
Increase in state anxiety with recall			1.2	2.0			9.5	6.1	15.4	8.6
IES Total			6.6	6.2			18.7	9.5	23.6	12.6
IES Intrusion			2.1	2.9			6.8	4.9	8.4	4.9
IES Avoidance			4.5	3.7			11.9	5.7	15.2	8.6

Note. Increase in state anxiety with recall = difference between STAI X-1 scores at first and second administrations (pretreatment) and at third and fourth administrations (posttreatment).

TABLE 2. Results of Paired-Sample *t* Tests Within Treatment Conditions

	EMDR		Active Listening		Wait List	
	t (*df*)	Sig.	*t* (*df*)	Sig.	*t* (*df*)	Sig.
Pretreatment						
Increase in state anxiety with recall	–10.59 (27)	.000	–12.24 (26)	.000	–12.22 (29)	.000
Posttreatment						
Increase in state anxiety with recall	–3.15 (27)	.004	–8.09 (26)	.000	–9.83 (29)	.000
Pre–post changes within each condition						
Resting state STAI-X1	1.56 (27)	*ns*	–0.95 (26)	*ns*	1.42 (29)	*ns*
Increase in state anxiety with recall	9.98 (27)	.000	7.01 (26)	.000	0.62 (29)	*ns*
IES Total	9.92 (27)	.000	5.24 (26)	.000	2.70 (29)	.011
IES Intrusion	8.01 (27)	.000	6.22 (26)	.000	3.13 (29)	.004
IES Avoidance	9.39 (27)	.000	4.01 (26)	.000	1.44 (29)	*ns*

Note. Analyses conducted for treatment completers. Sig. = significance; *ns* = not significant.

lower at the $p < .01$ level and the IES whole scale at the $p < .05$ level.

A further analysis was conducted to compare the effects of EMDR, AL, and WL on the IES scores (see Table 4). EMDR had significantly lower scores on all the IES scales compared to both the AL condition ($p < .01$) and the WL condition ($p < .01$). In addition, AL produced larger decreases than WL on the IES scores ($p < .05$) (see Figure 3).

Phenomenological Reports

Although not subject to appropriate analysis, comments made by the participants appeared to vary across

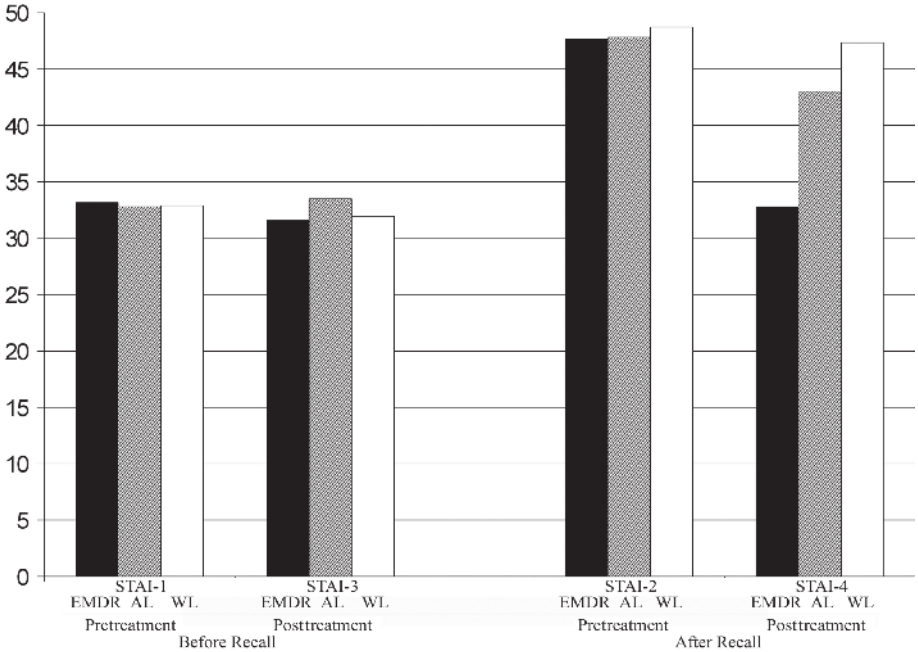


FIGURE 2. Mean scores on the State subscale of the STAI.

Note. EMDR group; AL = active listening group; WL = wait-list group.

TABLE 3. Comparison of Conditions (Independent-Sample *t* Tests) for the Increase in State Anxiety With Memory Recall

Treatment Comparisons	Increase at Pretreatment		Increase at Posttreatment		Pre–Post Change in Increase	
	t (*df*)	Sig.	*t* (*df*)	Sig.	*t* (*df*)	Sig.
EMDR/AL	–0.25 (53)	*ns*	–6.76 (31.2)	.000	5.14[a] (43)	.000
EMDR/WL	–0.75 (56)	*ns*	–8.83 (32.3)	.000	8.37[a] (43)	.000
AL/WL	–0.53 (55)	*ns*	–2.94 (55)	.005	4.56 (55)	.000

Note. AL = active listening group; WL = wait list; Sig. = significance; *ns* = not significant.
[a] Equal variances not assumed.

conditions. The treatments, especially the EMDR, appeared to induce qualitative changes in feelings regarding the event (e.g., a change from disconnection, shame, anger, and sadness to reconciliation, calming down, reassurance, and so on). The following are the responses of one participant after sequential eye movement sets, illustrating the sequence of change during the treatment process:

- "There's a lot of pain, it feels like crying."
- "I remember a similar relationship with XXX, desperate."
- "I feel like everybody is unfair to me, that I'm not the one to blame."
- "I feel like I don't want this to happen to me, I am very angry."
- "Sadness, no more anger."
- "I couldn't know; there's nothing wrong with me."
- "I pity him, he did hurt me, but he has much bigger problems than I."
- "I feel pretty good; oh, I'm human, I can make mistakes."

Discussion

Memory Recall

One of the interesting findings in this study is that the majority of participants (90 of 97 participants) from a rather general population could identify memories that caused them a considerable increase in state anxiety (15 points on average) and relatively great event-related distress as measured by the IES. (However, it is also important to note that seven participants were excluded

TABLE 4. Comparison of Conditions (Independent-Sample *t* Tests) for IES Total and Subscales

	Pretreatment		Posttreatment		Pre–Post Difference	
	t (*df*)	Sig.	*t* (*df*)	Sig.	*t* (*df*)	Sig.
EMDR/Active listening						
IES Total	–0.52 (53)	*ns*	–5.6[a] (44.7)	.000	4.06 (53)	.000
IES Intrusion	–0.75 (53)	*ns*	–4.38[a] (42.1)	.000	2.9 (53)	.005
IES Avoidance	–0.24 (53)	*ns*	–5.67[a] (44.3)	.000	4.24 (53)	.000
EMDR/Wait list						
IES Total	–0.22 (56)	*ns*	–6.6[a] (43)	.000	7.23[a] (43.5)	.000
IES Intrusion	–0.23 (56)	*ns*	–6.09[a] (47.7)	.000	5.05[a] (46.5)	.000
IES Avoidance	–0.18 (56)	*ns*	–6.2[a] (39.9)	.000	7.34[a] (44.2)	.000
Active listening/Wait list						
IES Total	0.3 (55)	*ns*	–1.64 (55)	*ns*	2.91 (55)	.005
IES Intrusion	0.61[a] (48.6)	*ns*	–1.25 (55)	*ns*	2.53 (55)	.014
IES Avoidance	0.05 (55)	*ns*	–1.71[a] (50.8)	*ns*	2.62 (55)	.011

Note. Sig. = significance; *ns* = not significant.
[a] Equal variances not assumed.

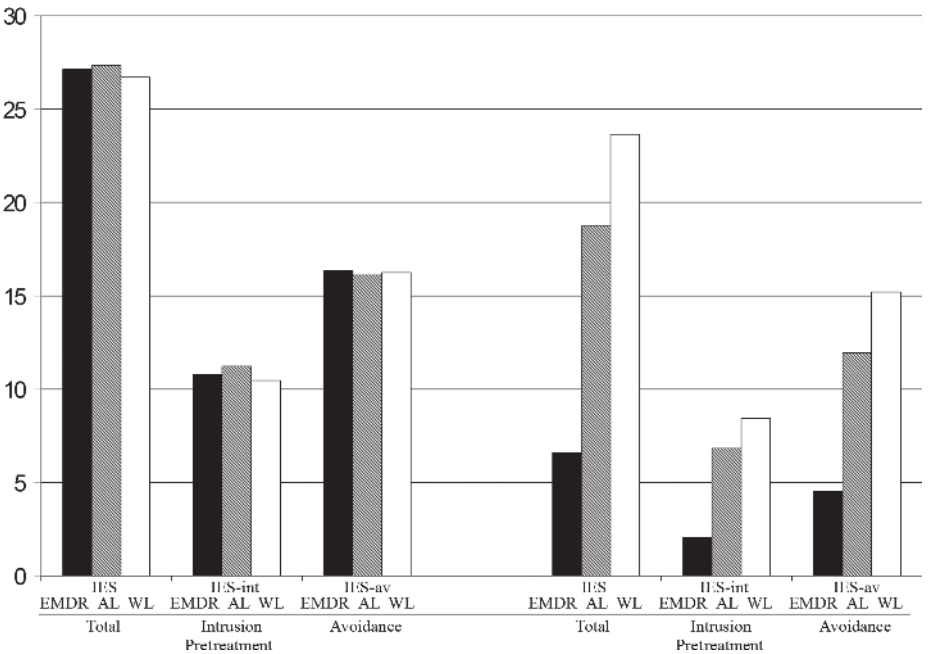


FIGURE 3. Mean scores on the Impact of Event Scale.

Note. Mean scores on the total scale and the intrusion and avoidance subscales. EMDR = EMDR group; AL = active listening group; WL = wait-list group.

because they were unable to recollect an event that was sufficiently disturbing in the present.) Some limitations of this aspect of the study include the lack of data regarding the length of time since the event occurred. In addition, it is possible that the increase in anxiety with memory recall was partly a function of the characteristics of the procedure, which could conceivably impact the increase to some degree (e.g., a relaxing talk at the beginning, completing the STAI, triggering memory, and then completing the STAI and the IES).

The results suggest that although these events (such as relationship problems with partner or peers, school failures, or childhood conflicts with parents) failed to meet the criteria for a traumatic event as described for PTSD in the *DSM-IV-TR,* they can indeed have a long-lasting impact on human experience. The results

in this study are in accord with the results of the Mol et al. (2005) study, which compared people with the worst traumatic memory and people with the worst nontraumatic (e.g., chronic disease, relationship problems, study, and work) memory. The latter study found that the levels of PTSD symptoms among the two populations proved analogous (even slightly higher in the nontraumatic group). The destructive consequences depend on the power of the stressful event as well as the characteristics of the individual, the environment, and so on. This study also speaks in favor of a dimensional model for the consequences of stressful events. Future research investigating the treatment of such dysfunctionally stored stressful experiences or small "t" traumas is recommended.

Since the short description of the traumatic event during the study resulted in such significant increases of anxiety and event-related distress, in terms of intrusions and avoidance (measured with the IES), it is likely that memories of these events were causing difficulties in daily life. Presumably, these individuals were frequently encountering situations and stimuli that would activate feelings and other elements of the experience associated with the memories. Such an increase in anxiety could, for example, be seen as dysfunctional because, in reality, there is no reason for it in the present time (Shapiro, 1995, 2001; van der Kolk, van der Hart, & Burbridge, 1995). For no apparent reason, the aroused anxiety presents an unnecessary loss of energy to the organism in the present time. Eliminating inappropriate anxiety does not prevent the individual from accurately assessing real-life situations and acting appropriately. In fact, research suggests that individuals treated with EMDR who no longer experience unnecessary anxiety at recall are very successful and functional at coping with later similar situations (Shapiro, 2001).

Effects of EMDR, AL, and WL

The EMDR, AL, and WL conditions did not completely remove the increase in state anxiety due to the memory recall. Although the average increase, with memory recall, of state anxiety at final assessment was only 1.18 points in the EMDR group as compared to 9.52 points in the AL group and 15.36 points in the WL group, the increase was still statistically significant. Similarly, event-related distress, as measured with the IES, was not completely eradicated in any of the groups. Although one might anticipate complete eradication of event-related distress following EMDR treatment (Shapiro, 2001), the protocol provided in this study treated only one memory and did not address current triggers or future aspects of the incident. Similar limitations were shown in a study by Sack, Lempa, and Lamprecht (2007), whose PTSD patients showed significantly reduced physiological arousal after EMDR treatment during memory recall.

Further analysis revealed that EMDR and AL were successful (statistically significant differences between the first and final assessments) at lowering the state anxiety related to the memory of the event and the event-related distress. While AL is not a procedure designed especially for treating traumatic memories, the factors in that group had an important impact nonetheless. This group was designed to control for the attentional placebo as well as to determine whether changes were due to nonspecific factors or common elements, such as the therapeutic relationship, positive expectations, and so on, that arise in almost every type of treatment. The positive results in the AL group suggest that these factors also contribute to the processing of such memories. Further analyses would be necessary to determine which of these factors are the most important and how to best apply them in other procedures as well.

The WL condition was designed to control for other factors that might influence outcome (especially spontaneous improvement and the assessment procedure). These factors did not result in a statistically significant change (lowering) in the increase of state anxiety due to memory recall (STAI X-1) or in a statistically significant decrease in the phenomenon of avoidance (the IES Avoidance subscale). However, they did suffice for a statistically significant difference on the total IES score ($p < .05$) and the IES Intrusion subscale ($p < .01$).

A comparison of the conditions indicated that EMDR was significantly superior to both AL and WL in lowering the increase of state anxiety due to memory recall and the lowering in the event-related distress ($p < .01$; see Tables 3 and 4). The AL approach was more effective than the WL ($p < .01$) for state anxiety and total IES and both IES subscales ($p < .05$).

For the confirmation of a certain treatment or to place a certain treatment on the list of empirically validated treatments, the American Psychological Association (Chambless et al., 1998), among others, required that this particular treatment demonstrate statistically significant superiority to medication or psychological placebo or to some other treatment. This study, which compared EMDR to the attentional placebo, meets this criterion for assessing an empirically validated treatment and speaks in favor of positive confirmation of EMDR for the treatment of dysfunctionally stored stressful experiences that do not meet the criteria for PTSD.

Although this study has some similarities to the Scheck et al. (1998) study, which also compares the effects of EMDR with the effects of active listening (the authors also include the IES and STAI X-1 into their set of measures), their focus did not address stressful events that fail to meet the criteria for PTSD. Their study involves participants with more problematic memories; that is, 77% were diagnosed with PTSD. As regards EMDR effectiveness in comparison with AL, their results are similar to those presented in this study. In its use of nonclinical participants, this study has some similarities to the laboratory studies that investigated the effects of eye movements on nontraumatic memories (Andrade et al., 1997; Kavanagh et al., 2001; Sharpley et al., 1996; van den Hout et al., 2001). Their results are in line with results of this study since they confirmed the important effects that eye movements have regarding a decrease in the vividness and the emotions of treated memories.

The observed qualitative changes (e.g., from shame to anger to sadness to reconciliation) for treated memories may prove to be representative of important effects resulting from EMDR. The decrease in anxiety can be conceptualized as desensitization, which Shapiro (2001) defines as a by-product of adaptive reprocessing.

Limitations and Suggestions for Future Work

Future research efforts should aim to more fully investigate EMDR's effectiveness in the treatment of stressful memories and to compare its efficacy with other valid treatments for stressful memories (e.g., cognitive-behavioral therapy). This study suggests that such memories can be highly distressing and that treatment may be advantageous. Future studies could also evaluate if there are differences in treatment response for the various types of events (e.g., conflict, loss, humiliation, and so on).

This study used a truncated form of EMDR with significant adjustments made to the first two phases of history taking and preparation. The outcome suggests that the integration of this form of EMDR into other psychotherapeutic approaches can be an effective means of reducing anxiety and event-related distress. Nonetheless, further research into this matter would be elucidative, such as when it might be most effective to use EMDR in combination with a particular psychotherapeutic approach and for how long, which are the most appropriate targets for such a treatment. and how best to empower the effects of such a treatment in various psychotherapeutic approaches.

To improve the credibility, veracity, and clarity of the findings, future research should check whether the treatment effects are lasting. Another important improvement would be the inclusion of independent assessments and the implementation of treatments. Assessment, EMDR, and active listening were conducted by the same therapist-researcher in this study. Another limitation is that the outcome scales were self-report scales. In addition, long-term behavioral measures and measures that would assess also other indicators of memory processing would be appropriate.

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Correspondence regarding this article should be directed to Robert Cvetek, Ukanc 77, 4265 Bohinjsko jezero, Slovenia. E-mail: robert.cvetek@guest.arnes.si