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## **Efficacy of Eye Movement Integration Therapy: A novel therapy for rapid, ecological integration of traumatic memories**

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### **Abstract**

To incorporate multisensory information into the healing process, we offered a novel therapy, Eye Movement Integration (EMI), to traumatized clients who had already undergone other treatments without resolution. EMI, developed by Connirae and Steve Andreas, is based on the principle that eye movements that are naturally associated with accessing sensory, cognitive and affective information can be guided externally to facilitate the integration of traumatic memories. Two pilot studies of EMI are presented: the effect of a single session on trauma-related symptoms and the effect of a complete course. We found that EMI, in a single session, resulted in an overall improvement in self-reported trauma-related symptoms of 48.33%, while treatment to subjective resolution resulted in an overall improvement of 83.30%.

**Key words:** eye movement integration, trauma, PTSD, brief therapy

## **Efficacy of Eye Movement Integration Therapy: A novel therapy for rapid, ecological integration of traumatic memories**

Since the identification of posttraumatic stress disorder (PTSD) as a distinct syndrome with the publication of the DSM-III (APA, 1987), many forms of psychotherapy have been utilized to help victims of traumatic events to resolve persistent psychological and physical distress. Behavioral, cognitive-behavioral, biofeedback and psychodynamic modalities, as well as eye movement desensitization and reprocessing (EMDR), have all shown some utility in the treatment of PTSD (reviewed in Foa, Keane, & Friedman, 2000; van der Kolk, McFarlane, & Weisaeth, 1996). In spite of an increasing understanding of the nature of the traumatic memories and their treatment, rapid, effective therapies with enduring results remain elusive.

A framework for modeling traumatic stress has been proposed in which fear stimuli and fear responses are linked inappropriately via a traumatic memory network that remains unassimilated into declarative form (Foa & Kozak, 1986; Foa, Steketee, & Rothbaum, 1989). In this context, there is a growing recognition of the need to incorporate the somatosensory and emotional dimensions of the trauma – often isolated in implicit memory – in the therapeutic process, in order to assimilate the content of the traumatic memories into healthy self- and world schemata. Many triggering stimuli and responses, as well as the content of the traumatic memory itself, are manifested with predominantly sensory and affective dimensions. As described succinctly by van der Kolk:

{...} traumatic experiences are initially organized on a nonverbal level. Clinical experience and our reading of a century of observations by clinicians {...} have led us to postulate that memories of the trauma tend, at least initially, to be experienced as fragments of the sensory components of the event: as visual images; olfactory, auditory, or kinesthetic sensations; or intense waves of feelings that patients usually claim to be representations of elements of the original traumatic event. (p. 287 van der Kolk et al., 1996)

Likewise, it has been hypothesized that highly emotional memories, such as those associated with traumas, are established without processing by the neocortex or conscious evaluation, when extreme arousal disrupts normal hippocampal functioning (LeDoux, 1992). Thus, the somatosensory information remains isolated, unless a means is found to activate it and, in so doing, to permit further integration.

The strength and the limitation of behavioral and cognitive-behavioral therapies is that they rely heavily on conscious cognition to both access the traumatic memory and to supply ameliorating information which will then be integrated, again by experiential or cognitive processes, into the memory circuit which is inducing the fear responses. This awareness of the need to find a means to integrate the sensory and affective dimensions of traumatic memories into a more adaptive network informed the development and refinement of Eye Movement Integration therapy (EMI). Originated in 1989 by Connirae and Steve Andreas, EMI is rooted in Neuro-Linguistic Programming (NLP), and presupposes that the content of trau-

matic memories is recorded in the sensory neuronal networks into which it was originally received (Andreas & Andreas, 1987). This internal representation of the memory is then activated from those same networks whenever a triggering stimulus induces recall or reliving of the trauma. In EMI, eye movement accessing cues are used to activate and integrate these traumatic memory networks.

The use of eye movements as accessing cues in NLP stems from observation of unconscious eye movements made when people are asked to think about different types of sensory or cognitive information, and is consistent with observations on lateralization of brain tasks (Bandler & Grinder, 1979; Dilts, Grinder, Bandler, & DeLozier, 1980; Doyle, Ornstein, & Galin, 1974; Galin & Ornstein, 1974; Kinsbourne, 1972; Kocel, Galin, Ornstein, & Merrin, 1972). Practitioners of NLP later observed that externally guided eye movements could facilitate access to alternative forms of information processing, problem-solving and sensory information (Andreas & Andreas, 1989; Dilts, 1990). This observation led to the development of EMI for the treatment of traumatic memories, using eye movement accessing cues, rather than verbal and cognitive means, to facilitate activation of memory neural networks. This activation of the sensory, affective and cognitive resources of the client's brain is thought to foster formation of new linkages between the contents of the traumatic memories and more adaptive, ameliorative information. The ameliorating information emerges spontaneously from the whole somatosensory and cognitive networks the client has acquired over his lifetime and is not supplied externally by the therapist.

As currently constituted, EMI consists of identifying a disturbing memory which is the apparent precipitating or underlying cause for the client's current distress, and then facilitating activation and integration of that memory with other multisensory information by a guided series of eye movement patterns. These patterns, or figures, cover the entire visual field of the client, which is intended to aid in accessing the full spectrum of information processing modes internally available to the client. As the client holds the memory in consciousness, each eye movement pattern is executed, with the client following the guiding movement of the therapist's hand. During a pause between each figure and the succeeding one, alterations in the client's internal representation of the memory are assessed, allowing the client to explore changes in sensory and physical modalities and new associations which arise with the facilitated access, but specifically excluding extensive discussion or commentary from the therapist. Integration of the memory is considered to be complete when eye movements in all regions of the visual field elicit only positive information in the various sensory modes, and the client is no longer distressed when recalling the memory.

EMI has not been reported thus far in the refereed literature, although there are a growing number of clinicians in North America who offer this therapy to their clients. Its observed clinical efficacy in the alleviation of trauma-related stress symptoms is such that some clinicians now regard it as their treatment of choice for traumatized clients. This report, then, is the first description of the EMI technique and its efficacy in the hands of trained therapists.

## **Method**

### *Participants*

EMI was offered as an alternative to standard psychotherapies, to clients of community and private clinics in Québec, Canada, who had experienced a traumatic event and had symptoms of PTSD that persisted in spite of previous therapeutic intervention(s). Traumas included, but were not limited to: childhood physical, emotional or sexual abuse (or witness to abuse of sibling); accidents; sudden loss of a loved one or love relationship; assault; kidnapping and rape. Patients were excluded from the study if they were diagnosed with a psychotic or personality disorder, had a physical problem which might impede eye movements or be aggravated by them, or had cardiovascular or cerebrovascular complaints which might be aggravated by the stress of vivid recollection of their traumatic memories. Thirty-one participants were included in Study 1, and 26 participants were included in Study 2. A post-hoc analysis showed 20 of the participants in Study 1, and 14 of the participants in Study 2, met DSM-IV criteria for a PTSD diagnosis before EMI therapy. Demographic, clinical and trauma variables for the participants are summarized in Tables 1, 2 and 3, respectively.

### *Measures*

Symptoms of posttraumatic stress were assessed using an instrument similar to the PTSD Interview (Watson, Juba, Manifold, Kucala, & Anderson, 1991), adapted for the clinical context. A ten-point scale was used to record responses to fifteen questions addressing reexperience (flashback, nightmares, negative thoughts), avoidance/numbing (avoidance of particular situations/thoughts; loss of interest in friends, family, work or sex), arousal (sleep disturbances, aggression/anger, fear/anxiety), physical symptoms and depression (depressive state, sadness, lowered self-esteem). For Study 1, the pre-treatment assessment was made by the clinician before the first session of EMI therapy. The posttreatment assessment was made two to three weeks later, before the second session of EMI therapy or other counseling. For Study 2, the post-treatment assessment was made prior to the closure therapy session, i.e. after subjective resolution of the presenting complaint(s) following one to six treatment sessions. Data collected from the assessments is presented as symptom clusters related to each category above, and was tested for significant differences using paired t-tests. Effect sizes were calculated using Cohen's *d* statistic (Cohen, 1988).

### *Therapists*

The therapists who participated in this study were each trained in the theory and practice of EMI for a minimum of 16 hours by the author. Four of the therapists were trained for an additional 16 hours in more advanced EMI techniques. Each therapist was fully qualified to practice in Québec as a psychologist, social worker or school counselor, and had a minimum of eight years of experience in psychotherapy.

### *Procedure*

Each participant was evaluated by a therapist during an intake interview, during which the nature of their presenting complaint(s), an account of the associated trauma(s), the state of their physical and psychological health, and their family and social situation were explored. Persons meeting the criteria listed above (Participants) were seen again one week later for the first session of EMI, targeting the principal traumatic memory that was identified at intake. Each session lasted between 75 and 225 minutes, varying according to the needs of the client and the scheduling restrictions of the community clinics. The first assessment

was taken before EMI commenced at this first session. In Study 1, each participant was seen again two to three weeks later, and assessed before another EMI session was administered. In Study 2, each participant was seen biweekly until subjective resolution of the presenting complaints was achieved, or until no further progress was made with additional EMI treatment, for a total of one to six therapy sessions.. The final assessment was taken at a closure session.

The EMI treatment consisted essentially of three stages: identification of a traumatic memory which appeared to be causing distress to the client; integration of that memory aided by therapist-guided smooth pursuit eye movements; and anchoring of the new state of integration. Each stage will be discussed separately.

*Identification of traumatic memories.* During client evaluation, the history of trauma was determined and any apparent linkage with the presenting complaints assessed. If a memory of a specific, linked trauma existed, the client's internal representation of the trauma was explored in terms of the sensory modalities in which it was represented, and any associated affect or cognitive content. This was the representation that the client held in consciousness to begin the treatment.

*Eye movement integration protocol.* The eye movement patterns cover the entire range of vision of the client, and are structured to facilitate connections between different domains of the client's internal representations. These figures lead the participant in repeated vertical, horizontal, diagonal and circular eye movements. A period of 10 to 30 seconds is usually adequate to facilitate access to new material, or to determine that no new information is arising with that particular figure. Between each pattern, the therapist asks an open-ended question such as, "What's there now?" to encourage the client to self-assess what they are experiencing, any new information which emerges and how the modalities of the internal representation of the traumatic memory are changing. The pause is deliberately short, to encourage the client to remain connected to the material they are integrating, and the next eye movement is started. All of the patterns are followed to completion, to assure access to all internal resources.

*Anchoring of the new state.* As new information is integrated into the memory network of the trauma, the level of distress induced by the traumatic memory decreases. When the participant reaches a plateau, or the session is brought to a close, this new perception of the trauma is consolidated or anchored by repeating several eye movements with the modified inner representation held in consciousness.

## **Results**

### *Participant and trauma diversity*

In both Study 1 and Study 2, a diverse clientele was treated in varied clinical settings as an alternative to continuing standard care. The diversity of this population is shown in the demographic and clinical data presented in Tables 1 and 2.

The disturbing memories of a wide variety of traumas were treated, as listed in Table 3. Various childhood traumas constituted the majority of the memories targeted for treatment, including sexual, physical and emotional abuse, or witnessing of the abuse of other family members. Severity of the traumas ranged from systematic abuse over the entire childhood, accompanied by a relatively recent violent assault, to the explicit memory of parental rejection.

## *Treatment effects*

### *Study 1*

As seen in Figure 1, and tabulated in Table 4, symptom cluster indices for physical, reexperiencing, avoidance/numbing, arousal and depression were all markedly and significantly reduced, with the pre- to post-treatment change varying from 38.51% to 51.82%, for an overall improvement of 43.50%. If corrected for the fact that the evaluation forms permitted responses on a scale of 1 to 10 (not including a true "zero" value), the degree of improvement becomes 42.78, 57.57 and 48.33%, respectively. The effect size for overall symptom improvement was 1.72.

### *Study 2*

To determine the extent to which posttraumatic stress symptoms could be resolved with a full course of EMI, participants were evaluated before therapy began, and again two weeks after the final treatment. The number of biweekly sessions varied between one and six, depending on the complexity of the trauma and the needs of the participant. The substantial improvement in posttraumatic stress symptoms is illustrated in Figure 2 and tabulated in Table 4. EMI treatment resulted in amelioration of the full spectrum of symptoms, with improvements ranging from 78.33 to 87.49% (after correction), or 83.30% overall. The effect size for the completed EMI treatment was 3.72.

### *Clinical observations*

During EMI treatments, many clients manifested physical responses of an intensity that exceeded that which is observed during most other forms of imaginal exposure. Trembling, agitated movements, stomach pains and tears often accompanied fear responses. Many participants reported physical sensations similar to those which they had experienced at the time of the trauma, however these sensations changed rapidly as additional eye movement patterns were followed. As the treatment proceeded, most clients reported positive sensations of release and loss of tension, as well as altered perception of the trauma.

## **Discussion**

This report offers preliminary efficacy results of a new therapeutic approach under field conditions, as administered by therapists with 16 to 32 hours of specialized training in the technique. In spite of the wide variety of demographic and clinical factors in the participant population, the diversity of treated traumatic memories, and the elapsed time since the trauma sometimes extending to decades, substantial and significant improvements were observed after EMI therapy. Reexperience, avoidance and arousal symptoms – as well as comorbid depression and physical complaints – all decreased 78% to 87%, with very substantial effect sizes. Although this descriptive study did not include a control group or comparison group, changes of this magnitude are remarkable within a short-term treatment program, and open the way to more detailed studies.

The noteworthy decrease in symptomatology observed after only one session represents an almost immediate alleviation of the heavy burden that traumatic memories impose on the patient. This substantial progress results in strong motivation to continue therapy until a complete resolution is reached. For most clients who are suffering symptoms of trauma-related stress, rapid resolution of their problems is a pri-

mary goal. For the public mental health care provider facing financial restrictions, rapid, effective treatments are an equally high priority.

In some cases, integration of traumatic memories seems to proceed without resistance or complication, and a single EMI session is sufficient to reach resolution of trauma-related stress. More often, the network of memories associated with the original trauma, or the existence of multiple traumas, necessitates additional treatment, as reflected by the remaining symptom level seen in Study 1. As shown in the second study, however, an additional one to five sessions is sufficient to eliminate or dramatically diminish remaining trauma-related symptomatology.

The lingering presence of residual symptoms after EMI therapy was terminated could reflect a number of situations. In some cases, therapy may have been halted prematurely, without resolution of all the trauma-related memories, even though both client and therapist believed that the original traumatic memory was fully resolved. Additionally, some traumatic experiences result in learning that appropriately alters responses to potentially hazardous situations. The heightened arousal and avoidance this implies, if mild, may indeed be healthy within the structure of that individual's life. Finally, when traumatic experiences have had profound effects on long-term behavior and subsequent experience, EMI cannot – in itself – provide the new experiences and information needed to teach healthier behaviors and perceptions. In these cases, EMI can ameliorate the symptoms to a large extent, but additional psychotherapy or life experiences may be needed to provide the required somatosensory and cognitive wisdom for elimination of the last vestiges of trauma-related symptoms.

Direct comparisons between the efficacy of EMI and other psychotherapies for PTSD and related disorders are beyond the scope of this report. However, we would be remiss if we failed to point out the distinguishing features that may play a role in the rapidity and potency of EMI. This method accesses the multisensory, physical and affective dimensions of the traumatic memory, without the intervening restraint of the cognitive and verbal modes. In EMI, imaginal exposure is uninterrupted by lengthy discussion, and the brief self-assessments between eye movement patterns emphasize the sensory and physical modes. By removing the "cognitive filter," the linkages made between fragments of the traumatic memory and other experiences are unhindered by the need to translate the internal representation into words. As pointed out by neurobiologist and therapist Guillemette Isnard, "Memory contains more than words" (Isnard, 1990). Only when all the scattered pieces of the memory puzzle – be they somatosensory, affective or cognitive – are brought together and put into place can the picture be seen in its entirety, with appropriate context and meaning. In the absence of cognitive guidance from the therapist, EMI relies implicitly on an internal, homeostatic regulator to assure retrieval and placement of all of the puzzle pieces. Clinically, it often seems that the client spontaneously contacts just the right piece of specific positive material needed to counterbalance, dilute or otherwise offset the negative aspects of the traumatic memory. Again in the words of Guillemette Isnard, "The traumatic stress is resolved when all of the senses have had their say" (Isnard, 1990).

These observations are consistent with the model introduced by LeDoux, according to which posttraumatic reactions to certain trauma-associated stimuli are mediated at the level of the amygdala and hippocampus, without neocortical influence (LeDoux, 1992). After integration of the traumatic experience by EMI, the

response to such stimuli is no longer extreme and automatic, but rather is tempered by the totality of the integrated information. Thus, EMI seems to change the "master card" program of the client's reactions, replacing emotion-driven reactions with more balanced and appropriate responses. This study does not address the underlying neurobiology that produces such a change, but further study along those lines seems warranted.

The intense, multidimensional and associative character of reexperience during EMI may play a role in the efficacy of EMI as well, and may be related to the previous point. It is thought that imaginal exposure is most effective when prolonged and unmitigated by relaxation techniques, so that the fullest possible contact with the fragmented memories can occur (Foa et al., 2000). EMI, by facilitating access to aspects of traumatic memory that remain in implicit, sensory form, permits the client to reexperience the full intensity of their recording of the trauma, and to form linkages with ameliorating explicit, narrative memory elements.

Another therapy for traumatic memories which involves eye movements – eye movement desensitization and reprocessing (EMDR) – has received considerable attention since its introduction in 1989 (Chemtob, Tolin, van der Kolk, & Pitman, 2000; Shapiro, 1989a, 1989b; Shapiro, 1995). EMI and EMDR share certain similarities in the use of titrated imaginal exposure, eye movements and attention to multisensory manifestations of distress. However, the nature of the eye movements is quite distinctive in each case; EMDR uses lateral saccades similar to rapid eye movement (REM), while in EMI smooth pursuit eye movements (SPEM) in multiple directions and patterns are used. In EMDR the eye movements are done as rapidly as possible, within the client's tolerance, while in EMI the speed and range of the movements is generally much slower, and done at the pace that the client prefers. The underlying premise for the use of each type of eye movement is quite different in the two therapies as well. In EMI, application of the presupposition of NLP that the inner representation of a person's experience can be mapped and accessed via eye movement accessing cues, often permits the client and the therapist to identify specific quadrants of the visual field that allow the client to make contact with either a highly resourceful state or intense reexperience of the trauma. While this is not always the case, when it occurs the therapist is able to guide the client's gaze alternately into those specific quadrants (and corresponding region of the inner representation) that need to be linked in order to integrate the traumatic material. In EMDR, there is no indication of a connection between the range and direction of eye movements and the nature of the material being processed. Despite significant additional distinguishing aspects, the results reported here, added to the substantially positive results reported elsewhere for EMDR (Carlson, Chemtob, Rusnak, Hedlund, & Muraoka, 1998; Chemtob et al., 2000; Jensen, 1994; Wilson, Becker, & Tinker, 1995), may indicate that eye movement techniques represent an effective approach to integrating traumatic memories in an ecological way.

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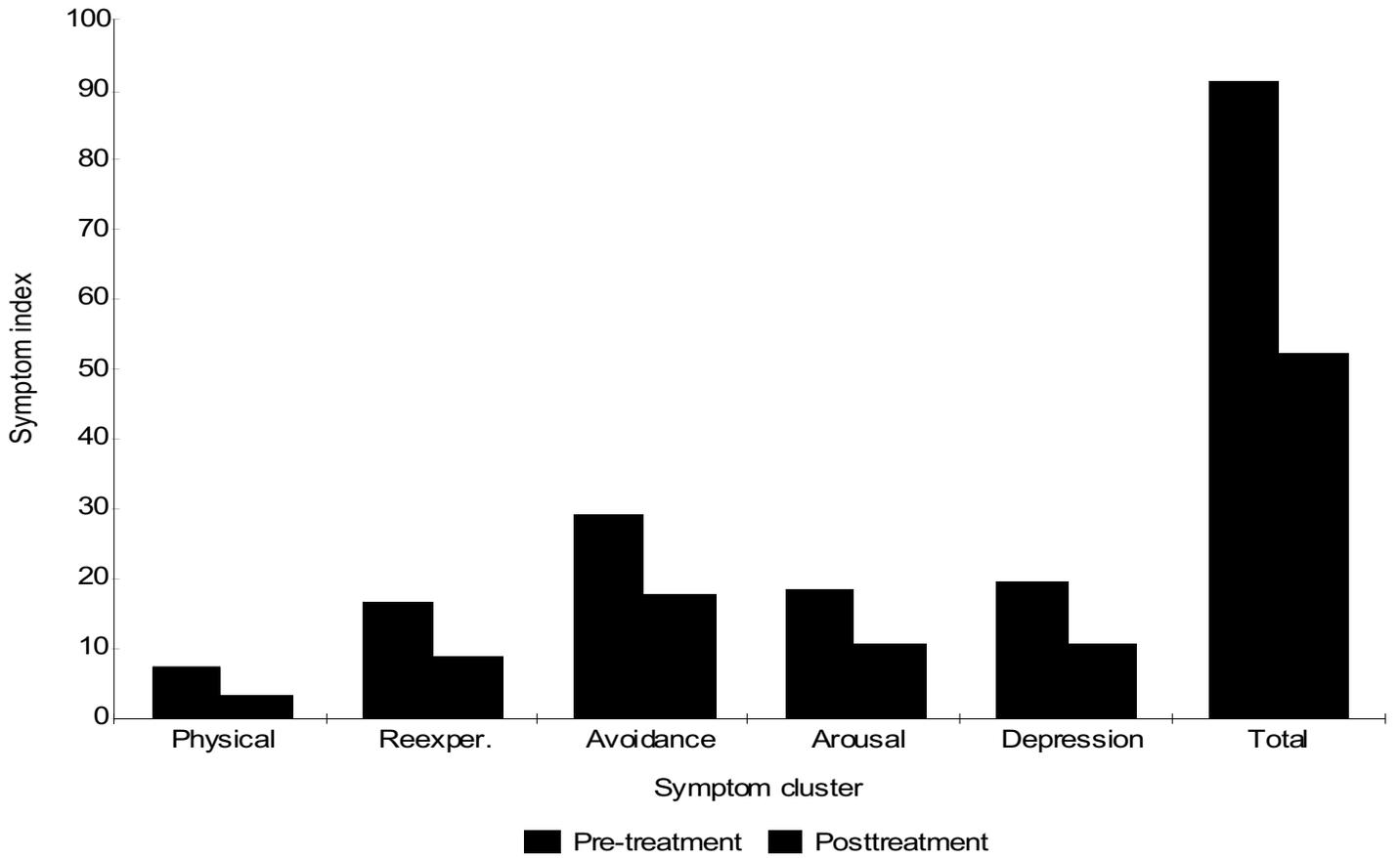


Figure 1. Single session treatment. Symptom indices pre- and posttreatment.

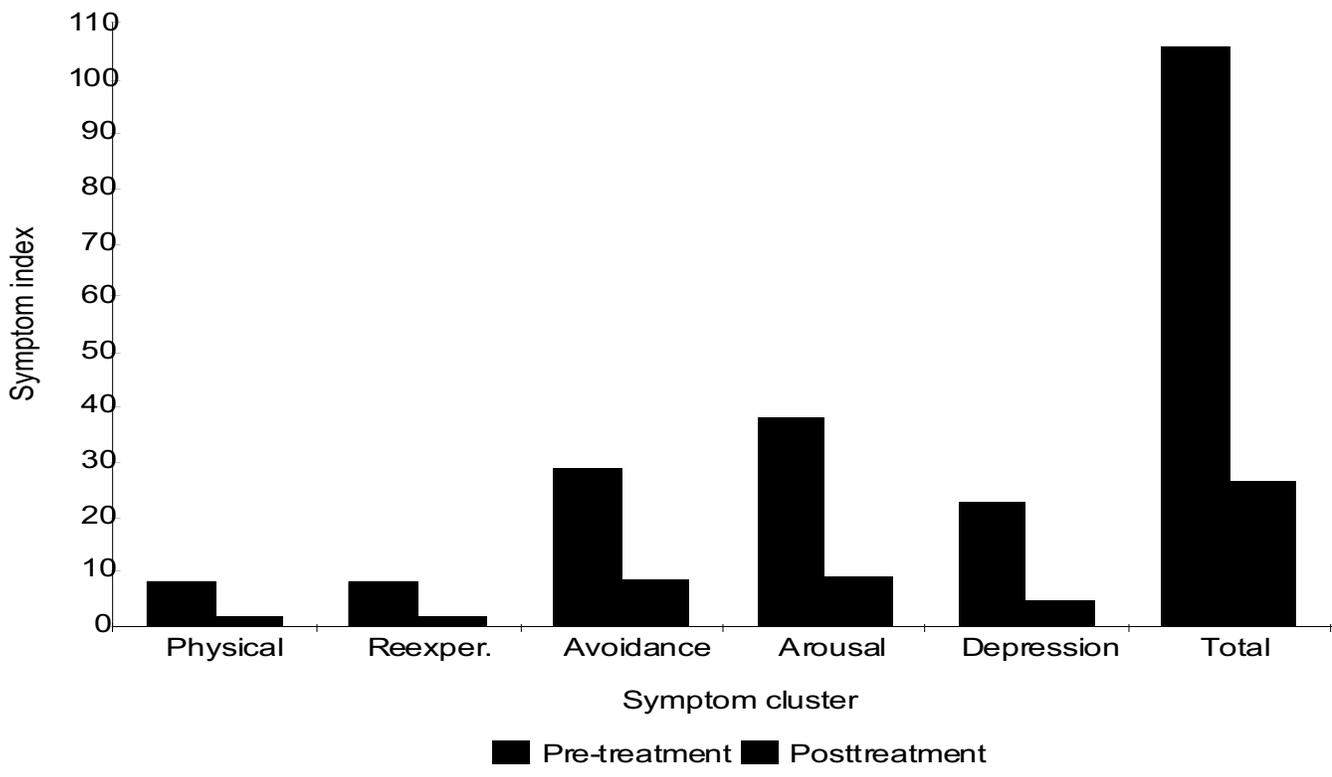


Figure 2. Complete EMI treatment. Symptom indices pre- and posttreatment.