The Effects of Eye Movement Desensitization

and Reprocessing

on Posttraumatic Stress Disorder

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Abstract

This literature review examines the effects of Eye Movement Desensitization Reprocessing (EMDR) on Posttraumatic Stress Disorder (PTSD). The dates of the studies used in this review are from 1998 to 2005. The participants’ ages ranged from 8 to 70 years old. These studies compare EMDR to Exposure Therapy (ET) with relaxation training, Prolonged Exposure (PE), combination of psychotherapy and EMDR, Biofeedback, Stress Inoculation, Cognitive Restructuring and Wait-List. In general, it appears that EMDR in its traditional form, EMDR-RDI and EMDR in the context of traditional psychology, is effective in treating PTSD in adults, as well as children. Results of one study, however, demonstrated that Exposure Therapy was more efficacious in treating PTSD than EMDR and Relaxation Training. Furthermore, this study yielded a higher proportion of participants that no longer met the DSM-IV-TR criteria for PTSD.
The Effects of Eye Movement Desensitization on Posttraumatic Stress Disorder

What is “trauma”, what defines a traumatic event, and what is the most effective therapeutic treatment? Depending on to whom these questions are posed, you will receive some of the following answers: Trauma is being in a near-fatal accident, life-threatening combat, experiencing and/or witnessing robbery, beating, torturing, kidnapping or rape. Traumatic events on the other hand, are natural disasters such as hurricanes, tornados, earthquakes, fires and floods. The most effective therapeutic treatment for PTSD continues to undergo research. This literature review compares the effects of Eye Movement Desensitization and Reprocessing (EMDR) to other therapeutic approaches such as Exposure Therapy (ET), relaxation training, Prolonged Exposure (PE), Active Listening approach (AL), Biofeedback, Stress Inoculation Training (SIT), and Exposure plus Cognitive Restructuring (E+CR) in treating adults and children with Posttraumatic Stress Disorder (PTSD). Finally, this review looks at EMDR in a psychodynamic context as well as within the framework of Individual Psychology.

Approximately 7.7 million Americans age 18 and older are diagnosed with PTSD per year (National Alliance of Mental Health, NIMI, 2006). This current generation is daily at risk for exposure to traumatic events, which may include the following: terrorist attack, governmental unrest, rape, hate crimes, hurricanes, flooding, child abuse/neglect, and spousal verbal/physical/emotional abuse. Therefore, it is imperative that the clinician closely adhere to the diagnostic criteria in diagnosing individuals with PTSD. Furthermore, it is important to clarify that PTSD is not an internal weakness, but that the etiological agent (the trauma) of PTSD occurs outside of the individual. How he or she processes the trauma information, both
cognitively and emotionally, is one of the determining factors as to whether it becomes a threat to them or results in PTSD (Friedman, 2006).

The purpose of this literature review is to demonstrate that Eye Movement Desensitization and Reprocessing (EMDR) is effective in treating the psychological, physiological, and affective components associated with Posttraumatic Stress Disorder (PTSD). This review will evaluate 10 studies, 9 of which are empirical, dating from 1999 to 2005, and related to the effectiveness of EMDR in treating PTSD. Two of the studies are specific to EMDR within the context of both Psychodynamic and Adlerian-based approaches. One of the article’s primary focus is on the resource development and stabilization phase of EMDR. Another study focuses on dysfunctional behaviors such as sexual promiscuity, runaway behavior, and drug and alcohol abuse of young women ages 16-25. A different study is specific in using EMDR with adolescents 8-16 years of age. The remainder of the studies include participants ranging in ages from 16-70.

Overview of PTSD

Since the inclusion of PTSD in the Diagnostic and Statistical Manual of Mental Disorder (DSM-III) in 1980, the understanding of how a person processes trauma has changed and continues to evolve. Previously, the diagnostic criteria for PTSD considered only stressors that were catastrophic and considered to be beyond the scope of natural human experience. This disqualified individuals from meeting the criteria for PTSD who struggled with the residual effects of divorce, the loss of a loved one, failure, and rejection.
The DSM-IV underwent a text revision in 2000, which also revised the criteria for PTSD. This revision now states that he or she has to experience, observe, or have been confronted with a discernable traumatic event threatening serious injury, physical integrity of self or others, and/or death. In addition, he or she must respond to this dreadful experience with extreme fear, helplessness or horror. He or she must also re-experience the emotional, physiological, and psychological effects of the traumatic event in specific ways. At least one of the following must be experienced: awake recurrent recollection of the trauma, intrusive images, thoughts or perceptions of the traumatic event, nightmares, illusions, hallucinations, episodic dissociative flashbacks, and severe psychological and/or physiological distress. He or she will persistently avoid situations, stimuli, thoughts, feelings, and/or individuals that remind them of the trauma. He or she will block out certain aspects of the traumatic event and lose interest in participating in daily activities. He or she will feel detached from others, display a restricted range of affect, have difficulty sleeping, and concentrating, be irritable, and display outbursts of anger. He or she must have been struggling with this symptomatology for a minimum of one month, with this disturbance causing significant impairment in his or her activities of daily living (DSM-IV-TR, 2000).

Overview of EMDR

Many scholars in the field of psychology have done, and continue to engage in, laborious research in hopes of discovering the most effective therapeutic interventions for PTSD. The studies included in this literature review suggest that EMDR is an effective intervention for PTSD. Since first discovered by Francine Shapiro in 1987, Eye Movement Desensitization & Reprocessing (EMDR) has proven to be promising in treating PTSD.
EMDR works on an individual’s memory connections, perceptions, attitudes, and behaviors that dwell within his or her memory network. Many times when an individual experiences a traumatic event, a disruption occurs in his or her ability to process information. When the clinician follows correct administration, EMDR will assist in linking the individual’s right and left hemispheres of the brain together, which enables a cognitive shift to occur. This cognitive shift moves the previously disrupting information from the forefront of the brain (short-term memory) to his or her long-term memory bank. There are eight distinct phases of EMDR, briefly described as follows.

Phase 1 – Client History and Treatment Planning. This includes collecting a thorough history of the client and establishing a treatment plan that is conducive to reducing, if not eliminating, symptoms associated with PTSD. It is critical to rule out any physical, emotional, and/or psychological precursors that could result in bringing further harm to the client via EMDR. To reduce this risk the clinician must collect pertinent information that will assist in determining his or her suitability for treatment. This includes, but is not limited to, the completion of the Dissociative Experience Scale (DES), a thorough medical history, an evaluation of the client’s current level of stability, his or her ability to tolerate temporary discomfort, and the presence of an appropriate support system.

Some contra-indicators to the use of EMDR are self-mutilating behaviors, suicide attempts, current suicidal ideation, terminal illness, physical/emotional frailty, current abusive relationships, and dual diagnosis. The abovementioned issues do not automatically rule out the use of EMDR. However, the clinician must understand the complexity of these issues and
have a strong belief that the potential benefits of EMDR outweigh the risks before proceeding with treatment (Shapiro, 2001).

**Phase 2 – Preparation.** This phase includes, but is not limited to: establishing a therapeutic alliance, educating the client about the history, protocol and procedures of EMDR, addressing any questions and concerns the client may have, and informing him or her of the high probability of emotional turmoil in and outside of the therapy session. Finally, the client needs to sign an informed consent form stating he or she understands the process and risks involved and that they are willing to proceed with EMDR (Shapiro, 2001).

A prerequisite to proceeding with EMDR is educating the client in appropriate relaxation techniques, and to practice with them until a level of proficiency is achieved. These techniques will assist the client in processing high-level disturbing emotions outside of session. It is also helpful to explore secondary gain issues that may affect the client’s future.

**Phase 3 – Assessment.** Phase 3 consists of identifying the distressing target memory and having the client select an image that best represents the memory. The client assesses the memory level of disturbance on a 10-point Subjective Units of Disturbance Scale (SUDS). Zero represents no disturbance and 10 represents an extreme level of disturbance. He or she then identifies a negative belief about self as a result of the memory. Next, the client assesses how true the negative belief is using the 7-point Validity of Cognition (VOC) scale; 0 being false and 7 being totally true. The client then chooses a positive belief to replace the negative one, and assesses the positive belief using the same 7-point VOC scale. Next, the clinician asks the client what emotions he or she currently feels when the memory is brought up and then assesses the
Phase 4 – Desensitization. Phase 4 of EMDR is to reduce, if not eliminate, the client’s level of disturbance relating to the memory. Desensitization is the beneficial outcome of reprocessing the disturbing information that is stored in the channels of the memory. EMDR therapy uses bilateral stimulation of left/right eye movements, tactile stimulation, and/or right/left audio in order to activate opposite sides of the brain. A cognitive shift occurs as a result of these areas of the brain being stimulated that moves the information to long-term memory. As the traumatic information moves from a state of dysfunctional to functional, the emotional connection to the traumatic event dissipates. Once the emotional detachment occurs, the memory is no longer traumatizing (Shapiro, 2001). There is a high probability that other dysfunctional memories will also emerge as a result. Therefore, any new memory the client reports during the bilateral stimulation episode becomes the next target for EMDR. This process continues until all associated channels are clear from the residual dysfunctional effects associated with the memory. When it appears that all channels are clear, the clinician will then return to the original target for reassessment via the 10-point SUDS scale. The goal is to reduce the SUDS scale to 0 or 1. If the client does not report these numbers, the clinician will ask him or her if they know of any reason why the SUDS scale cannot be reduced to 0. The answer then becomes the next target (Shapiro, 2001).

Phase 5 – Installation. Phase 5 of EMDR consists of having the client pair his or her previously chosen positive self-statement with the original disturbing target memory. Prior to beginning the bilateral stimulation, the clinician asks the client if his or her positive statement

level of disturbance via the SUDS. Finally, the clinician asks the client to identify where in his or her body the memory is felt (Shapiro, 2001).
still fits. If not, the client chooses one that feels more appropriate. The clinician then checks how true the positive cognition is to the client via the 7-point VOC scale. Simultaneously the client then focuses on the original disturbing event and the positive cognition, along with additional bilateral stimulation. The goal is to increase the VOC scale to a score of 6 or 7 (Shapiro, 2001).

*Phase 6 – Body Scan.* Phase 6 focuses on any physical dysfunctional material that may be stored in his or her body. According to Shapiro (2001), the residual effects of the disturbing memory are stored in the central nervous system. The clinician directs the client to focus on the original memory and asks him or her to identify any tension or other bodily sensations. Any bodily sensation or tension reported by the client then becomes the next target for bilateral stimulation.

*Phase 7 – Closure.* Phase 7 consists of making sure the client is orientated to the here and now. Regardless of whether the dysfunctional material is processed prior to leaving the office, the client needs to be physiologically, cognitively, and emotionally stable. If for some reason all the information did not process, the clinician will implement a specific procedure called the “containment exercise”, designed for closing an incomplete session. This consists of having the client envision a temporary container large enough to hold the distressing overpowering emotions, thoughts, and sensations and place these into it until they can be brought back to session. In this case it is important that the clinician encourage and support the client for his or her effort in session.

If the client successfully processes all material in session, closure consists of debriefing what occurred in session, and encouraging him or her to journal between sessions. In addition,
the clinician will remind the client that he or she might experience negative and/or positive responses to EMDR, and encourage them to use their relaxation techniques (Shapiro, 2001).

**Phase 8 – Revaluation.** Before beginning subsequent EMDR sessions, the clinician and client will spend time re-evaluating the previous session. The primary focus of the re-evaluation process is to verify that the previous disturbing memories are resolved. This will be evidenced by a reduction in the client’s SUDS score, an increase in the VOC score for positive cognition, and an absence of body sensations. Any noteworthy material that has arisen becomes the next target for processing. This phase is critical to evaluating long-term treatment gains of EMDR.

**Efficacy of EMDR on PTSD**

Prior to discussing the efficacy of EMDR, it is important to provide a brief summation of eye movement and bilateral stimulation within the context of EMDR. Research shows a clear association between eye movement, cognitive processes, and cortical function. Eye movement appears to assist with a shift in cognitive material (as stated in Shapiro, 2001).

Furthermore, while a definitive connection with bilateral stimulation and positive treatment gains does not (yet) exist. In theory, it is suggested that bilateral stimulation via right/left eye movements, or tactile stimulation or tones activate both sides of the brain. As a result, the emotional experiences that are trapped in the nervous system are released (Shapiro, 2001).

Shapiro stumbled onto these two concepts. She noticed when negative thoughts came to her mind, her eyes would rapidly move back and forth in an upward slant. Her negative thoughts would disappear as a result.
Around that same period, it also became clear to Shapiro that her hands would serve as excellent tools to promote controlled bilateral stimulation. Having the client simultaneously focus on the disturbing information and bilateral stimulation reduces the length of trauma exposure and the level of emotional abreaction. Bilateral stimulation from one side of the client’s range of visual perception to the other activates his or her information-processing system (Shapiro, 2001).

The clinician can reach this objective in several different ways. For example, the client can focus on two or more of his or her fingers as they quickly move either horizontally or diagonally, back and forth, within the boundaries of his or her peripheral vision. Other instruments such as pens, rulers, lighted sticks or bilateral stimulation machines with auditory tones or tactile paddles also assist in meeting this objective. Tapping on client’s knees, hands or shoulders while having them simultaneously focus on the disturbing information is yet another means of bilateral stimulation.

Determining the type of bilateral stimulation is solely dependent on the client’s physical or psychological needs. He or she may have weak eye muscles or be so anxious that they are unable to follow the clinician’s fingers or hands. Each client’s situation is unique. Consequently, his or her needs are also unique. A wise clinician will determine the most appropriate approach that produces the least amount of discomfort, while coming alongside of a client on his or her healing path.

Overall, the research indicates that EMDR is effective in reducing, if not eliminating, PTSD in adults as well as children. Furthermore, when comparing EMDR to other therapeutic interventions such as Exposure-Relaxation Therapy (ERT), Brief Cognitive-Behavioral (BCB),
prolonged exposure PE), active listening(AL), biofeedback assisted relaxation (RXT), stress inoculation training (SIT), and exposure plus cognitive restructuring (E+CR), EMDR is equal to and at times superior in the treatment of PTSD.

Carlson’s et al. (1998) study compared EMDR to biofeedback-assisted relaxation and routine clinical care in treating combat-related PTSD. In this study, 35 male combat-veterans ages 41 to 70 were randomly assigned to 1 of the 3 aforementioned treatment groups. Participants received 12 sessions of EMDR, or RXT. Routine clinical care (control) participants were placed on a 6-week waiting list for treatment. Pretreatment interviews were conducted by 1 of the 3 authors who was, therefore, not blind to the treatment condition. In order to enhance objectivity, the 2 research assistants who were blind to the treatment conditions conducted the psychometric testing instruments. The participants in the EMDR group were educated in the logic behind the approach, the treatment phases, and the protocol, and viewed an actual demonstration of EMDR. The RXT group was educated in the rationale behind biofeedback and general relaxation. Combat-related treatment targets for both groups were chosen as a result of the Stressful Scene Construction Questionnaires (SSCQ’s) scripts (Carlson, et al. 1998).

Carlson, et. al., (1998), 9 months later, found that the EMDR group had substantially lower scores on the Beck Depression Inventory (BDI) and the Mississippi Scale compared to that of the RXT group. With the exception of the intrusion subscale, the EMDR group also had lower total scores on The Clinician Administered PTSD Scale (CAPS). Therefore, end results show significant improvement in the EMDR participants compared to participants in the RXT group (Carlson, et. al., 1998). These results are comparable to findings of Scheck, Shaeffer & Gillette, (1998), who found EMDR vs AL to be more effective in treating PTSD. This study consists of
60 females, ranging age from 16 to 25, who had recently engaged in the following dysfunctional behaviors: sexual promiscuity, running away, and/or abusing alcohol or mood-altering substances. Participants were randomly assigned to EMDR or AL. Both groups attended two 90-minute treatment sessions, a post-treatment assessment and a follow up assessment at 90 days. The assessments measured the participants’ level of psychological functioning, depression, anxiety, self-concept, avoidance, numbing, and reliving of the trauma in both groups (Scheck, Shaeffer & Gillette, 1998).

EMDR treatment followed the 8-phase protocol, which limited the participants’ communication to specific targets. The AL treatment protocol, on the other hand, was non-directive and invited the participant to share more about his or her disturbing memory.

Post-treatment data suggest that after 2 sessions, AL reduced symptoms of depression, anxiety, the intrusive recurring trauma-related thoughts, and served to enhance certain elements of the individual’s self-concept. The end-state results, however, show EMDR to be the superior means of treatment over AL. In fact, in all areas measured pre- and post-treatment, EMDR was roughly 2 times more successful than AL. The greatest difference was seen on the trauma related Impact of Event Scale (IES) (Scheck, Shaeffer & Gillette, 1998).

Taylor, et. al., (2003) compared EMDR to RT treatment. It was found that EMDR and RT did not vary in treatment effectiveness.

Power et. al., (2002), found ET+CR to be superior over EMDR and the Waiting List (WL); however, the findings were not clinically significant. Furthermore, 15 months later, only 25-50 % of participants in both groups were able to maintain treatment gains without additional post-study therapeutic intervention. Another interesting fact is that only 5.5% of participants
from these groups were on psychotropic medication immediately following his or her trauma. At the time of this study, however, these numbers changed to 72.2% of both groups' participants taking psychotropic medication (Power et. al., 2002).

Taylor, et. al. (2003), also found EMDR to be an effective treatment. However, in comparing EMDR with ET and RT there was no significant difference. Scheck et. al., (1998) and Ironson, et. al., (2002) both found EMDR to be effective over AL and PE.

Carlson, et. al., (1998), Scheck, Schaeffer, Gillette, (1998), Rothaum, et. al., (2005) and Ironson, et. al., (2002), show EMDR to be more effective than PE alone, SIT-PE or WL in treating PTSD. Taylor, et. al., (1998) on the other hand, found when comparing EMDR to ET and RT, that RT was more favorable in reducing PTSD symptoms of avoidance and re-experiencing at a much faster rate and yielded a greater number of participants who no longer met the DSM-IV criteria for PTSD. Korn and Leeds, (2002), found EMDR participants to show an overall level of improvement in depression, anxiety, avoidance, dissociation, anger/irritability, and dysfunctional sexual behaviors.

When treating children with PTSD, Oras, Cancela de Ezelata, and Ahmad (2004) found EMDR to be complementary within a psychodynamic context. Consistent with previously mentioned studies (Carlson, et. al, 1998; Ironson, et. al., 2002; Lee, et. al., 2002; Rothbaum, Astin, & Marsteller, 2005; Scheck, Shauffer, & Gillette, 1998) Oras, Cancela de Ezelata, and Ahmad (2004) found EMDR to effectively reduce PTSD related symptoms and non-related symptoms such as depression and anxiety. Furthermore, there was an overall improvement on the Global Assessment of Functioning Scale (GAF) from 50.9 (meaning serious impairment) in
the child’s life tasks to 66.9 (mild impairment). It is worth noting, however, there was more improvement for PTSD re-experiencing symptoms and the least improvement in the area of avoidance. Other improvements were primarily due to reduction in non-related symptoms and depression. Nevertheless, EMDR appears to work well within the psychodynamic context.

Consistent with the Oras, Cancela de Ezpeleta, and Ahmad (2004) study, Barker and Hawes (1999) found the philosophy and the reciprocal client-clinician relationship of EMDR to be harmoniously linked to the philosophy of mutual respect and life style assessment of Individual Psychology. Exclusive to this study is the integration of EMDR when processing early recollections. Early recollections are childhood memories that usually occur before 7 or 8 years of age. These memories serve as a metaphor for a person’s current beliefs about self, others, and the world around him or her. EMDR assists in eradicating negative beliefs associated with early recollections, and in installing holistic positive beliefs about oneself, others, and the world (Barker and Hawes, 1999).

Of the 5 case studies, focusing on participants ranging from 27-62 years old, only 2 persons were re-evaluated; one at 3 months and the other at 15 months. Both of these cases deny any residual symptoms relating to his or her original trauma. Unfortunately, Barker and Hawes (1999) conducted a case-by-case study that lacks empirical documentation. As a result, it cannot compare with previous studies that have endured rigorous scientific testing. Nevertheless, the preliminary results of this study illustrate that integrating EMDR with other psychological approaches reduces non-trauma and trauma-related symptoms, and provides a holistic approach for the client.
Methodological Considerations

Methodology is a critical element in the process of empirically-based research. This portion of the literature review will examine the diagnostic criteria, measurement/assessment tools, age, and gender of the participants within these studies. All 10 studies included in this review focus on the effect of EMDR in treating PTSD in adults as well as children.

Although the focus of the studies is the same, not all studies required the participants to meet the diagnostic criteria of the DSM-IV-TR PTSD diagnosis. The Barker and Hawes (1999) study included participants who lacked the diagnosis of PTSD according to the DSM-IV-TR, while the other studies included required the participants to meet the criteria set forth in the DSM-IV-TR. (Scheck, Schaeffer, & Gillett, 1998; Carlson et. al., 1998; Power, et. al., 2002, Korn & Leeds, 2002; Lee, et. al., 2002; Ironson, et. al., 2002; Oras, Cancela de Expeleta, & Ahmad, 2004; Taylor et. al., 2003).

Along with the DSM-IV-TR criteria for diagnosing PTSD, many of the studies used other forms of assessments. For example, Carlson, et. al., (1998), Power, et. al, (2002), Taylor et. al., (2003), and Rothbaum, et. al., (2005) used the Clinician-Administered PTSD Scale (CAPS). CAPS is considered a gold standard tool used to assess symptomatology intensity and frequency of 17 symptoms of PTSD (Rothbaum, et. al., 2005). In addition to using the CAPS, Carlson et. al., (1998) also used the Minnesota Multi-phasic Personality Inventory (MMPI-2) and the Mississippi Scale of Combat Related PTSD. The MMPI-2 is a true and false questionnaire that distinguishes normal from abnormal groups, as well as major psychiatric or psychological disorders (Kaplan & Saccuzzo, 2001). Likewise, Lee et. al., (2002) also implemented the MMPI-2. However, it was the K edition (of the MMPI-2) which specifically distinguished PTSD symptoms from non-PTSD symptoms in combat veterans.
Power, et. al., (2002) used the CAPS as a tool to diagnose PTSD, but then used the interviewer-rated Montgomery Asberg Depression Rating Scale (MADRS) and the Hamilton Rating Scale for Anxiety to rule out co-morbidity. In determining DSM-IV PTSD diagnostic eligibility, Rothbaum et. al., (2005) used both the CAPS and the SCID non-patient version to assess co-morbidity Axis I diagnosis. To gather pertinent assault information they implemented The Assault Information Interview (AII), as well as, The Stressful Life Events Screening Questionnaire (TSLESQ). Similar to the other 3 studies, Taylor et. al., (2003) used the CAPS to measure PTSD symptom severity, but then used the Structured Clinical Interview for DSM-IV-TR (SCID-IV) to determine the presence of a co-morbid Axis I diagnosis. Oras, Cancela de Expeleta, and Ahmad, (2004) conducted a study strictly focusing on children, whereby an experienced child psychiatrist used the Posttraumatic Stress Symptoms Scale for Children (PTSS-C). This tool consists of 36 items, 15 of which focus on non-PTSD symptoms. This assessment tool reveals the severity of symptoms and whether or not the child meets the DSM-IV-TR diagnostic criteria for PTSD. The GAF scale was also a tool used in the assessment process of this study to determine the child’s current level of functioning.

Ironson et. al., (2002) utilized the PTSD Symptom Scale (PSS-SR) and the Dissociative Experiences Scale (DES). The PSS-SR is a self-report assessment tool that correlates with the Diagnostic and Statistical Manual of Mental Disorders, third edition revised (DSM-III-R). Unlike Ironson at. el., (2002), Scheck, Shaeffer and Gillette chose to utilize The Posttraumatic Stress Disorder Interview (PTSD-I). The PTSD-I is a structured interview to determine DSM-IV-TR diagnoses and has been reported to have fairly good test-retest reliability (as stated in Scheck, Schaeffer and Gillette, 2002). To further substantiate the findings from the PTSD-I, they
compared the results of PTSD-I with the results from the Posttraumatic Stress Disorder section of the National Institute of Mental Health Diagnostic Interview Schedule (Version III-A).

Seven of the 10 studies (Korn and Lee, 2002; Carlson, et. al. 1998; Scheck, Schaeffer and Gillette, 1998; Ironson, et. al., 2002; Power at. el., 2002; Taylor et. al., 2003; Rothbaum et. al., 2005) included in this literature review had participants complete a self-rated PTSD scale. Five of the 10 studies (Carlson, et. al., 1998; Scheck, Schaeffer, & Gillette, 1999, Ironson, et. al., 2002; Taylor et. al., 2003, Rothbaum, Astin, & Marsteller, 2005) had participants utilize the self-rating Beck Depression Scale (BDS). HDS, on the other hand, was used only in the study done by Lee et. al., (2002).

Distinguishing the Lee at. el., (2002) from the other studies is the use of the Davidson’s Structured Interview for PTSD (SI-PTSD). This tool serves to assess the severity and frequency of PTSD (DSM-III-R). Similar to the Ironson et. al., (2002), Lee et. al., (2002) also had participants utilize a self-rating scale for PTSD.

Korn and Lee (2002) used the Trauma Symptom Inventory (TSI) and then the System Checklist-90-Revised (SCL-90-R). The SCL-90-R is a self-rated assessment tool that has been reported to have a respectable test-retest validity (as stated in Korn and Lee, 2002).

Carlson, et. al., 1998; Scheck, et. al., 1998 Lee, et. al., 2002; Power, et. al., 2002; Rothbaum, et. al. 2005, found the Impact of Event Scale (IES) self-report measure useful in evaluating participants’ stress reactions following traumatic events (Sundin & Howowitz, 2002). Other self-report assessments used by Carlson at el., (1998) were the State-Trait Anxiety Inventory (STATE) and the Stressful Scene Construction Questionnaire (SSCQS).
Similar to Carlson, et. al., (1998), Scheck, Schaeffer and Gillette (1998) also utilized the State-Trait Anxiety Inventory (STATE). Unlike Carlson at. el., (1998) Scheck, Schaeffer and Gillette (1998) used the Penn Inventory (PENN) for PTSD followed by the Tennessee Self Concept Scale (TSCS). When totaled, the TSCS and PENN scores reflected the participants’ level of self-esteem.

Power, et. al., (2002), conducted a study with 72 participants comparing EMDR to Exposure Therapy (an established treatment approach for PTSD) Plus Cognitive Restructuring (E +CR). Taylor et. al., 2003, began the study with 60 participants, yet finished with 48, whose mean age was 37. Seventy-five percent were female, and 77% were Caucasian. Thus far, the articles reviewed participants ranged in age from 16 to 70 years old.

Oras, Cancela de Ezpeleta and Ahmad (2004) consisted of a sample group of 13 children ages 8-16. These children were subject to assault, torture, imprisonment, rape and witnessed close relatives being killed by people in authority. Different from the previous studies, this study focused on EMDR within a psychodynamic context. Similarly, the Barker and Hawes (1999) study focused on EMDR in Individual Psychology. Unlike Oras, Cancela de Ezpeleta and Ahmad (2004), however, the population focused on in this study was adults (27-62 years old). Unique to this study is the use of actual cases that consisted of 2 couples and 3 individuals. Lacking is in this study are sample groups, which results in a lack of diagnostic clarity. Furthermore, the actual issues being addressed in EMDR in these two studies were not compatible for comparison.

Taylor et. al., (2003) sought to examine the effectiveness of EMDR by comparing it to Exposure Therapy (ET) and Relaxation Therapy (ET). EMDR, ET, and RT proved to be effective
(to one degree or another) in treating PTSD. Participants were randomly assigned to 1 of the 3 treatment groups. These individuals participated in eight 90-minute treatment sessions.

ET consisted of 4 sessions of imaginable exposure with the final 4 sessions primarily focused on *in vivo* exposure. RT sessions consisted of learning 3 relaxation techniques and practicing 1 of the 3 techniques for the first hour of therapy. The relaxation script was read and audio-taped for the participants to listen to outside of session. EMDR sessions consisted of the 8-phase procedural protocol designed by Francine Shapiro (1989).

Korn and Leeds, (2002) found RDI to be comparable to other ego-strengthening approaches to therapy such as Dialectical Behavioral Therapy (DBT), skill-focused models and other permissive hypnotherapeutic traditions. This approach is appropriate for individuals who have experienced childhood neglect/abuse, have recurrent suicidal ideation, and are diagnosed with either Borderline Personality Disorder (BPD), or PTSD. These individuals commonly lack the internal resources to process emotions and issues that may arise in daily activities of living. RDI consists of identifying, developing, and installing needed resources. The common protocol for implementing bilateral stimulation in the 8-phase protocol for EMDR is 24 to 36 bilateral movements. RDI, on the other hand, consists of 6 to 12 bilateral movements per set. Shorter bilateral sets reduce the risk of bringing to the surface disturbing material.

**Study Limitations**

All of the above-mentioned studies support the fact that EMDR is effective (to one degree or another) in treating PTSD. Nine out of the 10 studies included in this review were empirically based. Virtually all of these studies, with the exception of Taylor et. al., (2003), were
favorable to EMDR being an effective therapeutic approach in reducing PTSD in children and adults. Furthermore, Barker & Hawes, (1999) and Oras, Cancela de Ezpeleta, and Ahmad (2004) studies demonstrated that EMDR works harmoniously within the context of different psychological approaches to therapy.

At the same time, these studies were not without limitations. For example, the largest sample size of these studies was Power et. al., (2002) at 72 participants. The rest of the studies ranged from having 2 (Korn and Leeds, 2002) to 60 participants (Scheck, Schaeffer & Gillette, 1998). In view of the fact that approximately 7.7 million Americans, ages 18 years and older, have PTSD (NIMI, 2006) the number of participants in these sample groups was not sufficient. The Korn and Leeds (2002) study had only 2 participants and therefore the results were preliminary. The Cancela de Ezpeleta & Ahmad, (2004) was the only study specific to traumatized refugee children under the age of 16. Unfortunately, the sample size of this study was one of the smallest at 13 participants.

Larger than most, the Scheck, Schaeffer & Gillette (1998) study was comprised of 60 participants. However, the sample was representative of the more stable, less suspicious/resistant portion of the high-risk population of women with PTSD. While all the women of this study were able to verbalize their trauma, this was not representative of the entire population of traumatized women.

Yet another limitation to this literature review was that the length of time between treatment and post-treatment follow-up was 15 month’s (Power et. al., 2002). This period may be adequate to determine short-term treatment gains. However, it is questionable if 15 months are an adequate amount of time to determine long-term treatment gains.
Another drawback to this literature review is that in virtually all these studies, whether pre-post or otherwise, the assessors were not blind to treatment conditions. This is problematic, in that information regarding the treatment conditions has a high probability of tainting the assessor’s ability to remain neutral.

With the exception of one (Barker and Hawes, 1999) study, a structured clinical assessment was used to determine whether the participants met the (DSM-III, DSM-IV or the DSM-IV-TR) diagnostic criteria for PTSD. It is important to note, because not all structured clinical assessment tools are of the same quality, this can be problematic. Furthermore, many of the outcome scales were self-reports, thus hindering outcome credibility.

Seventy-five percent of the participants of these studies are Caucasian and female which is another limitation in this literature review. Unequal ethnic representation and gender distribution is also problematic. Finally, not all clinicians were proficient in EMDR training and experience (Carlson, et. al., 1998; Ironson, et. al., 2002; Korn and Leeds, 2002; Lee, et. al., 2002; Power, et. al., 2002). These issues, as well as previously mentioned limitations, warrant the need for future research.

Implications for Further Research

Future studies should be composed of larger sample sizes, with equal gender and ethnicity distribution. In addition, assessors selected for the studies should be blind to the treatment conditions. Furthermore, the psychotherapist should be proficient in EMDR education and experience. Moreover, future research should focus on EMDR in the context of traditional approaches to therapy while considering various ways clients communicate trauma (verbal and nonverbal). It would be beneficial that long-term follow-up be conducted over years rather than
months. Identifying conditions that may exacerbate PTSD symptoms would also be advantageous.

In order to be valid it is critical that sample sizes are larger, with the representation of gender and ethnicity. EMDR within the context of other psychological approaches with larger sample sizes will serve to strengthen the data of two of the studies claiming that EMDR is versatile and able to work within the context of traditional psychotherapy approaches (Barker and Hawes, 1999; Oras, Concela de Ezpeleta, & Ahmad, 2004).

Assessors blind to the treatment conditions of future studies will greatly enhance their accuracy (Carlson, et. al., 1998; Ironson, et. al., 2002; Korn and Leeds, 2002; Lee, et. al., 2002; Power, et. al., 2002). Furthermore, blind assessors will reduce the risk of biased end-state treatment results.

It is prudent that future research makes sure that the clinicians administering EMDR are proficient in training and experience. Without appropriate EMDR training end-state treatment results could be skewed.

Future studies examining EMDR within the context of traditional approaches to psychotherapy will serve to further validate that treatment gains are inevitable (Barker and Hawes, 1999; Oras, Concela de Ezpeleta, & Ahmad, 2004). It would be efficacious that future studies expand long-term follow-up to years as opposed to months. This would increase the quality and quantity of information; thus, greatly enhancing the credibility of EMDR (Barker, Hawes, 1999; Carlson, et. al., 1998; Ironson, et. al., 2002; Korn, Leeds, 2002; Lee, et. al., 2002; Oras, Cancel de Ezpeleta, & Ahmad, 2004; Taylor, et. al., 2003; Power, et. al., 2002; Rothbaum, Astin, & Marsteler, 2005; Scheck, Shaeffer, & Gillette 1998).
Furthermore, it would be helpful to identify conditions that may exacerbate PTSD symptoms. Even more exploring the role that feelings play, personality issues, and premorbid history of multiple traumas in childhood in the participant’s resistance to treatment can also be beneficial (Ironson, et. al., 2002). To substantiate the preliminary findings that EMDR-RDI is an intriguing prospect for ego strengthening, future research could compare EMDR with other ego strengthening strategies such as hypnotic mastery or DBT (Korn and Leeds, 2002).

Future studies could compare EMDR in its traditional form with EMDR with anti-exposure instructions to determine the effects of in vivo exposure (Taylor et. al., 2003). Additional research could look at the perception that EMDR seems to work equally well in treating PTSD rape victims as PE minus homework and less confusing exposure (Rothbaum, Astin, and Marsteller, 2005). Other considerations for future research are co-morbid diagnosis, drug/alcohol abuse and/or addiction and whether the participant is currently being abused physically, emotionally, and/or verbally. Equally important is the need to study the specific role and need of bilateral eye movement in EMDR (Taylor et. al., 2003).

Conclusion

After reviewing and evaluating these 10 studies, this writer concludes that EMDR is indeed effective in reducing, if not eliminating, PTSD in adults, as well as children. To reiterate, EMDR is a holistic psychotherapeutic approach that was discovered by Francine Shapiro in 1987. EMDR consists of 8 distinct phases, which are as follows: client history and medical
issues, preparation, assessment, desensitization, installation, body scan, closure, and reevaluation (Shapiro, 2001).

This literature review demonstrates that EMDR was not only equivalent to other therapeutic approaches in treating PTSD but, at times, was more effective. To illustrate this, EMDR was found to be more effective than AL, Biofeedback-assisted Relaxation, ET, and PE in treating PTSD. (Scheck, Schaeffer & Gillette, 1998; Carlson, et. al., 1998; Ironson, et. al., 2002; Lee, et. al., 2002). In addition, EMDR was equally effective in treating PTSD as E+CT and PT (Power, et. al., 2002 Rothbaum, Astin, & Marsteller, 2005). In fact, Taylor et. al. (2003) conducted the review that found ET to be more effective in reducing symptoms of re-experiencing and avoidance that are specific to PTSD.

The preliminary results of the Korn and Leeds (2002) study found EMDR-RDI to be promising in reducing the misery level of clients who struggled with Complex PTSD. It also increased an individual’s ego-strength, thus improving his or her ability to move toward trauma-focused work.

Barker and Hawes, (1999), and Oras, Cancela de Ezepeleta, Ahmad, (2004) present evidence that EMDR is compatible when incorporated into traditional psychotherapies such as Psychodynamic and Individual Psychology.

Nonetheless, as noted earlier, this literature review is not without limitations. Taking into consideration that yearly 7.7 million Americans are diagnosed with PTSD each year, the studies in this review clearly lack adequate representation of this population. Furthermore, there is a deficiency in representing minorities, gender, and children, other contributing psychiatric disorders, socioeconomic background and physical illness. Some studies lack assessors that are
blind to the treatment condition increasing the risk of biased end-state results, and some are lacking in long-term follow-up assessments (Carlson, et. al., 1998; Scheck, et. al., 1998, Barker & Hawes, 1999; Korn & Lee, 2002; Ironson, et. al., 2002; Power, et. al., 2002; Lee, et. al., 2002; Taylor, et. al., 2003, Oras, Cancela de Ezpeleta, & Ahmad, 2004; Rothbaum, Astin, & Marsteller, 2005).

The many limitations that are evident throughout this literature review point to the fact that future research is necessary. Therefore, future studies should include larger sample sizes, a better representation of gender and ethnicity distribution. In addition, it is critical that the clinicians have appropriate EMDR training and experience (Carlson, et. al., 1998; Ironson, et. al., 2002; Korn and Leeds, 2002; Lee, et. al., 2002; Power, et. al., 2002).

Finally, other areas of interest for future research on the effectiveness of EMDR on PTSD are what role emotions play, the effect of personality issues, how multiple childhood traumas affect treatment, along with the correlation between in-session abreaction and long-term treatment gains (Ironson, et. al., 2002). Future research could also focus on co-morbid diagnoses, drug/alcohol abuse (Scheck, Schaeffer & Gillette, 1998) and current physical, emotional, or verbal abuse bio-psycho-social elements, all of which have a high probability of affecting the participant’s ability to participate in psychological studies. These issues and many more can greatly affect an individual’s ability to process traumatic information. Therefore, it is critical that these issues be a strong consideration for future research.

Despite the limitations of this literature review, it is evident that EMDR and EMDR-RDI have a positive effect on PTSD and Complex PTSD. EMDR also shows efficacy in the context of
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traditional psychotherapy. Further research addressing the abovementioned limitations will assist in validating the effectiveness of EMDR in treating PTSD and Complex PTSD.
References


