

Year : 2015  
Volume : 2  
Issue Number : 1  
Doi Number : 10.5455/JNBS.1430056405

## Article history:

Received 26 April 2015  
Received in revised form 28 April 2015  
Accepted 29 April 2015

# EFFICACY OF EYE MOVEMENT DESENSITIZATION AND REPROCESSING BEYOND COMPLEX POST TRAUMATIC STRESS DISORDER: A CASE STUDY OF EMDR IN PAKISTAN

## KOMPLEKS TRAVMA SONRASI STRES BOZUKLUĞU ÖTESİNDE GÖZ HAREKETLERİYLE DUYARSIZLAŞTIRMA VE YENİDEN İŞLEME TEDAVİSİNİN YARARLILIĞI: PAKİSTAN'DAKİ BİR EMDR VAKA ÇALIŞMASI

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## Abstract

**Objective:** To demonstrate the efficacy of EMDR in complex multiple psychological trauma after failed drug treatment from selective serotonin reuptake inhibitor (SSRI) in a diagnosed case of post traumatic stress disorder (PTSD).

**Material and method:** Single participant of this case study, a sitting session judge of judicial governmental scaffold reported to this mental health tertiary care facility at his own accord with features of intense anxiety, depression, maladjustment issues and post-traumatic stress for a duration of several months. As a partial responder to full trial of SSRI he was enrolled for EMDR therapy to address his symptoms of intense anxiety, panic attacks, being overwhelmingly fearful, depressed, low self-esteem, inappropriate feelings of guilt, flashbacks, avoidance, nightmares, hyper-arousal and inability to perform as a judicial head in active war stricken area of northern Pakistan. Complete psychiatric evaluation was carried out and after the discontinuation of SSRIs he was scored on Impact of Event Scale (IES). He fulfilled the diagnostic criteria for PTSD as evaluated by the English version of the PTSD module of the Structured Clinical Interview for DSM-IV administered once before commencement of EMDR. Safe place of the client was established and 8 staged protocol of EMDR was started with him. Multiple EMDR sessions were conducted.

**Result:** The case presented in this paper had multiple psychological trauma forms and failed drug treatment and yet it was observed that EMDR provided marked improvement in all the domains of his deficits and this was at a prompt speed as compared to cognitive behavioural therapy (CBT) which usually takes longer duration of therapy to achieve similar results.

**Conclusion:** EMDR provides marked improvement in all domains of complex mental trauma and traumatic memories. Improvement attained was prompt and enduring as compared to other forms of established therapies and drug treatment indicating permanent changes happening at neurobiological levels of brain.

**Keywords:** EMDR, PTSD, Tf-CBT, man-made disasters, natural disasters, psychological trauma, Pakistan, IES-R, SCID-I, CTRPI, AFIMH and ACTR.

## Özet

**Amaç:** Travma sonrası stres bozukluğu (PTSD) teşhisi konmuş bir vakada selektif serotonin reuptake inhibitörü ile yapılan ilaç tedavisinin başarısız olmasından sonra kompleks çeşitli psikolojik travmada EMDR'nin yararlılığını göstermek.

**Materyal ve Metod:** Bu çalışmanın tek katılımcısı, pek çok aylık bir sürede aşırı kaygı, depresyon, uyumsuzluk ve travma sonrası stres gibi özelliklerle uyumluluk gösteren, hukuki bir yargılama sehpa düzenindeki bir oturma seansında üçüncü basamak mental sağlık bakımının rapor edildiği bir kişidir. Bütün bir SSRI denemesinin parçasal bir cevaplayıcısı olarak bu kişi; aşırı kaygı, panik ataklar, aşırı derecede korkan, depresif, özgüvensiz, gereksiz suçluluk duygusu, geçmişe dönüşler, kaçınma, kabuslar, aşırı uyarılmışlık ve kuzey Pakistan'ın aktif savaşta harabeye dönmüş bir kesiminde muhakeme gücünü kullanamama gibi semptomları adres gösteren EMDR terapisine alınmıştır. Bütün psikiyatrik değerlendirmeler tamamlanmıştır ve SSRI'ların tamamlanmasından sonra IES (Impact of Event Scale) üzerinde puanlandırılmıştır. EMDR'nin başlangıcından önce bir kez yapılan DSM-IV için Yapılandırılmış Klinik Görüşme PTDS modülünün İngilizce versiyonu ile değerlendirilmiş PTDS tanı kriterlerini yerine getirmiştir. Hastanın güvenli bir yerde olması sağlanmıştır ve EMDR'nin 8 adet protokol safhası hastayla başlamıştır. Çoklu EMDR seansı gerçekleştirilmiştir.

**Sonuç:** Bu makalede sunulan çalışma çoklu psikolojik travma formları içermiş ve ilaç tedavisi başarısız olmuştur ve yine de EMDR'nin hastanın

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*eksikliklerinin olduğu bütün alanlarda göze çarpan ilerlemeler sağladığı ve benzer sonuçları almada genellikle daha uzun süren bir terapi olan kognitif davranışsal terapiyle kıyaslandığında bu terapinin daha hızlı olduğu gözlemlenmiştir.*

*Varılan sonuç: EMDR mental travma ve travmatik hafızaların bütün alanlarında göze çarpan gelişmeler sağlamıştır. Elde edilen gelişmeler, beynin nörobiyolojik seviyelerinde oluşan kalıcı değişimleri gösteren varolan diğer terapiler ve ilaç tedavilerine nazaran daha hızlı ve devamlıdır.*

**Anahtar Kelimeler:** EMDR, PTSD, Tf-CBT, insan kaynaklı afetler, doğal afetler, psikolojik travma, Pakistan, IES-R, SCID-I, CTRPI, AFIMH ve ACTR.

## 1. Introduction

### 1.1. Transition from Trauma focused cognitive behavioural therapy (Tf-CBT) to EMDR

Post-traumatic stress disorder (PTSD) is an anxiety disorder that is diagnosed when a person 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 self or others and the person's response involved intense fear, helplessness, or horror (DSM-IV-TR-2000). There are numerous forms of psychological trauma sustained by multiple natural and man-made sources. These atrocities include incidences like domestic vehemence, physical abuse, rape, street assault, mugging or battles cause extensive psychological trauma. Similarly natural disasters and calamities produce direct physical injuries as well as widespread mental trauma in individuals. An individual can be the victim of single traumatic experience or suffer from enduring adversities (Michael et al., 2005). After experiencing a traumatic event, a person may display a range of disorders, including acute stress disorder (ASD), post-traumatic stress disorder (PTSD), depression, generalized anxiety disorder, childhood traumatic grief, specific phobias, and separation anxiety (Stallard 2006).

Among the trauma therapies, cognitive behavioral therapy (CBT) is qualified as an established treatment (Saxe et al., 2007). A recent systematic review of effects of interventions for trauma symptoms revealed that individual and group CBT was most effective (Wethington et al., 2008). CBT for trauma is based on the principles of cognitive and learning theories and aims to decrease negative emotions and behaviors, and to transform dysfunctional cognitions and attributions about the traumatic event (Saunders et al., 2004). Trauma-focused CBT (Cohen et al., 2005). Cohen et al., 2004) consists of multiple components, including: trauma narrative, in vivo mastery of trauma reminders, affect modulation, cognitive processing, psycho-education, relaxation, parenting skills and enhancing safety, healthy sexuality, and future development (Cohen et al., 2007). There are multiple exposure based therapies for mental traumas, yet all these therapies may not be fruitful in some individuals and this may considerably hamper treatment outcomes.

### 1.2. Synopsis of Eye Movements Desensitization and Reprocessing (EMDR)

An American psychologist Francine Shapiro is the originator of the Eye Movement Desensitization and Reprocessing (EMDR) and this therapy first came into lime light in 1989. With eight stages of protocol of EMDR, the traumatic memory is desensitized by short imaginal exposure to this memory and the subsequent

offering of bilateral stimuli (Rodenburg et al., 2009). This is repeated until the accompanying level of disturbance has disappeared and the dysfunctional cognitions about the trauma have become functional (Shapiro 2007). Traumatic memories are expected to transform into least stress inducing memories through EMDR. The adaptive information processing (AIP) model shares features with the emotional processing model, which explains the reduction of fear in anxiety disorders (Foa & Kozak 1986). Thus, free association and distancing is allowed by means of the EMDR procedure; within the emotional processing model free association is generally not allowed (Lee 2008). (Rogers & Silver 2002), (Solomon & Shapiro 2008).

With EMDR a three-pronged approach is used, which includes questions regarding the etiology of the traumatic event (past), the triggers of PTSD symptoms (present), and the installation of future templates related to adequately coping with upsetting events (future) (Shapiro 2001). Initial phases of EMDR is collecting of history of the client and planning clients treatment, explanation of the process of EMDR and preparation of client for EMDR. Client is taken through all phases of EMDR in each session. Through the process of EMDR each negative cognition is extracted and substituted with a healthy positive cognition for a traumatic incident. The physical dissonance associated with that traumatic memory are transformed or relieved subsequently. Subjective Units of Disturbance (SUD) is a ten point Likert-scale used to measure the level of subjective disturbance and desensitization is attained until the disturbance is substantially reduced. Therapist carries out sets of bilateral stimuli which basically give access to the traumatic memory and its associated emotional burden in the client. Validity of Cognition Scale (VOC) is a seven point Likert-scale used to measure the strength of the faulty negative cognition. The process of bilateral stimuli is repeated till the individual consigns a positive thought in place of the older negative thought. The last phases of EMDR are accomplished by positive closure and re-evaluation. The number of sessions essentially depends upon the severity of traumatic event and negative memories. Initially, bilateral eye movements were considered as a key element in the EMDR therapy, however, other external bilateral stimuli have also been used in the EMDR treatment, such as taps (tapping the hands of the therapist) (Beer & De Roos 2008) and ear tones (Shapiro 1993) (Shapiro 2007). With EMDR unprocessed memories of traumatic experiences, stored in neural networks, become linked with the adaptively processed memories of positive experiences, which are referred to as reprocessing (Shapiro 2007). Following a review of seven meta-analyses which explored the effectiveness of EMDR, Spates et al, concluded that EMDR was an effective treatment for PTSD, and equally

effective as exposure based therapies, with large effect sizes, and considered EMDR as robust in its overall effect, recommending it as a Level A treatment intervention for adult PTSD.(Spates et al., 2009) (Farrell et al., 2011).

### 1.3. Inception of EMDR in Pakistan

EMDR in Pakistan owes its inception to a massive tragedy that occurred in October 2005 in the form of an earthquake. An estimated 80,000 people lost their lives in this natural calamity. There was extensive destruction of assets and property. Yet soon after this disaster steered an age of international help and support. One such support was in the form of Humanitarian Assistance Programme (HAP) of United Kingdom. The main contributors to the project being those from the University of Birmingham, Belfast Health & Social Care NHS Trust, Edge Hill University Liverpool and the Centre for Trauma Research & Psychosocial Interventions (CTRPI), Rawalpindi, Pakistan (Farrell et al., 2011). To date more than 180 Pakistani mental health workers have now been fully trained in EMDR including Armed Forces psychiatrists, civilian psychiatrists, clinical psychologists and registered social workers who were predominantly working with earthquake survivors(Farrell et al., 2011). A pertinent question to ask would be as to how would EMDR, as effective evidence based psychological treatment intervention, adapt to being utilized by mental health clinicians in Pakistan (Farrell et al., 2011)?

This case study aims to investigate the effectiveness of EMDR therapy in myriad of complex psycho-trauma in unique circumstances with an overarching theme contaminated with persistence of terrorism, pressure to perform effectively as a judicial head in a terrorist hit area and failure of response to full trials of SSRIs. The innumerable complex psycho-trauma events included frequent witnessing of brutally tortured headless human torsos, fear of Improvised Explosive Devices (IEDs) enroute to court and his residence, being shot at by the terrorists at his cavalcade multiple times and death of one his close bodyguards. Furthermore distress was caused by constant threatening roar of nearby army artillery guns and helicopters landing in the yard next to his court, pressure from family and friends to quit the job and intention to start afresh in the civil sector all became what was the dilemma that this individual was going through.

## 2. Materials and Method

### 2.1. Subject

Single participant of this case study was a sitting session judge of judicial governmental scaffold who reported to this mental health tertiary care facility at his own accord with features of intense anxiety, depression, maladjustment issues and post- traumatic stress for a duration of 3 months. One of his challenges was to keep a 'sane mind' and to give out judicial rulings and judicial orders and by every passing day he felt being compromised at this capacity. The client was initially treated by the one of the authors, a consultant psychiatrist and put on selective serotonin reuptake inhibitor (SSRI)

paroxetine with an adequate dose. After undergoing a full trial of SSRI, he remained a partial responder and his symptoms of intense anxiety, terror attacks, being overwhelmingly fearful, depressed mood, low self-esteem and harbouring inappropriate feelings of guilt. Then there were flashbacks of numerous critical incidence coupled with avoidance, nightmares, hyper-arousal and inability to perform as a judicial head in active war stricken area of northern Pakistan. After a trial of SSRIs had failed the patient was offered an alternate in the form of EMDR therapy considering his lukewarm response and plethora of non-relenting psychiatric symptoms. EMDR was offered only as a substitute treatment after discontinuation of paroxetine (SSRI). Prior to start of EMDR he was scored on Impact of Event Scale (IES) and this was noted as pre EMDR IES score. Safe place was established and reinforced with the client. There were more than 25 traumatic events considered as 'major target' and almost all of them were declared as 'severe' in intensity and scored on subjective units of distress (SUDS) as 10+. The patient suffered from multiple psychological traumas of diverse forms and fulfilled diagnostic criteria for PTSD as assessed by the English version of the PTSD module of the Structured Clinical Interview for DSM-IV (First et al., 1997). Symptoms were endorsed and informed consent was obtained. EMDR treatment strictly followed the protocol suggested by Shapiro (Shapiro 1995) and included all eight phases described in her book. Three authors of the study (M.S.Bilal, M.H.Rana and R.Qayyum) – all classified psychiatrists, carried out the treatment at different times. Duration of each EMDR session was one hour more or less.

### 2.2. Treatment settings

Centre for Trauma Research and Psychosocial Intervention (CTRPI) which is a supplementary mental health unit of Armed Forces Institute for Mental Health (AFIMH) Rawalpindi was the treatment venue. CTRPI in essence is a tertiary care mental health facility and is a drainage point for peripheral mental health facilities. This centre was established in collaboration with the Aberdeen Centre for Trauma Research (ACTR) Scotland, in direct response to providing services for any form of psycho-trauma and its treatment. In topographical connotations however this centre is about 230 km away from the workplace of the client. He would travel twice weekly for the EMDR sessions from northern Pakistan to CTRPI, a journey demanding considerable bravery and risk involved. A total of 17 EMDR sessions were undertaken.

### 2.3. Instruments

#### 2.3.1. Impact of Event Scale (IES)( Horowitz M et al 1979)

Developed by Horowitz et al this is a widely used 15 item self-report questionnaire evaluating experiences of avoidance and intrusion which attempts to reflect the intensity of posttraumatic stress reactions.( Horowitz M et al 1979).

### 2.3.2. Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)(First, Michael B., Spitzer, Robert L, Gibbon Miriam, a 1996)

This is a semi-structured interview for making the major DSM-IV Axis I diagnoses(First, Michael B., Spitzer, Robert L, Gibbon Miriam, a 1996). The Clinician Version, SCID-CV, is an abridged version of the SCID-I-RV, adapted specifically to cover diagnoses most commonly seen in clinical settings(Zanarini MC, Frankenburg FR 2001).

### 2.3.3. Subjective Units of Distress (SUDS)

This is a scale that integrally incorporated in EMDR protocol ranging from 0-10. Subjectively 0 is considered as the least distressful level and scoring of 10 is considered as most distressful level for the client.

## 3. Result

After 17 sessions of EMDR, there was marked improvement in his anxiety and mood symptoms. He gradually improved in his mental wellbeing with each EMDR session. His mood improved from subjectively being depressed to subclinical depression/ euthymic. His symptoms of flashbacks, nightmares, avoidance of his work place and also fear for the daily route to his court reduced significantly and hyper-arousal diminished considerably. His life in social and occupational domains improved. The individual was scored on the two scales with pre and post EMDR evaluations. These results are tabulated below in a table form (Table 1). IES scores were taken regularly as they indicated a stressful or traumatic event within the subjects past seven days and since the subject was part of an ongoing traumatic scenario IES scores were taken before each session.

**Table 1:** The pre and post IES and SUDS score of the patient

EMDR Session No	Pre EMDR IES score	Post EMDR IES score	Pre EMDR SUDS score	Post EMDR SUDS score
1	72	15	12	2
2	69	12	10	1
3	67	11	11	2
4	71	13	10	1
5	66	9	9	1
6	68	7	9	1
7	65	9	9	1
8	69	14	8	1
9	64	7	9	2
10	66	8	8	1
11	63	9	7	0
12	58	6	8	0
13	57	7	8	0
14	62	11	7	0
15	52	7	8	0
16	47	6	9	1
17	36	13	7	0

## 4. Discussion

This case serves to give a preview of the efficacy of EMDR beyond complex PTSD in an individual with multiple complex psychological traumas and suffering with a plethora of anxiety and affective symptoms. His failure to respond to a completed trial of SSRI paroxetine further gave impetus to the debate of pharmacological versus non pharmacological interventions. Where pharmacological means seemed deficient, this synclactic therapy brought marked improvement in an enduring onslaught of mental horrors for this patient. This individual was not occupationally performing adequately as a judge. If his mental condition had persisted for more time the full aspects of his disorder would have surfaced. This would have complicated the situation even further by bringing doubt to the court orders passed recently by him. So burden of time to get healthier rapidly was also part of the expected resolution. With the continuing sessions of EMDR more and more traumas were un-repressed and targeted with EMDR. The high pre EMDR scores improved tremendously and SUDS for various events/ targets dropped from 11 or 12 (on a scale of 10) to 1 or 2. The total EMDR sessions undertaken were 17. Where drug treatment had failed for this patient, EMDR brought him back to working levels of occupational effectiveness. After several EMDR sessions he managed to continue with the same line of work in the same terrorist hit war zones not contemplating leaving the profession anymore. Prior to EMDR, his social and family life had almost come to being nonexistent and with EMDR he reported a significant boost in his self-esteem, lifting of mood, enhanced levels of mental wellbeing, feelings of being adjusted within the same harsh circumstances, significant reduction of nightmares, reduced levels of hyper-arousal even with ongoing complex war against terror. He had become an improved person in terms of personal wellbeing.

The clinical efficacy of EMDR in post-traumatic stress disorder treatment for adults has been well established (Bisson et al., 2007). Efficacy of EMDR's to treat trauma has been demonstrated in approximately 20 controlled studies, in which EMDR was compared to psychopharmacology and various forms of psychotherapy, on the basis of which the practice guideline of the American Psychiatric Association and the Department of Veterans Affairs and Department of Defense classified EMDR as an effective treatment for PTSD. (American Psychiatric Association 2004),( Department of Veterans Affairs & Department of Defense 2004). The same status is also reflected in numerous international guidelines (Bleich et al., 2002),(Dutch National Steering Committee Guidelines Mental Health Care 2003),(National Collaborating Centre for Mental Health 2005),( Sjöblom et al., 2003).

The efficacy of EMDR for adults with PTSD symptoms has been demonstrated in several meta-analyses (Bradley et al., 2005)(Davidson & Parker 2001)(Seidler & Wagner 2006) but incremental efficacy, which means that a new treatment should add incremental value to established treatments, has not yet been supported (Rodenburg et al., 2009). EMDR, although a well established and well researched therapy still faces criticism and doubt as to its efficacy and effectiveness. Our study adds impetus

to this incremental value of using EMDR as first line treatment in Pakistan as well, instead of just docking at pharmacological interventions.

EMDR has now being adapted as first line treatment for PTSD at par with trauma focused cognitive behavioural therapy (TF-CBT) by National Institute for Clinical Excellence (NICE 2009). One of the arguments to support why EMDR and cognitive behavioural therapy are effective is that they both share the same neurobiological objective and that is to down regulate the amygdala so as to allow the hippocampus and medial pre-frontal cortex to come back on line (D.P. Farrell et al., 2011). EMDR efficacy has been debated for several reasons, but mainly with reference to the absence of an empirically validated model proficiently explaining the effects of the EMDR method (Gunter & Bodner 2008)(Perkins & Rouanzoin 2002) and the role of the considered working mechanism in the form of the bilateral stimuli (Lohr et al., 1999). It has been demonstrated nevertheless that eye movements contribute to less vivid and unpleasant memories in people with non-clinical symptoms(Andrade et al., 1997)(Barrowcliff et al., 2004)(Kavanagh et al., 2001). Besides, it has been found that eye movements decrease psycho-physiological arousal and increase parasympathetic activity in people with PTSD symptoms (Elofsson et al., 2008)(Sack et al., 2008). Several hypotheses that exist try to explain the mechanism of bilateral stimulation and the mechanism of the processing itself as posited with the AIP model (Shapiro 2007)(Shapiro 1995)(Shapiro 2001)(Solomon & Shapiro 2008). These hypotheses pertain to the EMDR inducing a REM sleep state-like condition(Stickgold 2008), the working memory account (Gunter & Bodner 2008), the investigatory reflex account Barrowcliff et al., 2004)(MacCulloch & Feldman 1996) the increased hemispheric communication account,(Christman et al., 2006) or the hypothesis of relaxation) (Shapiro, F. 2007). The case presented in this paper had multiple trauma forms and failed drug treatment and yet it was observed that EMDR provided marked improvement in all the domains of his deficits and this was at a prompt speed as compared to cognitive behavioural therapy (CBT) which usually takes longer duration of therapy and more sessions. The improvements in this individual were not short lived indicating permanent changes happening at neurobiological levels of brain.

In Pakistan, EMDR is still in its infancy and it's a novel treatment modality for mental health professionals, psychiatrists and psychologists alike. This case highlights the vast horizons of EMDRs cogency in complex man-made disasters and the promising future of EMDR for many mental health sufferers and stigmatized population as a substantial alternate to drug treatment. Further research in this direction in Pakistan would enable this type of non-pharmacological intervention (NPI) modality to be adapted as part of many treatment guidelines in Pakistan.

## 5. Conflict of interest

Authors declare no conflict of interest.

## 6. Grant support and financial disclosure

None declared.

## 7. Ethical considerations

This study was approved by the hospital ethical committee.

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