

Efficacy of Eye Movement Desensitization and Reprocessing (EMDR) in the Iranian Veterans with Chronic Post-Traumatic Stress Disorder (PTSD) after Iran-Iraq War

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Abstract. To explore the efficacy of Eye Movement Desensitization and Reprocessing (EMDR) to treat Iranian Veterans who have experienced Post-Traumatic Stress Disorder (PTSD) after Iran-Iraq war, a pilot study was designed with pre-test, post-test and control group. First through clinical interview (psychiatrist and clinical psychologist views) and PTSD scale of Mississippi, 30 people of the war Veterans suffering from chronic PTSD were chosen. Then the patients were placed in two different experimental and control groups randomly. Only experimental group were treated with EMDR for four-session in four weeks. After treatment, both groups were assessed with PTSD scale of Mississippi. The obtained results were analyzed with ANCOVA and the results showed that the difference between the experimental and control groups were statistically significant ($f=5.501$, $p=0.027$). With regard to results, it can be stated that this difference was created by EMDR treatment.

Keywords: Eye Movement Desensitization and Reprocessing (EMDR), Chronic Post-Traumatic Stress Disorder (PTSD), Veterans, Therapy, War Injured People.

1. Introduction

War as a severe stress factor has extensive, individual, economical, social and cultural consequences, which have remarkable effects on the relationship of the society members even in the next generations. The emergence of physical and mental problems is the harmful effect of every war. [1]. In Iran the eight-year war and the stress made by it have caused Post-Traumatic Stress Disorder (PTSD) and the other mental disorders related to the war stresses and the prevalent disorders among the fighters and the injured ones and their families [2][3][4].

PTSD is classified in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as an anxiety syndrome that may follow a confrontation with an extreme stressor therefore it is a kind of mental disorder among the people that have been exposed or witnessed events threatening the life or body of the person or other people and the reaction of the person appears in the form of sever fear, helplessness and terror [5].

A psychological trauma treatment method called eye movement desensitization and reprocessing (EMDR) was introduced by Shapiro [6]. She claimed that when the agitated thinking enters her mind she moves her eyes back and forth and these movement changes her agitated thinking in consciousness and when these thinking returns to her mind, they are not very troublesome. She tested her theory on the survivals of the war and the sexually abused ones and got positive results. Shapiro reported her success in using a method which she called EMDR to treat the hurt victims in the *hurting stress Journal* in 1989. Then the other therapists in the other part of the world helped to the development of this method [7]. Although controversial from the beginning, the method has gained wider acceptance and is today recommended in international guidelines for treatments as one of a few treatments of choice for trauma victims [8]. The EMDR method consists of a structured treatment package, and integrates techniques from cognitive behavioural, psychodynamic and body-oriented therapy [9]. To treat the negative feelings and the consequences of the war and other harmful events, different collection of treatment approaches are used but EMDR for war-related PTSD treatment has been discovered by Shapiro in 1989 as the newest treatment method based on encountering in the cognitive-behavioural approach and has been introduced as a selected treatment of PTSD [10].

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Shapiro claims that EMDR is justifiable on the basis of Pavlove's cortical Mosaic theory. They are two basic process govern all the activities of central nerve system which are arousal and inhibition. Every environmental event matches with a part in the cortex. As the events are experienced, the either arouse the activity of the cortex or inhibits its activity. This arousal and inhibition pattern which determine the characteristics of the brain in every movement, determines the way somebody or something reacts to its environment. Pavlove supposes a state of balance for this arousal and inhibition pattern which maintains the performance of human. Now of any cause like a traumatic event leads to imbalance, it inhibits correct process of what occurs. What EMDR does is that it removes the imbalance and develops the balance in nerve system [11].

Shapiro suggests that the unprocessed perceptions are seen in nightmares, flashback memories and disturbing thoughts of the people suffering PTSD. In EMDR we ask the person to think about a harm-causing event and then arouse her information processing system to make it think about the harm-causing experience and then arouse her information processing system to wake her process and digest the harm-causing experience in an appropriate way. As the digestion process continues the sights start and the necessary associations are formed and what is useful is learned and the proper excitement gets the control [10]. On the basis of Hopenwasser theory, EMDR gradually lets the activity of limbic area and sensitized brain bridge Pons reduces and in this way the performance of higher cortex is facilitated [12].

Haghgo reports that EMDR new, effective and efficacious psychotherapy technique for treating the PTSD uses two-way stimulus with the right and left eye movement of touching or sound stimulus which depletes the excitement experiences trapped in the nerve system by activating the brain hemispheres. [13].

According result of current study, EMDR treatment has been effective on the reduction of PTSD symptoms of the survivals of Vietnam war [6], the Iranian survivals of Iran-Iraq war [10] [14], the traumatized Iraqi children from Iran-Iraq war to Malaysia [15], the reduction of the symptoms of PTSD caused by terroristic attack [16], the reduction of the PTSD symptoms due to war through the change in EEG of brain [17], survivals of Bam Earthquake in Iran [7], sexually abused one [18]. And it has even more efficiency than stress inoculation training [19], lack of treatment [20], and stable result of medicine-treatment drug-therapy [21]. And according to the report of Lamprecht and at.al [22], EMDR has been shown to be effective on the reduction in orientation to new stimulus and reduction of arousal after PTSD treatment.

This study was conducted with the purpose of determining the effectiveness of EMDR treatment on the reduction of PTSD symptoms on war injured people in Iran-Iraq war in Iranian culture.

2. Method

2.1. Design, Sampling and data collection

The pilot study is designed and Pre-and post-test with experimental and control group. Therefore from the statistical universe who are all the war Veterans referring to Emergency Department of Fajr Psychiatric Hospital in one month and all the war injured people who were bedded in that hospital during that month (30 people) who were selected as sample from age, sex, education through interview and Mississippi test. The sampled people were placed one experiment group (14 people) and one control group (16 people) randomly. The experimental group was treated in EMDR for four 45 minute session. To measure the degree of the disorder the Mississippi scale [23] for PTSD was used.

2.2. Instruments and Analysis

This scale is self-reporting and is used to evaluation of PTSD. The subjects answer these items with a scale of five-degree (false, rarely true, sometimes true, highly true & completely true). PTSD scale has a high internal consistency coefficient. The reliability coefficient has been reported through Cronbach Alpha 0.86 to 0.94 [24]. The cut of point grade, sensibility and distinguishing power of the test has been reported as 107, 0.93 and 0.83 respectively [25]. Pre- and post-changes in PTSD symptoms in experimental and control group were examined using analysis of covariance (ANCOVA).

3. Results

In order to study the effect of EMDR on PTSD, the data were analyzed through ANCOVA. First the descriptive statistical indices were calculated for two groups (table 1). It showed that the average of the PTSD grades of the experimental group has reduced in post-test compared to that of control group.

Table 1: descriptive indices

group		Pre test Mississippi	Post test Mississippi
experimental	N	14	14
	Mean	120.93	89.07
	Std. Error of Mean	2.77	5.57
	Std. Deviation	10.38	20.85
control	N	16	16
	Mean	123.94	107.06
	Std. Error of Mean	2.41	4.82
	Std. Deviation	9.65	19.28

After recognition of the effect of the independent variable (EMDR) on dependent variable (PTSD), Information was analysed using ANCOVA (tables 2 and 3). On the basis of these results, the pre-test had a significant relationship with the post-test ($f=12.925$, $p=0.001$, $Eta=0.324$) and also group effect can be stated about the results. After modification of the grades of pre-test, the factor effect among the subjects was significant ($f=5.5$, $p=0.024$, $Eta=0.17$).

Table 2: Tests of Between-Subjects Effects (Dependent Variable: Post test Mississippi)

Source	Type III Sum of Squares	df	Mean	F	Sig.	Partial Eta
Pre test Mississippi	3632.84	1	3632.84	12.93	.001	.32
group	1546.06	1	1546.06	5.5	.027	.17
Error	7589.03	27	281.08	-	-	-

With regard to the factor that the ANCOVA test was significant, a pair comparison was conducted (table 3). According to the information of this table the difference of the modified averages for two group in post-test is (-14.362) and significant ($p=0.027$). Since the average of PTSD grades in experimental group is lower, it can be claimed that this difference was because of EMDR.

Table 3: Estimates (Dependent Variable: Post Mississippi)

group	Mean	Std. Error	Mean difference	Std error	sig
experimental	90.900a	4.509	-14.562	6.209	0.027
control	105.462a	4.215			

4. Discussion

When considering the implications of this pilot study, it is important to remember that it is based on a limited number of participants, only one psychotherapist. The aim was, at first attempt to establish whether EMDR treatment could be used to help veterans experiencing PTSD after war.

The findings from this pilot study suggest that EMDR can be a useful tool in helping Veterans who have experienced PTSD. The findings are in line with the other finding [7][10][13][14][15][16][17][18] [19] [20][21][22][26][27]. When the children treated with EMDR were compared to the children treated with established trauma treatments (CBT), EMDR adds a small but significant incremental value [28]. EMDR can be a useful tool in helping women who have been severely traumatized by childbirth But Symptoms of 'intrusive thoughts' and 'avoidance' seem most sensitive for treatment [29].

The intense scrutiny, scepticism and resistance to accepting EMDR is expected and critically necessary, especially given its non-traditional introduction and serious missteps by EMDR proponents. However, there is no longer credible scientific debate or 'controversy' about the efficacy of EMDR and the literature on EBT-PTSD firmly demonstrates that there are no universal panaceas. Therefore continued resistance to fully researching, training and using EMDR does not serve the best interest of science and beneficiaries, predominantly combat veterans [30]. The consistent finding of the EMDR's efficacy points to another direction for future research. As well as the need for further research on the efficacy and the efficiency of trauma treatments, it is important to study which type of trauma treatment best suits the different types of

traumatic events [28]. But often researches have verified the effect of EMDR in reduction of PTSD symptoms. It can be claimed that EMDR is effective and quickly efficacious to treat PTSD [13]. This treatment method also cause the reduction in the degree of the symptoms related to DSM criteria for PTSD. The EMDR efficiency in comparison to not having treatment is remarkable. In this method rapid improvement occurs and a few sessions are necessary [27][20]. Among the psychotherapy, the efficiency of the behaviour therapy and EMDR is high. And they have almost the same effect, but the treatment effects of EMDR are much more stable [21]. EMDR reduces the arousal and lead to clear improvement in PTSD [22].

The result of this study certifies the Shapiro's idea who claims that EMDR is justifiable on the basis of Pavlove's cortical Mosaic theory and cognitive processing. At last, it can be stated that the results of present study can certify the Hopenwasser's theory about the physiological changes developed in the brain by EMDR.

5. Conclusions

EMDR with veterans showed that it is efficacious in treating PTSD symptoms. Moreover, this study found the incremental efficacy of EMDR when compared to established treatment. More multi-centre research, with randomized designs and larger sample sizes, is needed to examine whether the current findings can be replicated. Issues of efficacy should in this respect not only pertain to incremental efficacy. Veterans with PTSD symptoms could benefit from the research on the efficacy of treatments while taking into account distinct types of traumatic events and the multiple factors underlying PTSD development.

It is suggested that the psychological specialists start to treatment of PTSD in their client by using the treatment techniques and strategies of this method. And the researcher confront the kinds and dosage of the drugs taken, illness tensity, sex and marital status by research and study the effectiveness of this method about the other disorders.

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7. References

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