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Benefits and Limitations of the Use of Eye Movement Desensitization and Reprocessing
Therapy and the Implications for Treatment of Veterans with Posttraumatic Stress Disorder

by

Rachel J. Bridges

Undergraduate honors thesis under the direction of

Dr. Jahanna Bailey, DSW, LCSW-BACS

School of Social Work

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& Agricultural and Mechanical College

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Abstract

Posttraumatic Stress Disorder (PTSD) is a condition that can affect anyone who experiences a traumatic event in their lifetime. Certain populations of people are more likely to develop PTSD based on age, gender, race, or profession. One such population specifically at risk for developing PTSD is members of the military and veterans. There are numerous available treatments for PTSD such as Cognitive Behavioral Therapy (CBT), Prolonged Exposure (PE), pharmacotherapies, and Eye Movement Desensitization and Reprocessing (EMDR) therapy. Despite receiving a conditional recommendation by the American Psychological Association, the Department of Veterans Affairs considered EMDR to be a highly effective treatment option and has designated it one of the Department's most efficacious treatments. This review aims to explore the benefits and limitations of EMDR in the treatment of PTSD and specifically, the implications of this treatment method within the military community.

Keywords: posttraumatic stress disorder, PTSD, eye movement desensitization reprocessing therapy, EMDR, veterans, Department of Veterans Affairs, treatment

Table of Contents

Acknowledgements.....	2
Abstract.....	3
Benefits and Limitations of the Use of Eye Movement Desensitization and Reprocessing Therapy and the Implications for Treatment of Veterans with Posttraumatic Stress Disorder.....	5
Introduction.....	5
<i>Symptoms of PTSD</i>	7
<i>Prevalence</i>	9
<i>Cultural, Gender, and Age Considerations</i>	11
<i>Risk Factors of PTSD</i>	13
Veterans and Posttraumatic Stress Disorder	15
Eye Movement Desensitization and Reprocessing Therapy	16
<i>History</i>	16
<i>Adaptive Information Processing and EMDR</i>	18
<i>Phases of EMDR</i>	20
Methods	22
Results.....	24
Benefits of EMDR Treatment.....	24
Limitations in the Use of EMDR Treatment.....	25
Discussion	27
Implications for Veterans with PTSD.....	27
Conclusion	28
References.....	31
Appendix A.....	39

Benefits and Limitations of the Use of Eye Movement Desensitization and Reprocessing Therapy and the Implications for Treatment of Veterans with Posttraumatic Stress Disorder

Introduction

Posttraumatic stress disorder (PTSD) is a trauma related condition that affects about 3.5% (or 11.5 million) of the population of the United States (Gradus, 2021). According to the American Psychiatric Association's (APA) *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5), PTSD can cause disruptions in a person's day to day life including "high levels of social, occupational, and physical disability, as well as considerable economic costs" (APA, 2013, p. 278). PTSD can have profound effects with debilitating consequences on those who suffer from it. Considering the nature of PTSD, it is a condition that has become synonymous with mental health awareness within the military community. As such, healthcare agencies within the Department of Defense and Department of Veterans Affairs are constantly seeking better and more effective treatment options.

One such form of treatment for PTSD is Eye Movement Desensitization and Reprocessing therapy, or EMDR. First discovered in the late 1980s by Francine Shapiro, EMDR's theoretical framework is rooted in the principles of Adaptive Information Processing (AIP). AIP focuses on the brain's ability to experience, process, store, and (when necessary) reprocess information as a way of creating adaptive or maladaptive memories. EMDR allows clinicians to guide their clients through a traumatic memory and reprocess it in such a way that the client no longer feels the distressing physiological reactions they once did.

The purpose of this review is to examine what exactly PTSD is, who is at risk for developing it, what EMDR is, what the phases of treatment are, and the theoretical framework upon which it is based. Additionally, the benefits and limitations of EMDR and what these factors mean for the treatment of PTSD within the veteran population of the United States are examined. The goal of this review is to better understand what makes EMDR a first line treatment option for many international and domestic treatment guidelines and how its use can better serve the military community.

Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) is a condition that can develop due to exposure to an event in which death, critical injury, or sexual violence may have occurred. The DSM-4 outlines four ways in which an individual may experience a traumatic event (TE). The first way a TE can be experienced is directly to oneself. The second way a TE can be experienced occurs when an individual witnesses a TE occurring towards others (such as witnessing someone be murdered). The third way in which a TE can be experienced is when an individual learns about a TE that may have happened to “a close family member or close friend” (APA, 2013, p. 271). The fourth and final way in which a TE can be experienced occurs when an individual is repeatedly exposed to disturbing details pertaining to an event. An example of this kind of TE could include instances such as a police officer responding to multiple child pornography cases or technicians collecting evidence from a crime scene. The DSM-4 notes that exposure to traumatic content through media (such as movies, pictures, television, audio recordings, etc.) is not considered a legitimate TE unless the content is viewed in relation to work-related tasks. An example of this would be during instances in which police officers must review graphic material during the

course of their investigation. It is important to note that anyone can develop PTSD and that there is no single defining threshold for what may or may not cause PTSD as evidenced by the varying responses individuals may have when experiencing a TE (what may cause PTSD in one person, may not in another; U.S. Department of Veterans Affairs, 2020).

Symptoms of PTSD

PTSD is characterized by a combination of symptoms that usually appear within three months of a traumatic event and last for at least one month (National Institute of Mental Health [NIMH], 2019). Certain symptoms may vary between children and adults. Symptoms can be divided into four categories: re-experiencing symptoms, avoidance symptoms, arousal and reactivity symptoms, and cognition and mood symptoms (NIMH, 2020). Re-experiencing symptoms include flashbacks, recurring memories or dreams, distressing thoughts, and physiological stress reactions (such as body aches, headaches, muscle tension or jaw clenching, digestive issues, or sexual dysfunction; Cleveland Clinic, 2021). Avoidance symptoms include staying away from places, people, events, or objects that are reminders of the TE or avoiding thoughts and feelings that are reminders.

Arousal and reactivity symptoms include being easily startled, feeling tense or “on edge,” difficulty concentrating, difficulty falling or staying asleep, feelings of irritability (such as increased anger or outbursts), or engaging in risky or destructive behavior (NIMH, 2020). Finally, cognition and mood symptoms include poor memory regarding key elements of the TE; negative or distorted feelings regarding oneself, the TE, or the world (this could include feelings of guilt, blame, fear, anger, or shame); or loss of interest in enjoyable activities and difficulty feeling positive emotions (NIMH, 2020).

While many of the symptoms for PTSD may be similar between adults and young children, how these symptoms present is notably different and highly dependent on age (NIMH, n.d.). The National Institute of Mental Health (n.d.) outlines three age ranges and how they may respond to trauma: children five years of age and younger, children six to eleven years of age, and children twelve to seventeen years of age. Children five years of age and younger may present symptoms of PTSD in the following ways: increased “clinginess” towards caregivers, increased tantrums and instances of irritability, physical discomfort (such as stomachaches), regressive behaviors (such as bedwetting and thumb sucking after developmentally appropriate discontinuation of these behaviors), increased fear, or integrating aspects of the TE into pretend play (NIMH, n.d.).

Children ages six to eleven may present symptoms of PTSD in the following ways: a sudden decline in academic performance, poor concentration at school, and a loss of interest in activities they once enjoyed. Children may begin to isolate from friends and family, experience nightmares, or develop unsubstantiated fears. They may also experience physical symptoms such as headaches, stomachaches, or loss of appetite. School-aged children may also participate in “posttraumatic play” or “posttraumatic reenactment” (Hamblen & Barnett, 2021). Posttraumatic play is an observable phenomenon that occurs after a traumatic experience. It differs from conventional play in that posttraumatic play is “driven, serious, lacking in joy, and frequently morbid” (Chazan & Cohen, 2010, para. 1). Posttraumatic reenactment can serve as a way for someone who experienced a TE to attempt to master a skillset they were lacking and hence, the TE was “allowed” to happen. The behaviors of posttraumatic reenactment can result in adaptation or maladaptation (Levy, 1998).

Finally, adolescents aged twelve to seventeen may experience symptoms of PTSD such as: nightmares and sleep problems; avoidance of stimuli related to the TE; beginning using drugs, alcohol, or tobacco; becoming disruptive, disrespectful, or behaving destructively; isolating themselves; expressing feelings of anger or resentment; experiencing physiological reactions; or losing interest in enjoyable activities (NIMH, n.d.).

When making a diagnosis of PTSD, clinicians should specify if the condition presents dissociative symptoms. Dissociative symptoms are categorized in one of two ways: depersonalization (a consistent feeling of being detached from one's own body or observing themselves outside their body; sometimes described as if the person were in a dream) and derealization (when one experiences the world around them in a distorted or unreal way; APA, 2013). Additionally, clinicians may specify, if necessary, the marker of delayed expression if “full diagnostic criteria” is not met until at least six months after the TE. These specifications can be made for both children and adults (APA, 2013).

Prevalence

The initial prevalence of PTSD and other mental health conditions were established using the National Comorbidity Survey: Baseline (NCS-1) and later, the National Comorbidity Survey Replication (NCS-R). NCS-1 was conducted between 1990 and 1992 and sampled over 8,000 respondents (Kessler, 2008). The diagnostic criteria used for the NCS-1 were based on the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (DSM-3-R;1987; Kessler, 2008) As the first nationally representative survey of mental disorder prevalence in the United States, the NCS-1 is considered a turning point for psychiatric diagnosis and treatment (Kessler, 2008). Between 2001 and 2002, respondents to the original baseline survey were

reinterviewed to study patterns of their mental and substance use disorders. This study was referred to as NCS-2 (Harvard Medical School, 2005). A second study was run in addition to NCS-2 during February 2001 and April 2003, referred to as NCS-Replication (NCS-R; APA, 2013). The NCS-R was intended to be a more comprehensive study that sought to elaborate on the information found in the NCS-1. The NCS-R focused on obtaining more information on topics that were either not covered or covered poorly during the original study. It also incorporated new information that had become available on many of the mental health disorders first explored in the NCS-1 (Harvard Medical School, 2005). The NCS-R was performed using the diagnostic criteria of *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-4; APA).

Table 1 represents the 12-month prevalence of an individual developing PTSD. Table 2 represents the lifetime prevalence of an individual developing PTSD. Both tables represent data collected in accordance with the diagnostic criteria set forth by the DSM-4. The information provided here was taken from the published data from the NCS-R.

Table 1. 12-Month Prevalence of DSM-4/PTSD. Harvard Medical School (2005).

Total		Sex				Cohort							
%	SE	Female		Male		18-29		30-44		45-59		60+	
		%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
3.6	(0.3)	5.2	(0.4)	1.8	(0.3)	4.0	(0.5)	3.5	(0.5)	5.3	(0.6)	1.0	(0.2)

Note. The NCS-R was conducted with a sample size equal to $n = 9282$; however, the prevalence of PTSD was established in the Part II sample, which was equal to $n = 5692$.

Table 2. Lifetime Prevalence of DSM-4/PTSD. Harvard Medical School (2005).

Total		Sex				Cohort							
%	SE	Female		Male		18-29		30-44		45-59		60+	
		%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
6.8	(0.4)	9.7	(0.7)	3.6	(0.3)	6.3	(0.6)	8.1	(0.9)	9.2	(0.8)	2.8	(0.5)

Note. The NCS-R was conducted with a sample size equal to $n = 9282$; however, the prevalence of PTSD was established in the Part II sample, which was equal to $n = 5692$.

Cultural, Gender, and Age Considerations

It is important to consider the implications culture, gender, and age may have on the proper diagnosis, treatment, and recovery from PTSD. As previously stated, the NCS and its subsequent follow-up studies were incredibly important towards the study of mental health disorders. Despite this, neither the NCS-1 or the NCS-R reported if cultural demographics were explored as part of prevalence rates. However, the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) was a diagnostic survey performed between 2004 and 2005 that consisted of structured interviews and DNA sampling (National Institute on Alcohol Abuse and Alcoholism, n.d.). The NESARC interviewed 34,653 adults in the United States and found that lifetime prevalence of PTSD was highest among respondents who identified as Black. (Roberts, et al., 2011). Their lifetime prevalence was 8.7%. Individuals who identified as Hispanic or White had what was determined to be “intermediate prevalence” with rates of 7.0% and 7.4%, respectively. Respondents who identified as Asian had the lowest lifetime prevalence, 4.0% (Roberts, et al., 2011).

Race also played a role in the type of TE an individual is most likely to experience (Roberts, et al., 2011). People who identified as Black or Hispanic were more likely to experience trauma in the forms of child maltreatment or witnessing of domestic violence. People who identified as Asian had the highest risk of developing PTSD due to the many Asian countries experiencing war. Individuals who identified as White were more likely to experience “any trauma.” They were also more likely to seek out treatment, which could lead to more frequent diagnoses than in minority populations (Roberts, et al., 2011).

According to Roberts et al. (2011) minorities had “substantially lower odds of treatment seeking for their PTSD-related symptoms than Whites...” (para. 50). Some of the barriers to treatment within minority populations included high stigmatization of mental illness, a reluctance to seek help outside family units, and extreme distrust of healthcare providers, stemming from “the perception of racial or ethnic biases in care providers” (para. 50). A final barrier to treatment occurs because of the poor access to mental health care facilities many racial and ethnic minorities face due to living in high poverty or rural locations (Roberts, et al., 2011).

Just as cultural considerations must be made, gender also plays a role in the diagnosis of and treatment of PTSD. Overall, women are less likely to experience a TE than men, but women are two-to-three times more likely to develop PTSD. Additionally, about half of all women living in the United States will experience a TE during their lifetime (Vogt, 2021). Despite encountering fewer TEs, women are diagnosed with PTSD more often than men, leading to their increased risk of sexual assault and trauma (Tolin & Foa, 2006). According to the National Intimate Partner and Sexual Violence Survey conducted in 2015, one in five women will experience an attempted or completed rape in their lifetime (Smith, et al., 2018). Essentially,

although women are less likely to experience a TE, the type of TE they experience is more likely to produce an outcome of a PTSD diagnosis. Finally, men are less likely to report symptoms of depression or anxiety, which can lead to misdiagnosis of symptoms or no diagnosis at all (Vogt, 2021).

According to the National Center for PTSD, the prevalence of PTSD among children has not been studied in a large-scale, population-based study. Studies have examined the prevalence of PTSD in high-risk children (such as those who have experienced abuse or natural disasters); therefore, the data on children vary considerably. However, the data did indicate that children may have a higher prevalence of PTSD when exposed to a TE than those in the adult population (Gradus, 2021). A small study conducted in 2003 found that, true to gender considerations, girls were more likely to develop PTSD using the DSM-4's criteria than boys: 6.3% for girls and 3.7% for boys (Direk et al., 2010).

Risk Factors of PTSD

PTSD is a condition that anyone can potentially develop; however, some individuals are at a higher risk than others of developing it. A meta-analysis of risk factor data performed by Brewin et al. (2000) found that before or during a TE, three main factors can impact the likelihood of developing PTSD. These factors include a greater severity of trauma (such as military combat), a lack of social support, and more life stressors after the TE. These factors were found to have the highest correlation risk of developing PTSD.

The DSM-5 (APA, 2013) identifies three categories for evaluating risk: pretraumatic factors, peritraumatic factors, and posttraumatic factors. Pretraumatic factors can be further broken down into three subcategories: temperamental, environmental, and genetic/physiological.

Pretraumatic temperamental factors may include a prior history of childhood emotional conditions that become apparent before age six or a prior mental health disorder before the TE. Environmental factors include elements such as being a member of a lower socioeconomic status, having a lower education level, a high number of adverse childhood experiences (commonly known as ACEs), impacts of culture, being a member of a racial or ethnic minority, or having a family history of mental health disorders. Finally, pretraumatic genetic and physiological factors cover risk factors such as identifying as a member of the female gender or being of a younger age when the TE is experienced. This final subcategory also takes into consideration a person's own genetic predisposition towards developing PTSD or even being resilient against its development.

The next category of risk assessment outlined by the DSM-5 (APA, 2013) is peritraumatic environmental factors. These include elements such as the severity (or dose) of the trauma, the perceived life threat, and having experienced personal injury or interpersonal violence. Gender plays a role in the type of trauma a person may encounter. Men are more likely to experience a TE in the form of combat service, accidents, natural disasters, or disasters caused by humans. Women are more likely to experience a TE in the form of sexual abuse, domestic violence, or sexual assault (Greenberg, 2018). For members of the military, peritraumatic factors include perpetrating violence, witnessing extreme violence, or actively participating in killing. Finally, the occurrence of peritraumatic disassociation (PD) has a direct correlation to the development of PTSD (Aho et al., 2017).

The final category of risk outlined by the DSM-5 (2013) is posttraumatic factors. These factors take into consideration elements that may occur after the TE and include temperamental

and environmental considerations. Posttraumatic temperamental elements include negative cognitions about the TE, inappropriate or inadequate coping techniques, and the development of other acute stress disorders. Environmental factors include continuous or reoccurring exposure to reminders of the TE and troublesome life events after the initial TE. Social support, or the lack thereof, can be a resilience factor or contribute to environmental risk factors.

Veterans and Posttraumatic Stress Disorder

According to the Mayo Clinic (2018), the most common TEs that can lead to PTSD are combat exposure, childhood physical abuse, sexual violence, physical assault, being threatened with a weapon, or accidents. Many of these specific events are experienced by service members in the course of deployments; therefore, service members and veterans are one of the most at-risk groups for developing PTSD. Veterans of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) have some of the highest levels of PTSD since the Vietnam War. The National Center for PTSD (Gradus, 2021), created in 1989 by Congressional mandate PL98-528 (U.S. Department of Veterans Affairs, 2021), lists the number of veterans with PTSD from these two wars between 11% and 20%. Veterans of the Gulf War (also known as Desert Storm) had a prevalence of PTSD of about 12%. The National Vietnam Veterans Readjustment Study conducted in the late 1980s found that about 15% of Vietnam veterans had PTSD. More recently, it is estimated that 30% of Vietnam veterans have had PTSD in their lifetime (Gradus, 2021). The similar rates of PTSD among OIF, OEF and Vietnam veterans are due to the urban setting of many battles and the guerilla warfare tactics used in both theaters (Reisman, 2016).

Until recently, an accurate number of total veterans diagnosed with PTSD has been, to some extent, controversial. A debunked concern was that service members and veterans might

seek a diagnosis of PTSD for “secondary gain,” leading to an overdiagnosis of the condition (Gates et al., 2012, para. 3). This has since been debunked as larger and more accurate studies have been performed. In fact, studies performed under the diagnostic criteria of DSM-4 may have underdiagnosed the true number of veterans with PTSD (Gates et al., 2012). In addition, the RAND Center for Military Health Policy Research found that “less than half of returning veterans needing mental health services receive any treatment at all, and of those receiving treatment for PTSD and major depression, less than one-third are receiving evidence-based care” (Reisman, 2016, para. 2).

As with prevalence rates in the civilian population, gender plays an important role in identifying PTSD in veterans. Female veterans are at a higher risk of having experienced military sexual trauma (MST), with an estimated 1 in 4 female veterans reporting an MST event (DAV, n.d.). Despite the unique challenges female service members encounter, there are few studies that focus on female veterans’ mental health. Maguen et al. (2010) referenced one study performed by Hoge et al. (2004) which found that 15.6% to 17.1% of OIF veterans and 11.2% of OEF veterans fell within the screening criteria for one or more mental health disorders but the composition of females within this study was, at maximum, only 2%.

Eye Movement Desensitization and Reprocessing Therapy

History

Eye Movement Desensitization and Reprocessing Therapy (EMDR) was first discovered in 1987 by Francine Shapiro, Ph.D. (Shapiro, 2018). The foundational principles of EMDR were discovered by accident by Dr. Shapiro when she realized her own distressing thoughts were

becoming less triggering seemingly of their own accord. To better understand how this was happening, Dr. Shapiro discovered that when a distressing thought was recalled her eyes rapidly shifted bilaterally and she felt less negatively impacted by the disturbing thought the next time it arose (Shapiro, 2018). According to her book, Dr. Shapiro was able to create the foundation of modern EMDR in about six months while working with roughly 70 volunteers. This preliminary method was called Eye Movement Desensitization (EMD; Shapiro, 2018).

The first attempt at using EMD for the treatment of PTSD was performed during late 1987 using the diagnostic criteria of DSM-3. Dr. Shapiro worked with “Doug”, a Vietnam veteran who claimed to have a manageable hold on his PTSD symptoms but still struggled from time to time (Shapiro, 2018). After only a few sessions, Doug began to feel relief from intrusive memories and his PTSD symptoms were alleviated. The first controlled study was performed by Dr. Shapiro and was comprised of 22 Vietnam combat veterans or survivors of rape. Members of the treatment group and control group were randomly assigned. Dr. Shapiro noted two main changes within the treatment group. First, those members who received EMD treatment reported reduced symptoms of anxiety, which indicated desensitization of triggers. Second, members of the treatment group also reported improved perception of positive beliefs, which indicated successful cognitive restructuring. Dr. Shapiro noted, for ethical purposes, EMD was also administered to the control group after the conclusion of the trial. This group also noted positive changes when they received this treatment.

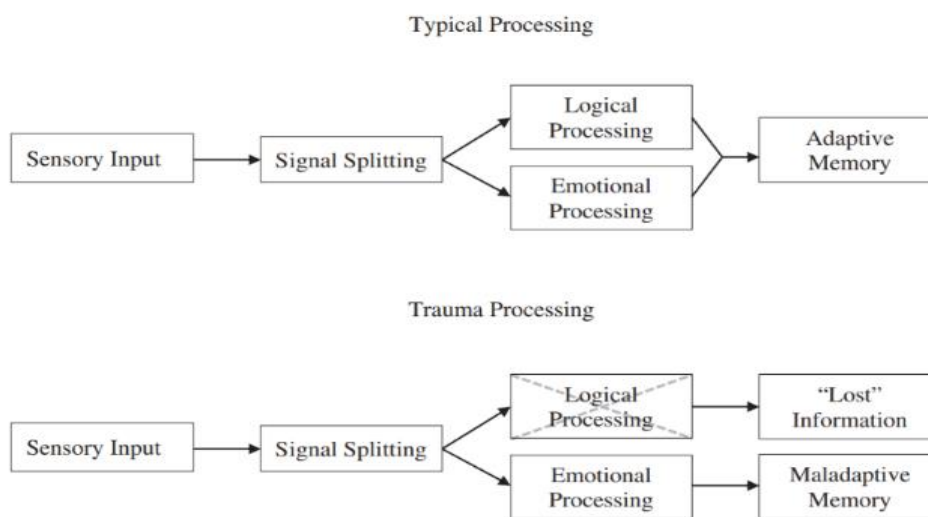
Perhaps most importantly, Dr. Shapiro followed up with members of this initial study at one-month and three-month intervals and found that the positive effects of EMD treatment had been sustained. These outcomes included “substantial desensitization, pronounced cognitive

restructuring of perceptions regarding the traumatic event, and a decrease in primary symptoms...” (Shapiro, 2018, p. 10). EMD was renamed EMDR in 1990 after the basis of treatment shifted from desensitization to a more information-processing structure. Since its inception, over twenty randomized and controlled studies have been conducted and published to validate its efficacy.

Adaptive Information Processing and EMDR

EMDR was founded on the principles of the Adaptive Information Processing model (AIP; American Psychological Association, 2017a). It was first established in 1991 to provide a theoretical framework for EMDR under the name Accelerated Information Processing theory (Hill, 2020). In 2001, Dr. Shapiro changed the name from Accelerated Information Processing theory to its current name. The reason for this was because she felt that the term “adaptive” better explained how AIP focused on the information processing system (Hill, 2020). According to the principles of AIP, memories can become pathogenic in nature when they are not stored or processed correctly (Hase et al., 2017). The assumption of the AIP model is that the human brain is capable of processing traumatic information and that psychological conditions such as PTSD arise when the natural information processing system (IPS) is impaired or altered. During this state, the IPS will incorrectly process memory and instead store a “raw, unprocessed and maladaptive” memory (Hase et al., 2017, para. 5). Essentially, memories may be processed adaptively and lead to typical storage or they may be processed maladaptively, which leads to atypical storage. This atypical storage and expression are what cause negative symptoms in individuals with PTSD and other trauma-related conditions (Hill, 2020). Figure 1 outlines typical processing versus traumatic processing (Hill, 2020).

Figure 1. Typical versus Trauma Processing



The AIP model indicates that memory can become pathogenic (or maladaptive) in response to high stress or high trauma and thus, a TE would inhibit the brain's natural ability to process and store memory. This maladaptive storage leads to symptoms of PTSD such as intrusive and disturbing memories, flashbacks, nightmares, disassociation (Hill, 2020). Previous experiences or extreme emotions regarding the TE can also inhibit proper processing and, ultimately, storage of memory (Hase et al., 2017). EMDR targets the IPS and allows for reprocessing of pathogenic memories leading to reduction or elimination of symptoms.

AIP works in conjunction with EMDR under the theory that bilateral stimulation (such as eye movement or auditory or tactile stimulations) reactivates all parts of the brain and increases and improves communication within the memory storage parts of the brain. As the brain functions at its highest level, it can locate maladaptive memory fragments and reprocess them in a safe and non-traumatic form (Hill, 2020).

Phases of EMDR

EMDR is conducted using an eight-phase, systematic treatment model (Menon & Jayan, 2010). According to the EMDR International Association, or EMDRIA, (2021) the eight phases of EMDR are history and treatment planning, preparation, assessment, desensitization, installation, body scan, closure, and reevaluation. None of the phases has a set amount of time assigned to it and can be conducted over as many sessions as necessary, hence the use of the term “phase” as opposed to “stage” (Hase, 2021).

During phase one, or the history and treatment planning phase, the clinician and client explore what brought the client in to receive services, establish rapport, and develop a treatment plan. Phase two, the preparation phase, allows clinicians to educate the client on the process of EMDR treatment, explains clinical terms that may come up, and sets expectations. This is also a time for clients to express concerns about treatment and identify coping techniques and mechanisms they will rely on throughout the course of treatment. Phase three, the assessment phase, allows clinicians and clients to begin exploring the target event. The clinician will collaborate with the client to identify images, feelings, thoughts, and sensations that are relevant to the event. The clinician will also utilize the Subjective Units of Disturbance Scale (SUDS) and the Validity of Cognition (VOC) scale to establish a baseline before reprocessing begins.

The SUDS is a “one-item 11-point Likert-type subjective anxiety scale,” which can be used by clinicians to assess a client’s level of emotional distress (Kim et al., 2008, para. 2). Clinicians will use SUDS by asking their client to compare their current state of distress to a scale ranging from zero to ten with zero being the lowest and ten being the highest. Because SUDS is an important aspect of EMDR treatment that provides insight into a client’s mental state

before, during, and after treatment, it is imperative that the clinician guides the client in assessing the correct emotion (Shapiro, 2008). Clients may often feel multiple emotions at one time and the clinician should help the client determine what each emotion is, to what extent it is related to the TE, and its independent rating on the SUDS compared to other emotions.

The VOC scale is a 7-point Likert-type scale that uses self-assessment by the client to identify maladaptive or dysfunctional beliefs, feelings, or thoughts regarding the TE (Shapiro, 2008). During this assessment, the clinician will ask the client to bring the TE to the forefront of their mind and then give an example of a belief they have pertaining to the event. An example of this might be “I am worthless” or “I am useless.” The clinician will then request the client to determine a positive cognition and use the VOC scale to determine how strongly they believe in that statement, with one being completely false and seven being completely true (APA, 2017a).

Phases four through six are described as the reprocessing portion of treatment. During this time, the clinician and client work together to utilize dual attention bilateral stimulation (BLS) to activate the client’s IPS. BLS can include activities such as side-to-side eye movements, sounds, or tapping on one's temples, shoulders, or lap (EDMRIA, 2021). During the desensitization phase (phase four), BLS is used to activate the IPS while the client focuses on the TE. This process is completed over several sessions with the goal being the reduction of their SUDS score to zero or one. Phase five, or installation, begins when phase four has been completed as evidenced by appropriate SUDS scores. Installation is a process in which the client works to recognize resilient and positive qualities within themselves. Through repeated installation, the perception of these qualities begins to strengthen until they are totally accepted. Once the client has reached a desirable SUDS score and has a strong attachment to their positive

beliefs, they are asked to focus on their TE while also performing a mental body scan to assess where lingering stress needs to be addressed and reprocessed. This is the beginning of phase six. This phase is revisited frequently to ensure the client is in-tune with their body's signals, which may indicate additional trauma that needs to be addressed or the feeling of resolved trauma (i.e., less physiological reactions to maladaptive memories).

Phases seven and eight focus on maintaining the client's treatment plan and ensuring it acts as a dynamic contract between clinician and client. These phases include closure (phase seven) and reevaluation (phase eight). The phase of closure occurs at the end of every reprocessing session and is not strictly performed at the end of treatment. The closure phase of treatment focuses on assisting the client to return to a state of calm. Reprocessing is ongoing throughout treatment and is considered complete when a client reaches a score of zero on the SUDS scale and a score of seven on the VOC scale. Reevaluation occurs at the start of each reprocessing session. The clinician and client discuss the client's state of mind, recently addressed memories, and ensure the client's distress level remains low. Reevaluation is also an opportunity to evaluate a client's positive cognition. The treatment plan (such as future TEs to be addressed and direction of treatment) is adjusted, as necessary.

Methods

A search of internet sources was the primary method of obtaining information for this report. Information was gathered that related to PTSD, EMDR therapy, the relationship between PTSD and veterans, and the efficacy of treating veterans with PTSD with EMDR. Additional research was conducted to explore the benefits of and potential limitations of EMDR on PTSD in the veteran community. The three primary online sources utilized were the LSU Discovery

database provided by LSU libraries, Google Scholar, and the National Institute of Mental Health. The author also utilized access to treatment books available to them through colleagues at the Grief Recovery Center of Baton Rouge who provide EMDR treatment to many of their clients.

The primary terms used during this research include “posttraumatic stress disorder,” “PTSD,” “eye movement desensitization and reprocessing therapy,” “EMDR,” “adaptive information processing,” “veterans,” “PTSD treatment,” “EMDR limitations” and “EMDR benefits.” The results of searches on these terms yielded a total of 47 sources. The sources included peer-reviewed scholarly articles, government agency websites (such as those provided by the Department of Veterans Affairs and the National Institute of Health), and the EMDR handbook.

The sources used in this report were mostly limited to between 2000 and the present. Originally, the author limited searches to contain sources from 2010 to present; however, this was extended to the year 2000 because of the history of both PTSD and EMDR. Much of the research available on PTSD references the DSM-4 and goes back as far as DSM-3. Additionally, EMDR was first created in 1989, and therefore, it has an extensive research history available. The author was able to compare research from twenty years ago to more modern research for both main aspects of this review when the decision was made to explore a greater date range.

In addition to research performed via search engines, the author also had the opportunity to shadow several EMDR sessions at the internship they are currently a part of as a degree requirement for their Bachelor of Social Work degree.

Results

Benefits of EMDR Treatment

Despite only being developed in 1989 and being considered new by many standards, EMDR has proven to be a valuable resource in the treatment of PTSD. Since its inception, EMDR has not only been proven to be an effective treatment for PTSD, but it has also been proven to be the most cost-effective form of treatment currently available for adults (Mavranouzouli et al., 2020). The effectiveness of EMDR has been evaluated in over twenty randomized controlled trials (RCTs) since the 1990s (Beauvais et al., 2021).

Several studies have also been conducted to evaluate the use of EMDR in contrast to other forms of treatment (such as medication and Cognitive Behavioral Therapy [CBT]). One study performed between July 2000 and July 2003 found that EMDR was more beneficial for the treatment of PTSD and resolution of symptoms than the use of medication in adults. At the six-month follow-up, 75% of adults with PTSD who received EMDR reported that they found a total resolution of symptoms when compared to the groups who only received the medication fluoxetine, also known as Prozac (van der Kolk et al., 2007). Another study done on survivors of childhood sexual assault found that, although the control and experimental group had improvements in their PTSD symptoms, the group that received EMDR had longer lasting resolution of symptoms during an 18 – month monitoring period (Edmond & Rubin, 2004).

A meta-analysis of data conducted by the Department of Veterans Affairs found that EMDR “produces moderate to strong treatment effects in regard to PTSD symptom reduction, depression symptom reduction and loss of PTSD diagnosis” (Beauvais et al., 2021, para. 8). Another meta-analysis of treatments performed in 2015 examined the “efficacy, comparative

effectiveness, and adverse effects of psychological treatments for adults with PTSD” (Cusack et al., 2015, p. 1). Specifically, this analysis explored 64 trials containing clients who had a diagnosis of severe PTSD and were graded by a unit of measurement called “strength of evidence” or SOE. The levels of SOE were insufficient, low, moderate, and high. Ultimately, EMDR was given a rating of moderate SOE for achieving a resolution of a diagnosis of PTSD.

According to the World Health Organization (WHO), EMDR is a first-choice, evidence-based treatment for PTSD (WHO, 2013). EMDR is considered one of the most highly regarded treatment options for PTSD according to clinical practice guidelines for the Department of Defense, the International Society for Traumatic Stress Studies (ISTSS), the United Kingdom’s National Institute for Health and Clinical Excellence, and Australian National Health and Medical Research Council (Beauvais et al., 2021). Endorsement of EMDR by the ISTSS is particularly notable as their approval derives from “systematic reviews developed by the Cochrane database, the National Institute for Health and Care Excellence guidelines and...the WHO” (Castelnuovo et al., 2019, p. 1). As a primary choice of treatment for PTSD, EMDR is on the same level as other, more well-known treatments, such as exposure therapy, cognitive therapy, and cognitive reprocessing therapy (Haagen, et al., 2015). As of 2017, the American Psychological Association (2017a) has given EMDR a conditional recommendation.

Limitations in the Use of EMDR Treatment

As is the case with most medical treatments, EMDR is not without controversy or questions. On February 24, 2017, the American Psychological Association adopted their current guidelines for the treatment of PTSD in adults. The 139-page guideline was created to “provide recommendations on psychological and pharmacological treatments for [PTSD] in adults” (APA,

2017a. p. 1). The APA acknowledged that the guideline development panel noted their conditional recommendation of EMDR may change to a strong recommendation but at the time of this writing in 2022, these guidelines have not changed. The significance of the APA's recommendation lies with who the APA is. The American Psychological Association is, according to their website, "the leading scientific and professional organization representing psychology in the United States..." (APA, 2022, para. 1). As such, many professionals use the APA and its recommendations to inform their treatment options. Because of its conditional recommendation by APA (an agency with jurisdiction within the United States), EMDR may not be a first-choice treatment regardless of the higher recommendation status it holds with other domestic and international agencies.

In response to the APA's guidelines, a review of the data found that several errors could have contributed to the decision to apply a conditional recommendation to EMDR. Dominguez and Lee (2017) explore seven of these possible errors. Most of the complaints focused on which studies the APA chose to include or exclude in their review and subsequent guideline determination. Dominguez and Lee make the argument that if these errors are rectified, the APA would have grounds to change their recommendation level of EMDR to "strongly recommend," which would align their guidelines with those of other evidence-based practice recommendations from international entities such as the WHO and ISTSS (Dominguez & Lee, 2017).

In addition to the concerns that arise because of the APA's recommendation status, EMDR has also been criticized for several aspects that question the validity of this treatment method. McLay et al., (2016) cite instances in which concerns were raised about aspects of EMDR, which could potentially lead to resistance in the use of this treatment. Examples of these

concerns include questioning whether bilateral stimulation is necessary at all for reprocessing to take place and the idea that EMDR could be a “power [therapy]” or “treatments that contain almost magical results” (McLay et al., 2016, para. 6).

Discussion

Implications for Veterans with PTSD

EMDR appeals to many clients because of the lack of necessity for verbalization of traumatic memories but rather, allows the client to hold the TE within their mind and focus on it (EMDR Institute, n.d.). This is an especially effective “selling point” for many veterans who struggle when discussing the source of their trauma. The lived experience of many veterans is so unique that to divulge these TEs in detail to a civilian can be incredibly difficult and even serve as a barrier to treatment. EMDR allows these veterans to address their trauma without discussing it, as is a requirement in other treatment methods such as CBT. This is evidenced by the fact that clients seeking CBT had higher early termination rates compared to those receiving EMDR treatment (EMDR Institute, n.d.).

As with any specific demographic it is important to study potential treatments through the lens of that population’s unique needs. Although treatments for PTSD have long been evaluated and discussed, few evidence-based treatments have been exclusively researched or designed for veterans with PTSD specifically stemming from combat trauma (McLay et al., 2016). In fact, most studies of EMDR have been conducted using civilian populations with only four RCTs exploring EMDR on military-related PTSD (all of which were published over twenty years ago; Beauvais et al., 2021). Few studies have been conducted to determine the effectiveness of

EMDR when treating clients with comorbidities to their PTSD. One study that is currently underway in Germany is exploring the effectiveness of EMDR in clients who also have substance use disorder. The first client was enrolled in this study during 2015 and the study protocol was published in 2017. It is an ongoing study and, as such, results are not yet available at the time of this writing (Shäfer et al., 2017).

Despite this, the importance of research focusing on military-specific trauma and treatment cannot be stressed enough. A study conducted by the Naval Center for Combat and Operational Stress Control in San Diego, California found that 63% of clients who received EMDR to treat their PTSD “showed a clinically significant improvement of 10 points on the [PTSD Checklist – Military] compared to only 39%” of clients that did not receive EMDR (McLay, et al., 2016, p. 705). The authors of this study did note that because of the limited data extending to active-duty populations and combat-specific trauma, more research and RCTs are required to definitively determine the full extent of effectiveness of EMDR within this population.

Conclusion

In some ways, EMDR allows clients to “redo” a traumatic experience and reclaim power over the event. Although the trauma can never be undone, clients do not need to suffer needlessly in the aftermath of the event. According to the principles of EMDR, memories can be reprocessed and stored appropriately and, perhaps more importantly, an individual’s cognitive beliefs about the event can be reframed. Military-related trauma, whether it be from sexual assault, combat-related trauma, moral injury, or any other number of events, is a specific kind of trauma that less than 1% of the American population will ever encounter (Council on Foreign

Relations, 2020). The type of trauma military members experience and the general culture within the military require a complex approach to treating mental disorders. Given their unique needs, clinicians may need to be creative in their treatment options for veterans.

EMDR offers clinicians a way of treating their clients' PTSD by not only resolving their symptoms but also helping them overcome the diagnosis. By reprocessing traumatic memories, those receiving treatment can begin to resolve symptoms that might interfere with their ability to work, maintain relationships, parent their children, or any other number of socioemotional aspects of life. The merits of EMDR have been studied and proven through multiple scientific studies. But EMDR is not without limitations. There are few studies specifically focusing on treatment within the military populations or in clients with comorbid diagnoses to PTSD. The American Psychological Association's 2017 treatment guideline does not list EMDR as a preferred treatment option, which is in direct conflict with the Department of Veterans Affairs' top-3 recommendation. This inconsistency in guidelines could lead to confusion in best practice treatment options for those working with veterans.

Healthcare providers, such as those working in mental health, should always strive to provide their clients with effective, up-to-date, and evidence-based treatment options. By not aligning with other major treatment guidelines, the APA risks limiting treatment options available to veterans. These consequences could lead to veterans struggling unnecessarily with their PTSD diagnosis and symptoms. Farther reaching consequences of untreated PTSD could include impacts such as a decline in military readiness, poor morale among troops, negative effects on military family structures, or contribution to substance abuse and suicide within the military and veteran populations.

It is the belief of this author that, in order to provide the highest quality of care available, the APA should take immediate action to parallel international and domestic treatment guidelines and make EMDR a standard treatment for PTSD. Additionally, the Department of Veterans Affairs would benefit from sponsoring additional studies to explore the treatment of PTSD in veterans in specific demographic groups. Some groups worth looking into specifically would be female veterans, LGBTQIA+ veterans, veterans with substance use disorder, veterans with non-combat related trauma, and veterans with comorbid mental health conditions. Expanding research not only provides clinicians with a wider range of understanding of treatment, it also encourages treatment that is more equitable to the specific needs of a diverse military population.

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Appendix A

Glossary of Acronyms

(Alphabetical order)

AIP	Adaptive Information Processing
APA	American Psychological Association <i>or</i> American Psychiatric Association
BLS	Bilateral Stimulation
CBT	Cognitive Behavioral Therapy
DSM	Diagnostic and Statistical Manual of Mental Disorders (editions 3, 4, or 5)
EMD	Eye Movement Desensitization
EMDR	Eye Movement Desensitization and Reprocessing
IPS	Information Processing System
MST	Military Sexual Trauma
NCS	National Comorbidity Survey
NCS-R	National Comorbidity Survey – Revised
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PTSD	Posttraumatic Stress Disorder
RCT	Random Controlled Trial
SOE	Strength of Evidence
SUDS	Subjective Units of Disturbance Scale
TE	Traumatic Event
VOC	Validity of Cognition