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QUANTITATIVE RESEARCH

Treatment of PTSD and SUD for the incarcerated population with EMDR: A pilot study

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Abstract

Adverse childhood experiences predict recidivism. In incarcerated individuals, post-traumatic stress disorder (PTSD) rates are higher. A study with 122 inmates with PTSD and substance use disorder explored eye movement desensitization and reprocessing (EMDR)'s effectiveness. EMDR worked across gender and race, reducing PCL-C scores posttreatment and at 2 and 4 weeks. IER-R scores lowered from weeks 1 to 9. EMDR boosted affect, reasoning, and attitudes posttreatment.

KEYWORDS

eye movement desensitization and reprocessing (EMDR), incarceration, mental health, post-traumatic stress disorder (PTSD)

Trauma is an emotional response to a disturbing or distressing event that occurs as a result of a physical, emotional, or psychological threat to the safety of the patient or friends and loved ones and can feel overwhelming and unsettling (American Psychological Association, 2017). Overall, 70% of adults in the United States have experienced a traumatic event in their lifetime (Sidran Institute, 2018), and women are roughly twice as likely as men to meet the post-traumatic stress disorder (PTSD) criteria (Olf, 2017). Unlike the high rates of exposure to traumatic events, the prevalence rates among the general population for PTSD are much lower ranging from 7% to 10% (Conteh et al., 2017), reminding us that not everyone who experiences trauma gets diagnosed with PTSD. Trauma has multiple types, including acute, chronic, and complex trauma. *Acute trauma* consists of a single threatening event, for instance, a natural disaster (Jerominus et al., 2018), a motor accident (Bahrts et al., 2020), the news of a diagnosis of a chronic illness (National Cancer Institute, 2021). *Chronic trauma* involves prolonged exposure to stress-inducing environments, such as in cases of child abuse (Cummings & O'Donohue, 2018) and occupational experiences of police officers (Wills & Schuldberg, 2016), and *complex trauma* involves exposure to several traumatic and distressing events (O'Neill et al., 2018).

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Following a traumatic stressor, individuals undergo an assortment of post-traumatic reactions instinctively within the first month. Such events, which are frequently accompanied by extreme fear, horror, and helplessness, might cause the development of PTSD and are necessary for its diagnosis if the symptoms continue for 3 months. PTSD is a disorder characterized by four clusters of symptoms: intrusive re-experience of the event, avoiding stimuli that remind the person of the trauma, negative changes in mood and/or cognitions related to the trauma or numbing, and changes in reactivity and arousal (American Psychiatric Association, 2013). PTSD symptoms can range from mild to severe but still pose debilitating side effects for those affected. Approximately 3.5% of Americans per year meet the criteria, with an 11% lifetime prevalence (American Psychiatric Association, 2021).

Trauma, substance misuse, and other mental health issues

Trauma has also been found to greatly increase the risk of later substance use (Levin et al., 2021). There is a link between early childhood trauma and substance misuse or dependence. According to Enoch (2011), those who have experienced trauma are more likely to turn to alcohol and drugs in order to cope with stressful situations. They rely on methods for reducing their emotional reactions to demanding circumstances, and thus, substances are commonly used by trauma survivors to immobilize the symptoms of trauma. Among people who use drugs, women are more likely to meet the criteria for PTSD than men (Mitra et al., 2021). Men and women with PTSD are more likely to relapse than their peers with only a substance use disorder. As per Jacobsen et al. (2001), the most common comorbidities that occur in men with PTSD are alcohol abuse, followed by depression, anxiety disorders, and conduct disorders; whereas in women with PTSD, rates of comorbid depression and other anxiety disorders are most common, followed by alcohol abuse and dependence.

Additionally, it has been discovered that incarcerated individuals are more likely than non-inmates to have suffered trauma as a child (Hodges-Pietryka, 2022). Comorbid psychiatric issues were prevalent in 78.5% of cases in a survey of 7403 adults in the United Kingdom, with comorbidities such as major depressive disorder, social phobia, generalized anxiety disorder, obsessive compulsive disorder, agoraphobia, panic disorder, and substance use disorders (Qassem et al., 2021).

PTSD in incarcerated populations

Adverse childhood experiences have been found to be a significant predictor of criminal recidivism (Heirigs et al., 2020). In the incarcerated population, the rate of PTSD is significantly higher as compared to the general population, ranging from 17% to 33% among male inmates (Belet et al., 2020) and 40%–48% among female inmates (Belet et al., 2020). A meta-analysis found that PTSD is more common in prison populations than it is in the general population, with a pooled point prevalence of 6% for male inmates and 21% for female prisoners (Baranyi et al., 2018). Compared to women in the general community, incarcerated women are nearly two times more likely to describe histories of physical and sexual abuse (Silberman, 2010). According to the research of Giarratano et al. (2020), among 497 imprisoned adults, women displayed more elevated levels of Complex PTSD (C-PTSD), that is, prolonged and recurring trauma (Resick et al., 2012) symptoms and a greater likelihood of encountering psychiatric difficulties and substance use issues involving hard drugs like heroin and cocaine than men. The study indicates that the contrast in behavioral health challenges between incarcerated men and women may result from the severity of C-PTSD rather than gender, with women experiencing more severe problems and a higher rate of childhood abuse exposure compared to men. Men with PTSD in the incarcerated population report more traumatic events during incarceration. Previous research has shown that more than half (55%) of individuals involved in the criminal justice system have been victimized in the last 6 months, and individuals who have recently been victimized

may use more maladaptive coping skills, increasing their risk of recidivism and periods of heightened stress (Sadeh & McNiel, 2015).

Other factors linked with criminal recidivism due to underlying trauma include elevated rates of maltreatment and cumulative adversity (Vitopoulos et al., 2018). In a sample of severely aggressive delinquent teenagers, Moretti et al. (2006) found that having PTSD had the highest correlation between experiencing violence at home and committing violent acts against others.

If left untreated, PTSD results in heightened vulnerability and stress, leading to overreliance upon fight-or-flight reactions during stressful situations (Beiter et al., 2022; Sadeh & McNiel, 2015). This inability to self-regulate subsequently increases the risk of criminal recidivism, the risk of comorbid mental health and substance use disorders, higher rates of treatment nonadherence, violent behavior, and suicidality. Apart from recidivism, relapse has also been correlated with self-medication with illicit substances in an attempt to alleviate symptoms (Sadeh & McNiel, 2015).

Treatment approaches and gaps for PTSD in incarcerated population

According to Najjar et al. (2008), cognitive behavioural therapy (CBT) is one of the most studied and scientifically supported treatments for trauma symptoms. By training clients to control their emotions by altering their ideas and behaviors, CBT targets and ameliorates problematic thoughts, behaviors, and emotional responses. It also tackles the symptoms of re-experiencing avoidance and arousal. Trauma-focused CBT (TF-CBT) involves psychoeducation, parental skill development, relaxation, emotional modulation, cognitive reprocessing, and the formation of trauma narratives. Although there is substantial evidence that TF-CBT can reduce the symptoms of trauma in adolescents, relatively few studies have looked at its utility in lowering recidivism (Zettler, 2021). Notably, some researchers assert that TF-CBT does not acknowledge or attend to experiences and interpretations of disturbances in physical perceptions and somatic activity patterns (van der Kolk, 2006). Hyperarousal, dissociation, and body awareness, according to van der Kolk (2006), are symptoms of traumatic memories and emotional suffering that necessitate somatically oriented therapy. Through bilateral stimulation (BLS) and brief imagined exposure, the Eye Movement Desensitization and Reprocessing (EMDR) treatment modality desensitizes traumatic memories by targeting the brain's information system (Shapiro, 1989). Notably, the meta-analysis of Khan et al. (2018) randomized clinical trials suggests that EMDR is more effective than CBT in decreasing post-traumatic symptoms and anxiety among individuals with PTSD.

As opposed to any other method of treatment that focuses on changing the emotions, ideas, and behaviors brought on by unpleasant traumatic experiences, EMDR therapy focuses entirely on the specific memory in order to change how it is stored in the brain. The goal of EMDR is to break down any associations that a client may have created between certain memories and unpleasant symptoms. The therapist moves their fingers back and forth in the direction of the client's face while instructing them to follow the therapist's hand motions with their gaze. The EMDR practitioner will invite the client to recall a traumatic event at the same time. Additionally, the matching feelings and sensations will be included. The client's negative thoughts will be progressively replaced by positive ones with the therapist's help. The therapist's lateral eye movements serve as the most frequently used external stimulus, although many other stimuli are also used, including hand tapping and audio stimulation (Shapiro, 1991). In order to deal with traumatic memories and other unpleasant life experiences in an adaptive way, this makes it simpler to retrieve and process them.

EMDR is essentially based on a working memory model theory in which a therapist uses BLS while asking a patient to hold a traumatic memory in mind (de Jongh et al., 2013). Baddeley (2012) proposed an episodic buffer in the working memory model in which information from different sources is bound into chunks, not only cognitively but creatively, allowing us to create something new (i.e., altering a memory with positive cognitions). At the same time, storage in the working memory is limited. As memories with traumatic pairings are inherently fervent, vivid, and emotionally charged, they tax working memory resources as they are recalled. If another task is implemented during recall

(e.g., a patient following the saccadic hand movements of a trained professional), fewer resources are available for the vividness and intrusion of the emotionality of the memory (Baddeley, 2012; de Jongh et al., 2013).

EMDR is effective, well supported, and widely researched. This intervention has received multiple recommendations as an effective treatment for PTSD and a conditional recommendation from the American Psychological Association in 2017 (Shapiro & Brown, 2019), supporting the need for additional research in this area. Multiple studies have tested the efficacy of EMDR against other widely utilized treatment interventions (Carletto et al., 2016). One study found EMDR to be more effective than treatment as usual (TAU) for depression (Hase et al., 2018). Some studies have found no difference between EMDR and TF cognitive behavioral therapy (TF-CBT) (Lewey et al., 2018); other studies have found EMDR to be slightly more effective than TF-CBT (Wilson et al., 2018).

Treatment with EMDR in a prison setting like the one employed in the current study has been observed to be successful in improving the social, affective, and health adjustment of convicts (Malik et al., 2021), supporting the proposition that therapies designed to process trauma and interventions aimed at addressing trauma can be effectively implemented in correctional facilities. Brown et al. (2015) demonstrated that EMDR integrated into comprehensive drug treatment improved program completion rates and decreased recidivism in drug court.

Hanser et al. (2017) advocated for increasing the availability of EMDR for substance-using individuals who are in prison environments. To date, few investigators have studied EMDR in an incarcerated population (Heckman et al., 2007; Fleurkens et al., 2018; Kitchiner, 2000). Indeed, mental health treatment of the incarcerated population is largely absent or inconsistent (Williams & Frey, 2019; Zielinski et al., 2020). Despite the substantial number of incarcerated individuals who have experienced victimization and trauma-related disorders, there is a scarcity of targeted treatments, and only a few have undergone thorough empirical examination (Heckman et al., 2007). Fleurkens et al. (2018) expressed the hope that their case study would pave the way for larger, controlled studies on the efficacy of EMDR (or other evidence-based TF therapies) as the preferred treatment for PTSD in forensic patients who have been traumatized by their own criminal actions. Although Kitchiner (2000) employed a single-case study approach, the current study will utilize a pretest/posttest group design. This study attempts to address this gap in the literature and expand the research on the effectiveness of EMDR with an incarcerated population. Specifically, our aim was to measure changes in PTSD symptom severity in response to EMDR therapy.

METHODS

Participants

This study was conducted at a local community correctional facility in urban Ohio. It is a community-based, state-funded institution housing both male and female felony offenders. A total of 122 residents were recruited to participate in the EMDR intervention and complete the pre- and posttest surveys. The mean age was 34.5 ($SD = 8.3$). Age ranged from 20 to 58 years. The sample was fairly even in terms of gender composition, with 60 females and 62 males. Most residents (111) (91%) were White, and 11 (9.0%) were identified as being Black. All participants were treated in accordance with the ethical standards of the American Psychological Association (2017). The university Institutional Review Board (IRB) reviewed and approved this research project.

Measures

Two measures, the PTSD Checklist for DSM-5—Civilian Version (PCL-C) and the Impact of Events Scale-Revised (IES-R), were used in the present study.

PTSD Checklist for DSM-5—Civilian Version (PCL-C)

The PCL-C was created at the National Center for PTSD (Weathers & Ford, 1996) and was revised two decades later (Blevins et al., 2015). In its current version, the PCL-C is a 17-item checklist that measures the presence and severity of symptoms of PTSD in the past month. It is used for screening, monitoring, and diagnosing PTSD. This self-administered measure takes approximately 5–10 min to complete. Item examples include: “In the past month, how much were you bothered by repeated, disturbing, and unwanted memories of the stressful experience?” and “In the past month, how much were you bothered by having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding)?” The validity and reliability of PCL-C has been well established and rigorously investigated (Blevins et al., 2015; Bovin et al., 2016; Cohen et al., 2014; Wortmann et al., 2016), and it has been found to be a valid and reliable tool to quantify PTSD symptom severity and symptom progress over time. In a review of the literature regarding the reliability of the PCL-C, Roberts et al. (2021) reported Cronbach’s alpha scores ranging from 0.91 to 0.97 for this measure. Possible scores on the PCL-C range from 17 to 85. Scores above 44 are considered indicative of possible PTSD.

Impact of Events Scale-Revised (IES-R)

The IES was originally developed by Horowitz et al. (1979) and is the most widely used self-report measure within the trauma literature (Beck et al., 2008). IES has been appraised as falling short as a measure of PTSD as defined within the DSM (Beck et al., 2008). The scale did not reflect DSM symptomatology of the hyperarousal symptom. To make the IES more reflective of the multilateral PTSD symptom criteria outlined by DSM, the IES-R was then revised by Weiss and Marmar in 2007. In its final form, the IES-R contains eight intrusion and eight avoidance items, derived from the original IES, and six items assessing hyperarousal (Beck et al., 2008). The aim of this revision was to improve the efficacy of the IES and its applicability to the DSM symptomatology for PTSD. With this improvement, IES-R is a 22-item checklist of the symptomatology of PTSD. This revised scale has excellent reliability, with Cronbach’s alpha greater than 0.7 reported by several investigators (Malinauskienė & Bernotaitė, 2016; Sharif Nia et al., 2021). Each item is ranked on a 5-point scale from “not at all” to “extreme” based on how distressing each difficulty has been during the past 7 days, producing a total score that ranges from 0 to 88. A total score of 33 on the IES-R has been demonstrated to be diagnostic of PTSD, with a diagnostic sensitivity of 0.91 and specificity of 0.82 (Creamer et al., 2003). The IES-R was utilized to monitor the weekly progress of the residents between each EMDR session.

Procedure

A pretest/posttest group design was utilized for this study. The following procedure was followed for the present study:

Phase 1: participant assessment and selection

The prison staff administered PCL-C to the residents who had been diagnosed with PTSD by the staff psychiatrists and expressed an interest in EMDR therapy. Their PCL-C scores were computed to identify those residents with the highest scores. PCL-C assessments with the highest scores, along with all pertinent information, were given to the lead investigator for the final selection of a sample for the study. Once a resident was selected for the program, a folder labeled with the resident’s unique

identification number was put together with the following documents: (a) resident's demographic data (race, ethnicity, gender, date of birth); (b) completed PCL-C intake score; and (c) 10 blank copies of the IES-R and 2 blank copies of the PCL-C. All documents within the folder were labeled with the resident's unique identification number.

Phase II: therapy

The lead investigator, trained and certified in EMDR therapy, conducted up to 10 sessions of EMDR therapy with the residents selected for the program. Although we planned to provide 10 EMDR sessions for each participant, most participants received less than 10 therapy sessions due to a variety of reasons. Participants did not receive the full number of sessions either because they were removed or released from the community correctional facility, dropped out of the study, or they met the goals of EMDR therapy. At the start of each session, the lead investigator administered the IES-R to the residents. Each IES-R form was labeled with the resident's unique identification number and either a session number or the date the session was conducted.

Phase III: post-therapy

Once the last session had been completed, the researcher gave the residents the PCL-C again as a posttest. When that was completed, the resident's folder was returned to the staff lead who ensured that two follow-up PCL-C surveys were completed by participants at the correct follow-up time points. The first follow-up session was completed 2 weeks after the last session. The second follow-up session was completed 1 month after the last session.

Ethical guidelines

The researcher emphasized the participants' rights as respondents prior to recruiting them.

The participants were briefed that the study explored a PTSD intervention using EMDR. Participants were informed that they would be expected to be a part of a therapeutic intervention (30–40 min) conducted by the researcher, wherein they would be asked to answer questions for the clinical assessment. Additionally, they were informed that the survey would require around 10–15 min of their time and would consist of different aspects related to their experiences of traumatic stress. Their participation was solicited, but strictly voluntary. The details that the participants provided were kept confidential. To safeguard the identities of those who agreed to be interviewed, code number assignment and de-identification were utilized. The participants were allowed to leave the study at any time with no repercussions. Additionally, the participants were clearly informed about the physical or psychological risks to the participants of this study. If participants had any questions or concerns about the research, they were free to contact the researcher through the facility's staff workers (case managers). Further, participants were told that when this research was completed, the participants would be provided with the results if they requested them.

Data analyses

Differences in PCL-C scores were compared between baseline and immediately after EMDR therapy using repeated-measures *t* tests. For comparisons of PCL-C and IES-R scores across multiple time periods, repeated-measures analyses of variance (ANOVAs) were conducted. In addition,

TABLE 1 Means and one-way analyses of variance of PCL-C scores across different time points.

	Baseline (M)	Post-EMDR (M)	Post 2 weeks (M)	Post 4 weeks (M)	F (3180)	p-Value
PCL-C scores	53.2	15.2	14.2	12.8	349.00	<0.001

independent-sample *t* tests were conducted to investigate differences between men and women and between Black and White participants.

Results

Originally, 10 EMDR therapy sessions were planned for each participant, but only 71 participants completed 5 sessions and less than 50 completed 6 sessions or more. Several participants, depending on their needs, received 12 EMDR therapy sessions. The mean (SD) number of EMDR sessions for men was 4.8 (1.9), and the mean (SD) number of EMDR sessions for women was 5.6 (2.2). No significant difference in the number of EMDR sessions was detected between men and women. In terms of the number of past traumas experienced, men reported significantly fewer traumas ($M = 3.7$) than did women ($M = 4.4$), $t = -2.08$, $df = 67$, $p = 0.04$ (Cohen's $d = -0.524$).

A total of 28 individuals completed only the baseline PCL-C measure and no post-EMDR PCL-C measures. These individuals either dropped out of the study, or they were removed or released from the community correctional facility before completing EMDR treatment. A comparison of baseline PCL-C scores between those participants who completed EMDR treatment and those who did not indicated that those individuals who did not complete EMDR treatment had significantly higher PCL-C scores ($M = 58.8$) than those who completed EMDR therapy ($M = 53.6$), $t(132) = 2.02$, $p = 0.045$ (Cohen $d = 0.430$). Both groups had baseline PCL-C scores that were much higher than the cutoff score of 44 indicating PTSD.

When comparing PCL-C scores between baseline (before EMDR therapy) and immediately after EMDR therapy, a repeated-measures *t* test indicated a significant reduction in PCL-C scores from baseline ($M = 53.4$) to immediately after ($M = 16.1$), $t(93) = 19.27$, $p < 0.001$ (Cohen $d = 1.631$). No differences in PCL-C scores were detected between men and women or between Black and White participants. A repeated-measures ANOVA compared PCL-C scores at three time periods: baseline, immediately after, and 2 weeks after EMDR therapy. A significant reduction in PCL-C scores was found between baseline ($M = 52.4$) and immediately after ($M = 15.1$) and 2 weeks after EMDR therapy ($M = 14.9$), $F(2152) = 287.22$, $p < 0.001$. There was no significant effect for race or gender. Similarly, a significant reduction in PCL-C scores was detected from baseline ($M = 53.2$) to immediately after ($M = 15.2$), 2 weeks after ($M = 14.3$), and 4 weeks after ($M = 12.8$) EMDR therapy, $F(3180) = 349.00$, $p < 0.001$. Again, no significant effect for race or gender was found, see Table 1.

IES-R data were collected prior to each EMDR therapy session. A significant difference in IES-R scores was found between EMDR Session 1 ($M = 56.4$) and Session 2 ($M = 49.7$), $t(112) = 6.10$, $p < 0.001$ ($d = 0.574$). A significant difference was also observed when comparing IES-R scores for EMDR Session 1 ($M = 56.0$), Session 2 ($M = 48.9$), and Session 3 ($M = 39.2$), $F(2,210) = 60.20$, $p < 0.001$. Comparison of IES-R scores for Sessions 1–9 also yielded a significant difference, $F(8,48) = 9.85$, $p < 0.001$. For this final analysis, mean IES-R scores ranged from 62.0 for Session 1 to 16.0 for Session 9, see Table 2.

DISCUSSION

The PCL-C scores between baseline and post-therapy assessments reflected a significant reduction in symptoms. There was no significant difference in PLC-C scores between Black and White participants

TABLE 2 Means and one-way analyses of variance of Impact of Events Scale-Revised (IES-R) scores across different time points.

	Session 1 (M)	Session 2 (M)	Session 3 (M)	<i>F</i> (2210)	<i>p</i> -Value
IES-R scores	56.0	48.9	39.2	60.20	<.001

or between those participants who identified themselves as male or female. No studies in our literature review explicitly compared the effect of EMDR therapy on gender and race. Although the result of this study is encouraging regarding the effectiveness of EMDR across different demographics, future EMDR research focused on gender and race, including non-binary gender identification and all races, may be worthwhile.

This study used EMDR therapy to resolve traumatic stresses and remission from SUD in incarcerated populations. Traumatic stresses and SUD are common occurrences in incarcerated patients (Belet et al., 2020; Ehlers et al., 2000; Heckman et al., 2007; Pietrzak et al., 2011). There is a dearth of empirical research on EMDR and recidivism primarily due to a lack of research funding and the transient nature of the population (Hanser et al., 2017). According to Hanser et al. (2017), recidivism can be reduced in incarcerated populations who have received EMDR therapy, but more data are needed.

The mean 4-week post-EMDR PCL-C score of 12.8 was a significant improvement over the mean pre-EMDR PCL-C score of 53.2 and was reflected in the readily observable reduction in symptoms of residents who received EMDR treatment. The number of sessions varied with residents due to the severity of the symptoms. Facility staff reported a significant reduction in sanctions for infractions and other unruly behaviors for residents who received EMDR therapy. The facility trained and educated all staff during this EMDR research project to help with referring inmates for EMDR treatment, and during the treatment, they were instructed to look for counterproductive behaviors to minimize any premature exit from the program.

EMDR therapy is culturally sensitive, empowering, and supportive, and it offers psychological and physical safety during treatment Brown et al. (2015). The improvements in the two assessment measures (PCL-C and IES-R) over multiple time periods in the present study are a validation of how effective EMDR therapy can be for PTSD when working with incarcerated populations. This study would have been strengthened with the inclusion of a control group that did not receive EMDR therapy. Because the study's subject pool was an incarcerated population, we were unable to collect data from a group that was not receiving treatment. However, our findings in this one-group pre-posttest study were validated by the continued improvement in measures collected at several time intervals post-EMDR intervention.

In conclusion, this study validates EMDR therapy's effectiveness in reducing post-traumatic symptoms in incarcerated populations. The study also found that EMDR therapy is equally successful across genders and races, suggesting that it could be a viable treatment option for a diverse population of incarcerated people. Although these findings are encouraging, more research on EMDR therapy is required that critically evaluates gender and racial differences in response to EMDR. Furthermore, more research is needed to assess the effect of EMDR therapy on recidivism in jailed populations. The current study did not directly quantify recidivism, but it is hoped that future research would investigate this subject. Other criteria, such as the type of offense, length of incarceration, and frequency of incarceration, need to be investigated further to provide a more complete picture of the use of EMDR therapy in this situation.

Limitations

The significantly small sample size is one of the study's key limitations. Furthermore, the absence of a control group makes it difficult to rule out other potential factors that could have influenced the

results. To examine changes in symptoms, the study relied on self-reported assessments such as the PCL-C and IES-R. Self-report measures are susceptible to social desirability bias and may not always accurately reflect participants' experiences. Finally, the study did not directly evaluate or quantify recidivism, nor did it go into the specific kinds or origins of trauma that participants encountered.

Implications for practice

Counselors who work with incarcerated individuals may want to consider about using EMDR as a therapeutic option for trauma-related issues that affect individuals of all racial and gender identities. Counselors should give trauma-informed treatment first priority when working with people who are incarcerated as EMDR therapy has been shown to be effective in reducing symptoms connected to trauma. Inmates who might benefit from EMDR therapy can be identified and referred by staff, and in a similar way, counselors and mental health specialists can work with correctional officials to make sure that clients receive appropriate therapeutic alternatives. We recognize the need for more investigation into the long-term effects of EMDR therapy on recidivism rates, accounting for elements including the nature of the offense, the length of incarceration, and the frequency of incarceration.

CONCLUSION

Overall, this study provides important insights into the effectiveness of EMDR therapy in reducing trauma-related symptoms in jailed populations and highlights the need for additional research in this field.

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