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# JOURNAL OF EMDR PRACTICE AND RESEARCH

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# Standard EMDR Protocol for Alcohol and Substance Dependence Comorbid With Posttraumatic Stress Disorder: Four Cases With 12-Month Follow-Up

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This report begins with a summary of the literature regarding the theoretical models behind the comorbid relationship between posttraumatic stress disorder and substance use disorders and the various modified addiction protocols formulated to assist in treating these disorders. This case series outlines the effect that the standard eye movement desensitization and reprocessing (EMDR) protocol had on alcohol and substance dependence for 4 patients who attended our Post Traumatic Stress Clinic in Fremantle, Western Australia, primarily for treatment for posttraumatic stress disorder. Patients were assessed for substance use disorders using the Mini International Neuropsychiatric Interview Plus prior to, immediately after, and 12 months after completing EMDR therapy. Results indicate that the standard EMDR protocol was successful in reducing alcohol and substance use. Prior to treatment, 3 patients met criteria for alcohol dependence and 1 met criteria for substance dependence. At 12-month follow-up, 3 out of 4 clients did not meet the diagnostic criteria for current alcohol dependence or current substance dependence. The implications of these findings are discussed with reference to theories of comorbid posttraumatic stress disorder and substance use disorder and the modified EMDR protocols developed for patients with substance dependence.

**Keywords:** eye movement desensitization and reprocessing (EMDR); standard EMDR protocol; modified EMDR protocol; substance use disorders; posttraumatic stress disorder

**P**osttraumatic stress disorder (PTSD) is a severe life-disrupting disorder that may develop as a consequence of exposure to one or more traumatic events. It is characterized by a constellation of reexperiencing, hyperarousal, and avoidance symptoms, and negative alterations in cognitions and mood (American Psychiatric Association, 2013). PTSD can have a detrimental effect on quality of life and the ability to sustain meaningful relationships and employment (American Psychiatric Association, 2013).

It is well established that individuals with PTSD have increased rates of substance use disorders (SUDs; Brady & Sinha, 2005). The exact prevalence rates reported vary considerably ranging from 11% to 41%. (Harrington & Newman, 2007; van Dam, Ehring, Vedel, & Emmelkamp, 2010). Kessler, Sonnega,

Bromet, Hughes, and Nelson (1995) found that men with PTSD were twice as likely as those without PTSD to have alcohol abuse or dependence and almost 3 times as likely to have a drug use disorder. In addition, women with PTSD were 2.5 times more likely than those without PTSD to have an alcohol disorder and greater than 4 times more likely to be diagnosed with a drug use disorder.

The comorbid relationship between PTSD and SUD has been a topic of conjecture and debate for many years with many questioning what develops first, the PTSD or the SUD. Of course, this differs for each individual with each presenting with his or her unique trauma, history, and coping mechanisms. To help gain a greater understanding of the complicated relationship between PTSD and SUD, several theoretical models have been developed.

## Theoretical Models for Comorbid Posttraumatic Stress Disorder and Substance Use Disorder

The self-medication hypothesis stipulates that PTSD is the first to develop, thus is the primary diagnosis, and chemical substances are used to alleviate or provide relief from the associated symptoms and distress (Cash, 2006). The dual diagnosis literature suggests that the particular types of substances used by PTSD sufferers varies greatly and may be dependent on the cluster of PTSD symptoms most prevalent and debilitating for the individual—for example, for those experiencing predominantly avoidance symptoms central nervous system stimulants may be used to boost socialization and motivation, whereas those experiencing hyperarousal symptoms may choose sedatives as their preferred option (Hien et al., 2010; Saladin, Brady, Dansky, & Kilpatrick, 1995).

The high-risk hypothesis suggests that those individuals who use alcohol and chemical substances live lives that are riskier and as a consequence have a higher frequency contact with traumatic situations or stress (Cash, 2006; Jacobsen, Southwick, & Kosten, 2001).

The susceptibility hypothesis, however, postulates that using drugs and/or alcohol leads to an individual being at higher risk of developing PTSD when exposed to a traumatic event because of the psychological and physical effects of substance abuse (Riggs & Foa, 2008). It has been suggested that alcohol and substance use interferes with the normal recovery process inhibiting the processing and habituation of traumatic material (Brady & Sinha, 2005).

PTSD and SUD are high-burden illnesses with long-term negative impacts on the individual's biopsychosocial functioning and well-being (Perez-Dandieu & Tapia, 2014). As such, treatment for both illnesses is often complicated with the path to recovery being laden with multifaceted challenges and obstacles.

## Eye Movement Desensitization and Reprocessing

Eye movement desensitization and reprocessing (EMDR) is an internationally recognized first-line treatment for PTSD (American Psychiatric Association, 2013; Oren & Solomon, 2012). EMDR allows a trapped and isolated episodic trauma memory network to be released, desensitized, processed, and resolved. EMDR's eight-phase treatment protocol is guided by Shapiro's adaptive information processing (AIP) model which suggests that all human beings possess the innate ability to naturally integrate and assimilate many aspects of an experience (Shapiro, 2001).

In PTSD, however, the information processing system is thought to become imbalanced, thus impeding the integration of the experience into semantic memory. As a result, the traumatic memory remains vivid and distorted. EMDR treatment is believed to reactivate the natural information processing through bilateral stimulation (BLS; Shapiro & Maxfield, 2002). EMDR involves the trauma survivor connecting with all elements of the memory network—sensory, cognitive, somatic, and emotional while engaging in BLS and maintaining dual attention (Shapiro, 2001). At the completion of EMDR, the trauma survivor has a reduction or cessation of the typical PTSD symptoms, and the unpleasant emotional charge and accompanying negative somatic sensations are removed. The trauma image that was once vivid now appears foggy or distant with the trauma memory being perceived and felt as a historical rather than current event. This “recalibration” of the brain and body causes a reduction or cessation in typical PTSD symptoms, removing the persistent sense of danger the trauma survivor experiences allowing for an improvement in overall functioning (Shapiro, 1995).

## EMDR Modified Protocols for Addiction

As the recognition of the prevalence of co-occurring SUDs with PTSD has grown, there has been a push to expand or modify existing treatments to enable better recovery outcomes for this patient cohort.

For instance, Hase, Schallmayer, and Sack (2008) developed the Craving Extinguished (CravEx) protocol that focuses on the concept of addiction memory (AM), those memories of intense craving or drug consumption relapse. The AM, being an obsessive-compulsive craving and episodic memory, qualifies as a maladaptive memory according to the AIP model. CravEx uses Level of Urge (LOU) in place of Subjective Units of Disturbance Scale (SUDS) and believes this EMDR strategy will enable the craving to reduce/vanish during EMDR processing of AM in some patients (Hase, 2010). Hase et al. (2008) randomized control study had 34 chronic alcohol-dependent clients randomly assigned to two treatments—treatment as usual (TAU) or TAU + EMDR. Results indicated that those assigned to the TAU + EMDR group showed a significant reduction in craving posttreatment and 1 month after treatment with five maintaining sobriety in the TAU + EMDR compared to zero in TAU group.

Meanwhile, Popky's (2005) DeTUR—desensitization of triggers and urge reprocessing protocol—has its foundation in the AIP model and uses BLS to uncover and process base traumas or core issues that are the

underlying cause behind addiction. DeTUR is a trauma-based protocol combining the clients internal resources with external supports including 12-step model, cognitive behavioral therapy (CBT), and thought field therapy (TFT; Popky, 2010).

Omaha (1998) developed Chemotion, a treatment protocol for chemical dependency that employs a Gestalt dialogue technique to identify object relation deficits that can then be used to create targets for EMDR processing. Although there are no published studies that specifically investigate the Chemotion and DeTUR protocols, Abel and O'Brien (2010) report on the case of a woman who remained abstinent for 2 years following treatment that used a combination of protocols developed by Popky (2005) and Hase et al. (2008).

Robert Miller's Feeling-State Addiction Protocol (FSAP), however, differs somewhat from the approaches outlined earlier. Its foundations lie in the Miller's feeling-state theory of behavioral and substance addiction that postulates addictions are created when positive feelings (sensation + emotion + cognition) become rigidly linked with specific objects or behaviors. This linkage between the feeling and the behavior is a feeling state, and it is the feeling state that is understood to drive the urges and cravings associated with both the substance and behavioral addiction (R. Miller, 2010). In short, FSAP combines feeling-state theory of behavioral and substance addiction with a modified form of EMDR. The difference between FSAP and other approaches is that abstinence is neither necessary nor desired. Instead, FSAP requires the positive feelings associated with substance/alcohol use are experienced as intensely as possible during processing thus allowing for the successful elimination of the feeling state, thus eradicating the previously "resistant to change" negative cognitions that were used to justify the compulsive/addictive behaviors (R. Miller, 2012). According to R. Miller (2010), the most important modification of the EMDR protocol is the approach used in the processing of the negative beliefs and the installation of positive beliefs—for instance, once the feeling state associated with the addictive behavior have been processed, the negative beliefs underlying the feeling state are determined, and the desired positive beliefs are chosen.

## EMDR Standard Procedures for Addiction

There are no published studies indicating the effect of the standard EMDR procedures alone on alcohol or SUDs with patients who receive treatment for their PTSD symptoms. What has been documented

is the use of modified protocols such as CravEx (Hase, 2010), DeTUR (Popky, 2005), and Chemotion (Omaha, 1998) specifically implemented for those with a dual diagnosis of PTSD and SUD.

Several authors suggest several components of EMDR such as safe place, resource development and installation, and two-hand interweave can be integrated into addiction treatment at different phases (Zweben & Yeary, 2006). Other authors believe standard EMDR can be part of a comprehensive treatment plan when used in conjunction with the 12-step program (Marich, 2009).

Furthermore, Marich's (2009) study of a cross-addicted female outlines the benefits of using EMDR in the continuing care process following the successful completion of an 8-week outpatient program (a 12-step facilitation model). Fifteen standard EMDR sessions were conducted over 9 months, including five future templates. Following EMDR, the participant reported 18 months of sobriety and an overall improvement in her functioning and well-being (Marich, 2009).

## Cognitive Behavioral Therapies for Posttraumatic Stress Disorder and Substance Use Disorder

### Nonexposure Integrated Treatments

Nonexposure integrated treatments involve a present-focused approach, hence do not revisit traumatic memories (imaginal exposure) or confront safe but anxiety-provoking situations in real life that are avoided by the patient (McCauley, Killeen, Gros, Brady, & Back, 2012). Rather, treatment focuses on the client's responses to trauma and the impact of trauma symptoms on functioning and well-being. Specifically, treatment includes emphasizing stabilization, enhancing coping skills to prevent substance use and manage PTSD symptoms, cognitive restructuring with attention to maladaptive thoughts linked to substance use and trauma symptoms, psychoeducation on PTSD and SUDs, and developing effective communication skills to build healthy support networks (Hien et al., 2010). An example of a nonexposure integrated treatment is Seeking Safety, the most rigorously studied treatment thus far for PTSD and SUD and which generates positive outcomes on PTSD and SUDs across studies generally (Najavits & Hien, 2013). Addictions and Trauma Recovery Integrated Model (ATRIUM; D. Miller & Guidry, 2001), Trauma Adaptive Recovery Group Education and Therapy (TARGET; Frisman, Ford, Hsui-Ju, Mallon, & Chang, 2008), and Trauma Recovery and Empowerment Model (TREM; Harris, 1998) are additional examples; however, limited empirical support

exists regarding the efficacy of these protocols in producing sustained improvements with respect to PTSD and SUD.

### Exposure Integrated Programs

Concurrent treatment of PTSD and SUD using prolonged exposure (COPE) is the first treatment to combine evidence-based CBT for SUDs with the key components of prolonged exposure for PTSD, which includes imaginal and in vivo exposure. Brady, Dansky, Back, Foa, and Carroll (2001) used COPE in an uncontrolled psychotherapy development study, whereby 39 clients presenting with comorbid PTSD and SUD received 16 individual therapy sessions incorporating in vivo (Sessions 6–15) and imaginal (Sessions 7–15) exposure. Completers (those who had completed a minimum of 10 sessions) demonstrated significant improvement in PTSD symptoms clusters and a reduction in cocaine use from baseline to end of treatment (Brady et al., 2001).

Similarly, Mills et al. (2012) recently completed a randomized controlled trial of modified COPE (13 individual 90-minute sessions delivered by a clinical psychologist) plus TAU versus TAU alone (TAU = participants accessing any type of substance use treatment available in the community, including inpatient, outpatient, residential services, and pharmacological interventions). The study involved 103 participants with civilian PTSD and SUD, and results indicate from baseline to 9-month follow-up the COPE treatment group demonstrated improvements in PTSD symptom severity without an increase in severity of substance dependence.

Of course, exposure integrated treatments are not limited to COPE. Substance Dependence Posttraumatic Stress Disorder Therapy (SDPT) was developed by Triffleman and colleagues (Triffleman, 2000; Triffleman, Carroll, & Kellogg, 1999) and delivered as a 5-month intervention with twice-weekly sessions. SDPT is a two-phased approach that includes integration of CBT for SUD with in vivo exposure for PTSD. Research regarding the effectiveness of this therapy, however, is limited.

In this article, we present data collected from four outpatients who attended our Post Traumatic Stress (PTS) Clinic in Fremantle, Western Australia, primarily for EMDR treatment following a diagnosis of PTSD. More important, our article highlights the effect that Shapiro's standard EMDR protocol (Shapiro, 1995) has on alcohol and substance dependence immediately posttherapy and at 12-month follow-up in this series of patients.

### Method

The study was conducted at the PTS Clinic, Fremantle Hospital, a research clinic located at a major government hospital in an urban setting. The PTS Clinic commenced operation in 2009, was funded by the University of Western Australia, and was staffed by one part-time psychiatrist and one part-time nurse both of whom had been formally trained in EMDR.

### Participants

Participants were referred to the PTS clinic via mental health teams, local general practitioners, medical teams, and community support services.

Participants were assessed using validated screening tools (see "Diagnostic and Screening Measures" section) coupled with a comprehensive clinical interview.

The inclusion criteria for admission to and treatment at the clinic were a diagnosis of PTSD via clinical assessment, a score of higher than 44 on the PTSD checklist (civilian version [PCL-C]; Blanchard, Jones-Alexander, Buckley, & Forneris, 1996), appropriate affect stability and distress tolerance skills assessed by the client's presentation during the clinical interview, their history, and supported by a score lower than 30 on the Dissociative Experience Scale (DES; Bernstein & Putnam, 1986).

Patients were excluded from participating in treatment if they had a primary diagnosis of significant organic brain disease, psychotic disorder, or active suicidality.

Prior to treatment, patient gave informed consent and received additional information about EMDR. Nonessential details have been altered in this report to protect the participants' anonymity.

Of 31 patients referred, 13 did not meet criteria for treatment at the clinic. Of the 18 patients accepted for treatment, 4 met the criteria for PTSD and SUD. Of those four, three participants (Cases 2, 3, and 4) and one participant (Case 1) met the diagnostic criteria for alcohol dependence (current) and substance (marijuana) dependence (current), respectively. All four patients engaged in treatment, completed treatment (hence, no drop outs), and attended for 12-month follow-up.

The participants' histories indicated an increase in alcohol consumption (Cases 2, 3, and 4) and substance use (Case 1) following their traumatic event. Participants had not sought or received any prior treatment for their alcohol or substance dependence and were not referred to nor actively engaged with alcohol and drug rehabilitation services while receiving therapy at the PTS Clinic. Prior to commencing

EMDR therapy, participants were educated regarding the negative impact that ongoing alcohol and substance use could have on their mental and physical well-being as well as their ability to effectively and efficiently process traumatic material during and after an EMDR session.

All participants reported no previous exposure to EMDR therapy. Case 1 had completed 12 sessions of “talk therapy” with a counselor immediately following his workplace trauma. All participants did not engage in concomitant psychotherapy while receiving EMDR.

Three of the four participants were taking psychotropic medications, prescribed and managed by their referring service or clinician.

Treatment was primarily for trauma occurring in adulthood in all four cases; however, two of these also had histories of childhood traumas. Three clients experienced their traumas in the course of their work, one as a police officer (Case 4), one as a fireman (Case 3), and one as a prison guard (Case 2). Case 1 experienced his trauma while engaging in a water-based recreation activity.

Once the assessment was completed, patients commenced therapy without being wait-listed. Both the psychiatrist and nurse conducted EMDR therapy as per the standard protocol, and both are formally trained in EMDR by accredited trainers. EMDR therapy focused solely on the participants’ PTSD and trauma history, not on the participants’ alcohol or substance dependence.

There were no restrictions on the number of therapy sessions allowed. The total number of EMDR sessions required for each patient ranged from 4 to 9. The mean number of EMDR sessions required was 6.

## Diagnostic and Screening Measures

**Primary Outcome Measures.** The Mini International Neuropsychiatric Interview (MINI) Plus (Sheehan et al., 1997), a structured diagnostic interview, was used to assess for alcohol and substance dependence (past 12 months and lifetime) and alcohol and substance abuse (past 12 months and lifetime). For the purpose of this article and to highlight the positive effect EMDR has on reducing alcohol and substance use, data presented will focus on current (past 12 months) alcohol and substance dependence and abuse.

When completing the MINI Plus, the therapist asks a series of questions relating to each *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000) disorder. For a diagnosis of alcohol and substance dependence, the client must answer “yes” to three or

more questions. Examples of a screening question for alcohol dependence includes “In the past 12 months, did you need to drink more in order to get the same effect that you got when you first started drinking?” (Sheehan et al., 1997).

Use of the MINI Plus reflected our aim to screen broadly for comorbid conditions because the MINI Plus is designed to assess and diagnose 23 psychiatric disorders. It is a highly sensitive and specific screening tool adaptable to many clinical and research settings, with excellent reliability and validity (Lecrubier, Sheehan, & Weiller, 1997).

On initial assessment, three participants (Cases 2, 3, and 4) met the *DSM-IV* diagnosis for current alcohol dependence, and one participant (Case 1) met the *DSM-IV* diagnosis for current substance dependence.

Participants were assessed again following treatment with EMDR and 12 months following the end of treatment.

The PCL-C is a brief self-report instrument used to assess the reexperiencing, avoidance, and hyperarousal symptoms of PTSD (Blanchard et al., 1996). It is widely used in the clinical setting for tracking symptoms and as a diagnostic tool in research studies. Because the PCL-C does not allow for investigators to confirm that the traumatic event met the Criteria A component of the *DSM-IV* PTSD diagnosis, it is more useful when followed by a second-tier diagnostic test (such as the MINI Plus; McDonald & Calhoun, 2010). On initial assessment, three of the four participants scored above the threshold of 44 for PTSD diagnosis with a mean score of 55.25.

**Screening Tool for EMDR Suitability.** The DES was developed by Bernstein and Putnam (1986) as a self-report measure (consisting of 28 items) to assess the degree to which people experience dissociation. Van Ijzendoorn and Schuengel (1996) suggest the DES demonstrates impressive predictive validity, in particular, concerning dissociative disorder and traumatic experiences. In addition, Carlson et al. (1993) found the DES a reliable and valid instrument to measure dissociation in many groups and to have good concurrent validity for detecting severe dissociative disorders. The DES was administered during the assessment phase only because it was used to identify those at risk of dissociation and who would not be suitable for EMDR.

## Procedure

Each participant received a weekly session of EMDR as per Shapiro’s standard eight-phase protocol (Shapiro, 1995). The focus of EMDR was resolving the client’s

specific trauma memories; hence, there was no adaptation or modification of the EMDR process nor were addiction memories the target at any stage during therapy. Guided by the AIP model, BLS was used to release, process, and desensitize dysfunctionally stored traumatic material. The client maintained dual attention while connecting with and then integrating the cognitive, somatic, and emotional components of the trauma memory.

## Case Presentations

### Case 1

**Presentation.** WC is a 28-year-old White male, self-employed electrician, living with his de facto partner of 9 years.

He was referred to the PTS Clinic by his treating physician at the hyperbaric unit where he had been receiving hyperbaric treatment for physical complications (poor gait and balance, bowel, and bladder retention) secondary to a scuba diving accident that had occurred 4 months previously. Although now physically recovered, he was experiencing symptoms suggestive of PTSD. He was referred for confirmation of diagnosis and to determine suitability for EMDR therapy.

**Client History.** WC described himself as a competent scuba diver with 10 years of experience including working as a scuba diving instructor for a tourist company. He reports on the day of the accident he had not been keen to dive but believed it would be stress relieving given the recent increased workload and pressure at work. WC had borrowed his brother-in-law's equipment, his own needing repair, and was unfamiliar with the aluminium scuba tank, his being made of steel. He describes diving alone, ignoring the recommended and usual safety guidelines of diving alongside a buddy. He recalls losing his weight belt and as a consequence experiencing a rapid ascent, particularly the last 5 m, to the water's surface. He describes the fear as numbness and loss of feeling spread to his upper and lower extremities. He was unable to signal for help or activate the buoyancy device. He remembers the weight of the scuba tank turning him to the lateral position and his mouth filling with salt water. At this point, he thought he was "going to die." Seen by fellow divers, he was eventually pulled from the water, but because of altered and loss of consciousness, he only remembers fragments of the 45-minute boat ride to land and the emergency department. At time of assessment, WC describes being troubled by disturbing images and memories of the diving accident, dreams

and nightmares (of the diving accident itself as well as sharks, predators of the ocean), anger outbursts, and becoming fearful of others intentions. Since the scuba diving accident, WC had increased his marijuana use, smoking "a joint" usually alone, three to four times a week; this increased from infrequent social use. He believed marijuana "helped take the edge off . . . makes me calmer." He additionally reported past traumatic events including one episode of childhood sexual abuse (CSA) and bullying at primary school. He had not received any previous treatment for his PTSD symptoms or increased marijuana use.

**Initial Assessments.** MINI Plus indicated WC met the criteria for PTSD and substance dependence (current). His PCL-C score was 46/85.

**Treatment.** The initial plan was for WC to receive EMDR on a weekly basis, but his workload resulted in fortnightly appointments, with WC requiring five EMDR therapy sessions. He identified his treatment goals as being "learning to cope with my emotions better following diving accident. Have a better understanding of what's happening inside my brain."

#### *EMDR Session 1.*

Target image: "Lying on top of the water, tasting the salt water"

Negative cognition: "It is my fault"

Positive cognition: "I am lucky to be alive," validity of cognition (VoC) = 3/7

Emotion: fear and anger, SUDS = 6/10, "cold shiver through my body"

BLS was commenced using TheraTappers and images relating to the emergency department, his hospital admission, and the decompression chamber emerged. His SUDS had reduced to 4/10.

WC was instructed to return to the target image, and further BLS allowed the scuba diving accident itself to successfully processed, with a new positive cognition "I am stronger now . . . I got through okay" spontaneously emerging, and installed to a VoC of 7/7. A body scan at the end of session indicated no resistance to this belief, SUDS were 1/10, and WC left the session in a calm manner.

**EMDR Sessions 2 and 3.** EMDR Session 2 focused again on the scuba diving accident as a review of the target image resulted in SUDS of 3/10. The target image was modified slightly and concentrated on WC's rapid ascent coupled with the "I am incompetent . . . I could have died . . . it is my fault." He felt anger, located in his stomach, SUDS now 6/10. BLS using TheraTapper shifted the SUDS to 3/10. Cognitive interweaves regarding responsibility "How

were you to know the weight belt would come loose and be lost? . . . would you think your sister was to blame if this happened to her?” were used to further reduce SUDS. Positive cognition “It is definitely not my fault . . . I survived” was installed to a VoC of 7/7.

EMDR Session 3 targeted the episode of CSA, WC being 13 years old and his uncle the perpetrator. EMDR Sessions 4 and 5 targeted WC’s current self-esteem issues and childhood bullying feeder memories. Future template was also used during Session 5 with WC imagining a future experience confronting a difficult customer where he may have felt bullied. WC experienced a mild disturbance only, and with reprocessing, positive interactions and experiences emerged. A review of all target images and trauma memories indicated they now appeared distant and foggy with no accompanying negative beliefs or emotional charge.

WC’s substance dependence (past, present, or future) was not targeted during any of the EMDR sessions. No issues of increased substance use arose during EMDR therapy.

*Follow-up.* WC was followed up 2 weeks after completing EMDR therapy and then at 6 months and 12 months post-EMDR. WC was aware he could contact the PTS Clinic any time should the need arise. He reported he “was free from all PTSD symptoms.” He had proposed to his de facto partner and was coping better with his customers and staff at work. Although unable to return to scuba diving because of medical reasons, he spent the weekends surfing and did not experience any associated triggers. He had only used marijuana once in a social situation since completing EMDR therapy. He no longer craved marijuana nor needed it to reduce his anxiety. The MINI Plus supported the aforementioned indicating WC no longer met the criteria for PTSD or substance dependence current. He scored 17/85 on the PCL-C (higher than 44 suggesting diagnosis of PTSD).

## Case 2

**Presentation.** LK is a 37-year-old divorced White mother of two daughters: a 5-year-old and a 16-year-old. She is employed full-time as a juvenile corrections officer however at time of referral had been on sick leave for 2 weeks. She has been in a supportive relationship with her partner Tom for 5 months.

LK was referred to the PTS Clinic by the duty officer at the local authorized mental health hospital following LK’s crisis presentation to the emergency department where she presented for treatment of a superficial laceration to her left wrist and reporting

difficulty coping secondary to traumatic events that had occurred during her childhood and adult years.

**Client History.** LK reported several traumatic incidences, the earliest and worst, being sexually abused by her maternal grandfather from the age of 6–12 years. She additionally reported being molested by a male stranger when she 12 years old, witnessing multiple episodes of domestic violence between her mother and father as well as being a victim of domestic violence herself in her first marriage. Her latest trauma occurred 2 years previously and over a 2-month period where she was stalked and repeatedly threatened by ex-inmates at the juvenile corrections facility where she worked. LK reported the ex-inmates had gained access to her personal details that resulted in a number of them and their family members breaking and entering LK’s home late at night threatening to rape and kill her and her two daughters. This had prompted LK to seek a violent restraining order. LK reported she had not experienced any PTSD symptoms prior to the latest trauma despite her previous trauma history. Her current symptoms included intrusive memories and nightmares regarding the CSA and the break and enter. She had difficulty falling and staying asleep. She was hypervigilant. On average, she had been consuming half a bottle of wine per night for the last 3 months with quantities even higher for the 12 months previously. She had reduced her alcohol consumption because she was aware of the negative effect this was having on her mood and her relationship with her daughters. She had sought the help of friends to provide additional emotional support during this time. She had not sought any formal treatment for her current alcohol use or PTSD symptoms.

**Initial Assessments.** MINI Plus indicated LK met the criteria for PTSD and alcohol dependence (current). Her score on the PCL-C was 71/85.

**Treatment.** Treatment goal: “To feel happier day to day, to be rid of bad dreams, sleep better, get rid of flashbacks and nightmares.”

LK’s first EMDR session focused on the horrific home invasion, the target image being a close-up of one of the male intruder’s face, his snarl, and angry facial expression. “I am in danger” was automatically verbalized as the negative cognition, fear was located in LK’s chest and throat, and her SUDS scored as 9/10. “I am safe” was LK’s positive cognition; however, it achieved a 2/7 for VoC. BLS was commenced using TheraTappers with LK’s emotional and physical arousal reducing throughout the session. Her SUDS reduced to 1/10 and as she stated, “They can’t reach me now . . . I am safe” (VoC = 7/7). A body scan



indicated no resistance to this belief and no residual physical discomfort.

Session 2 began with a review of the home invasion, and LK indicated the target image now appeared foggy and “the whole thing doesn’t seem to bother me at all anymore.” As per Shapiro’s standard EMDR, and after discussing at length with LK, it was decided the earliest and worst traumatic memory would be targeted during this session of EMDR. LK reported the image that could best represent the worst memory of CSA was when she was 8 years old and alone with her grandfather in his bathroom. Her negative cognition “I am bad” was accompanied by emotions of fear and shame, which she felt “all over” with a SUDS of “10/10.” Her positive cognition “I was just a kid” held a VoC of 2/7 only.

The therapist commenced BLS using TheraTappers and after two sets observed LK becoming blank and distant. The therapist coached LK back to present using grounding techniques and slow breathing exercises. LK was guided to her safe place and after 5 minutes felt she was “back to her usual self.” LK was keen to recommence EMDR. To avoid the reoccurrence of the aforementioned, the therapist spent time installing resource figures and altered the target image so it would appear as a black and white snapshot. LK successfully processed the said target and other related images and memories of CSA. Her SUDS reduced steadily ending the session with SUDS of 1 and a VoC for her positive cognition of 7/7.

LK attended for weekly EMDR therapy needing four sessions in total. As well as targeting the CSA and break and enter, she targeted the anger she presently held for her mother for “not protecting me from the abuse.” After processing, the positive cognition of “It’s not her fault . . . she did the best she could” spontaneously emerged. Last, future template work was completed targeting the anticipatory anxiety she was experiencing relating to returning to her usual work duties and passing an ex-inmate on the street.

Each week, the therapist returned to the target image previously processed, and each time, LK reported the image was distant and foggy with nil emotional charge. She reported a reduction in her PTSD symptoms and an improvement in her overall functioning. She reported she no longer needed alcohol to dampen her symptoms, and as such, the quantity of alcohol she consumed reduced drastically. Her alcohol dependence had not been targeted during any of the EMDR sessions.

**Follow-Up.** Although LK required only four sessions of EMDR therapy, she was followed up 2 weeks

after completing therapy and then at 6 months and 12 months post-EMDR. She was aware she could contact the PTS Clinic at any time should she require further support or therapy.

Her 12-month follow-up indicated she had maintained improvement with nil return of her PTSD symptoms. She reported she no longer craved alcohol or had consumed alcohol in isolation since treatment. She reported the consumption of alcohol in social situations, on average once a fortnight with one to two standard drinks being consumed, with no episodes of binge drinking or intoxication. She had returned to her usual work duties. Clinical interview combined with results of the MINI Plus and PCL-C (21/85) indicated she no longer met the criteria for current alcohol dependence or PTSD, respectively.

### Case 3

**Presentation.** RC is a 47-year-old married Australian father of two teenage children. He resides in his family suburban home with his wife of 27 years. His private psychiatrist, for a confirmation diagnosis of PTSD and for assessment to determine his suitability for EMDR therapy, referred him to the PTS Clinic. RC had been on worker’s compensation for 4 months unable to fill his long-term posting with the police helicopter rescue unit.

**Client History.** RC reports he had been exposed to multiple traumas in the course of his work as a policeman particularly since taking a position with the police helicopter rescue unit in 1991. The “standout” distressing events included the retrieval of four deceased bodies at sea and himself the victim of a helicopter crash while doing a routine visit to a primary school for education purposes. The most distressing incident of all had occurred 14 years previously and was the recovery of the bodies of four fellow policemen (“They were my mates”), who had also worked in the police helicopter rescue unit and who had died as their helicopter crashed into the side of a cliff. RC reported his PTSD symptoms started a month after this event. He had received 12 sessions of “talk therapy” organized through his employer. He reports little benefit from same. He did not divulge to his colleagues or family his experience of PTSD symptoms. His PTSD symptoms became increasing worse. He made excuses and avoided certain activities in the workplace. He started drinking alcohol to combat his anxiety, aid his sleep, and stop the reexperiencing symptoms. At time of assessment, he was drinking alcohol 5 days per week, commencing at 3 p.m. and consuming, on average, one bottle of red wine (750 ml), four “stubbies”

(four × 375 ml bottles of beer), and two “shots” of bourbon. He drank alone in his shed but reported he would prioritize his parental/family and home duties over his drinking. He routinely kept Mondays and Tuesdays as alcohol-free days because of a coaching commitment and his son’s sporting activities. He had not sought any treatment, intervention, or therapy for his alcohol dependence either currently or in the past. He was not keen on being referred to alcohol detoxification or rehabilitation services.

**Initial Assessments.** MINI Plus indicated RC met the criteria for PTSD and alcohol dependence (current). His PCL-C score was 42/85.

**Treatment.** RC received six EMDR sessions. The first session targeted the most emotionally charged memory—retrieving and identifying the scattered body parts of his colleagues who had died in a helicopter crash. Despite several attempts and a lengthy exploration, RC had difficulty identifying a negative cognition. He described an overwhelming anxiety that presented as “butterflies in my stomach.” He scored his SUDS as 3/10. The therapist immediately questioned the validity and incongruence of the SUDS—how could overwhelming anxiety be felt at such a minimal level? RC admitted to blocking the accompanying sensation and emotion “a protective mechanism . . . habit from the police force.” To avoid further blocking, the therapist spent time emphasizing to RC the importance of connecting with all elements of the memory network to ensure efficient processing, and hence, resolution of the trauma memory could occur. The therapist encouraged RC to connect with all visual, tactile, auditory, and olfactory components of the trauma image, and this time, RC reported his SUDS as 8/10. BLS, in the form of saccadic eye movements occurred for 50 minutes. Several images from past traumatic work experiences emerged—the retrieval of bodies at sea, RC’s own helicopter crash, and attending domestic disputes. RC’s SUDS reduced to 2/10. Because of time restraints, a safe place exercise was used at the end of session.

Session 2 commenced with a review of the target image addressed in Session 1. RC reported this appeared and felt somewhat distant. He did describe residual anxiety that he rated as 4/10, located in his stomach with a negative cognition of “I am not in control . . . I am weak.” Again, BLS in the form of saccadic eye movements were used, successfully processing the target image, reducing the SUDS to 1/10, and a positive cognition “I will get over this” strengthened from 2/7 to 6/7.

RC attended Session 3 describing an image that had been “troubling me the past week.” He describes a moment during the retrieval of his colleague’s body parts where he and a body bag were being elevated into the helicopter cabin. The body bag had been torn, and a human bone of the deceased had scraped into RC’s leg. During the session, he reported smelling blood and flesh which was making him nauseous and anxious. As a consequence, the therapist used the session to process the said image and accompanying negative cognition “I am unsafe. . . death is around me.” His SUDS score was 9/10, located in his stomach. RC became distressed during the session expressing at one point, “Think I may be sick.” Despite this, he continued to process well, his SUDS reducing steadily, achieving 1/10 and a positive cognition that felt completely true of “I am okay now.”

After three sessions of EMDR, RC reported his anxiety attacks had reduced from six per day to three per day, he experienced less feelings of dread, reported increased social activity including spontaneously going out to restaurants, and a reduction in his reexperiencing symptoms. His urge and desire to consume alcohol had reduced slightly.

Sessions 4 and 5 targeted present triggers—a heavy shopping bag bumped against his leg, triggering a sensation similar to the broken body bag brushing against him; a drive to the beach and the smell of seaweed triggering the smell of dead flesh.

Session 6 addressed his anxiety regarding returning to work, his ability to perform at work, and how he would cope if confronted with similar traumas. The last session was additionally used to review all targets addressed in therapy. RC reported the images now appeared foggy and less vivid that they were “no longer in the forefront of my mind.”

RC’s alcohol dependence was not targeted at any stage during his EMDR therapy.

**Follow-Up.** RC was followed-up by the PTS Clinic 2 weeks after completing therapy and then at 6 months and 12 months post-EMDR. He was aware he could contact the PTS Clinic at any time should he require further support or therapy. RC remained engaged with his referring private psychiatrist.

At 12-month follow-up, despite meeting the criteria for current alcohol dependence on the MINI Plus, RC reports his craving for alcohol and the volume of alcohol consumed has decreased since EMDR therapy. He additionally reports a reduction in the number of drinking days per week (from 5 to 3 days) and no longer combines spirits, wine, and beer when consuming alcohol. He continues to decline the need for referral

to alcohol rehabilitation or detoxification services. He has maintained improvement in his PTSD symptoms achieving a score of 29/85 on the PCL-C (higher than 44 indicative of diagnosis of PTSD). He had not returned to the police force, instead is contemplating a change in career path, specifically purchasing a franchise for a gardening service. He continues to be “happily married” and has started playing veterans water polo.

#### Case 4

**Presentation.** SK is a 53-year-old White male employed full-time as a fire fighter. He has been living with his supportive de facto partner Lisa for 10 years and has two adult children from his first marriage. He was referred to the PTS Clinic by this general practitioner for following worsening of PTSD symptoms that had first appeared 2 years ago, worsening over the last 12 months.

**Client History.** SK reports being exposed to multiple traumas since being employed as a fireman in 1988. Two years ago, he began experiencing PTSD symptoms including flashbacks, intrusive memories, and nightmares regarding the recovery of deceased and often mutilated bodies. The symptoms had increased in intensity and frequency over the last 12 months. SK used alcohol in attempt to reduce the intrusive and hyperarousal symptoms. He had started binge drinking earlier in the year. He had not sought, been referred, or engage in any therapy or treatment for his alcohol use. His employer had referred him to counseling at Crisis Care—he had four sessions in total.

**Initial Assessments.** MINI Plus indicated SK met the criteria for PTSD and alcohol dependence (current). His score on the PCL-C was 62/85.

**Treatment.** SK received six EMDR sessions. His treatment goal were “to stop the thoughts and images from being so intrusive . . . have more control.”

##### *EMDR Session 1.*

Target image: “Attending a motor vehicle accident with a deceased police woman as driver, car wrapped around tree, body crushed, raining, cold and dark, trees rustling, wind blowing, car almost cut in half”  
NC: “I am helpless”

PC: “I did the best I could”; VoC: 2/7

Emotion: “scared,” SUDS 8/10, located in head, hands, and chest area

BLS was commenced using saccadic eye movements and during processing, SK noted that several different images from multiple accidents and tragedies he had

attended over the years were emerging. This was accompanied by a shift in physical sensation (head to shoulders to stomach to back) and changing emotions (fear to anxiety to anger). Toward the end of session, there was a spontaneous change in SK’s perception and beliefs regarding his work as a fireman, “The job’s not that bad . . . we’re helping people . . . achieving something . . . I have a nicer feeling . . . the image is still there a bit but feel okay about it.” His SUDS had reduced to 2/10, but because of time restraints, positive cognition and body scan was not attended to. The therapist finished the session with safe place.

*EMDR Session 2.* This session continued to process the image of the deceased police woman; however, the image had modified somewhat from the following week—it now appeared as a “freeze frame” with SK visualizing a towel over her face. By the end of session, SK’s SUDS had reduced to 1/10, and the positive cognition “I did the best I could . . . mortality is part of my job. . . I have a better acceptance” was installed to full capacity (VoC = 7/7).

*EMDR Sessions 3–5.* These sessions focused on another tragic accident—the death of a teenage boy who had been riding his bicycle and killed by a speeding car driven by two intoxicated youths. Because this was distressing for SK, the therapist asked him to modify the image, viewing it as a sepia photograph and from a distance (bird’s eye view). By the end of these sessions, SK SUDS reduced from 7/10 to 1/10, and the original image appeared foggy and distant.

*EMDR Sessions 6–8.* SK attended the Session 6 reporting all past targets were cloudy with no accompanying negative emotional charge. He reported an increase in drive and motivation, his mood had lifted, and his sleep had improved with no nightmares for the last 2 weeks. He had reduced his alcohol intake with no further bingeing. He was, however, worried about what he may encounter at work in the future and if/how he would cope with similar tragedies. The feeling of dread and accompanying feeder memories became the focus of these EMDR sessions. SUDS reduced from 6/10 to 1/10. Installation of the positive cognition “Even if I get anxious, I can get over it . . . I’ve managed before . . . It’s okay to be anxious at times . . . I am competent . . . I feel stronger” followed reaching a VoC of 6/7.

*EMDR Session 9.* This last session focused on the residual anticipatory anxiety SK was intermittently experiencing regarding attending accidents at work. Future templates involved SK imagining future work experiences and then challenging future work experiences to successfully reduce the remaining apprehension.

SK's alcohol dependence was not targeted at any stage during his EMDR therapy.

**Follow-Up.** SK was followed up by the PTS Clinic 3 weeks after completing therapy and then at 6 months and 12 months post-EMDR. Twelve-month follow-up indicated no evidence of PTSD symptoms. He reported the trauma images remained in altered form with no emotional or physiological disturbance. He was planning an extended holiday with his de facto partner. He reported a complete abstinence of alcohol consumption since completing EMDR therapy with no experience of cravings. His MINI Plus indicated he no longer met the diagnostic criteria for PTSD or alcohol dependence. He scored 18/85 on PCL-C (lower than 4 indicative of PTSD).

## Results

Because it had not been our intention to isolate and treat a cohort of clients with PTSD and SUD, no specific validated alcohol or substance use screening tool was used in the assessment process.

Instead, the MINI Plus scores and participant statements are used to highlight the improvement in alcohol and substance use.

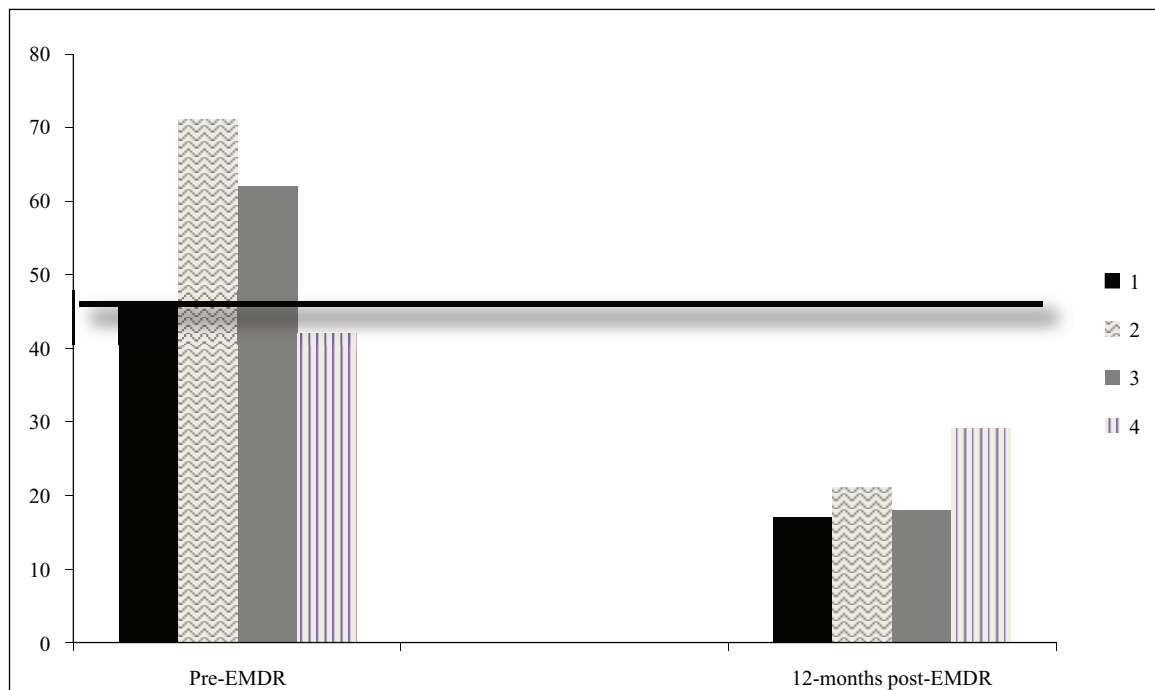
In summary, 12-month post-EMDR assessment indicates one patient met the diagnostic criteria for current alcohol dependence, and no patients met the diagnostic criteria for current substance dependence.

Case 1 reported he had used marijuana once in a social situation since completing treatment. He reported he no longer craved marijuana nor needed it to relieve his anxiety. Case 2 reported she no longer craved alcohol or had consumed alcohol in isolation since treatment. She reported the consumption of alcohol in social situations, on average once a fortnight with one to two standard drinks being consumed, with no episodes of binge drinking or intoxication. Case 3, despite meeting the criteria for current alcohol dependence, reports his craving for alcohol and the volume of alcohol consumed has decreased since treatment. He additionally reports a reduction in the number of drinking days per week (from 5 to 3 days) and no longer combines spirits, wine, and beer when consuming alcohol. Case 4 reported a complete abstinence of alcohol consumption since treatment with no experience of cravings.

There were improvements in participant's PTSD symptoms with the mean PCL-C scores reducing from 55.25 (higher than 44 indicative of a diagnosis of PTSD) on initial assessment to 21.25 on 12-month follow-up (see Figure 1).

## Discussion

EMDR therapy is a well-established first-line psychological treatment for PTSD (American Psychiatric Association, 2013; Bisson et al., 2007).



**FIGURE 1.** PTSD checklist score: pre-EMDR and 12-month follow-up. PTSD = posttraumatic stress disorder.

It is important to note that in our study, improvements in patients' alcohol and substance dependence occurred without modifying the standard EMDR protocol or implementing addiction protocols (Popky's DeTUR protocol [2010], Hase's CravEx protocol [2010], or Omaha's Chemotion [1998] protocol) or Robert Miller's FSAP. In addition, pharmacological interventions for addictions or inpatient/outpatient detoxification were not required.

When reviewing the results alongside the four participants' statements provided at 12-month follow-up, it would be reasonable to suggest the self-medication hypothesis holds significance here. All participants report a positive change in their preferred alcohol and substance use following EMDR therapy and a reduction in their PTSD symptoms. In particular, three participants reported a reduction in cravings, and one participant reported a complete cessation of cravings since completing EMDR. Similarly, one participant reported complete abstinence and three participants reported an overall reduction in the amount of alcohol or substance consumed in the 12 months following EMDR. Two of the participants who reported consumption post-EMDR, identified the consumption occurred in social situations only, with no episodes of intoxication or binge use.

This then begs several questions: Is there always a need for concurrent treatment for individuals with both PTSD and SUD? Is it feasible/effective to embark on EMDR therapy before treatment for addiction? Why has the incidence of alcohol dependence reduced in the reported client cohort given only a standard EMDR protocol for PTSD was used?

One may argue that the answers may relate to the proposed mechanism of EMDR. According to Solomon and Shapiro (2008), EMDR enables a previously isolated traumatic memory network to be transformed from an episodic to semantic state allowing the processed trauma memory to be assimilated with other functional memory networks. Once processed, the trauma can be viewed and felt as a historical instead of a vivid and present event resulting in a reduction or cessation of PTSD symptoms.

Similarly, chronic stress and the constant threat of perceived and real danger can have a damaging effect on the trauma survivor's biological and neurological status (Frodl & O'Keane, 2013). It can be proposed that the removal of PTSD symptoms through EMDR can result in a removal of the overactivation of the hypothalamus-pituitary-adrenal (HPA) axis and a reduction in the prolonged and toxic release of cortisol. In addition, PTSD is associated with changes to blood flow, metabolism, and volume of gray matter

in areas of the limbic brain such as the amygdala and hippocampus (Pagani, Högberg, Fernandez, & Siracusan, 2013). The amygdala is known to be an important structure for episodic memory formation, and the amygdala has been highly implicated in fear conditioning (Hayes, Hayes, & Mikedis, 2012; Woon, Sood, & Hedges, 2010). Thus, it can be proposed that the processing of the traumatic material that occurs during EMDR will result in a restabilization of these structures allowing the body to regain homeostasis as it moves toward recovery. Overall, the reduction in PTSD symptoms along with the removal of chronic stress may account for a decreased need to use alcohol or drugs to inhibit the anxiety-related brain circuitry as well as a decreased need to self-regulate/medicate as clarity and functioning improves. Given the stated interesting results, it is reasonable to suggest that further research investigating the impact of standard EMDR on alcohol and substance dependence is well justified. Similarly, as outlined in the introduction, none of the modified EMDR protocols for alcohol and substance use have been thoroughly evaluated and therefore to determine their overall effectiveness is an area that requires further research.

Limitations to the data include a relatively small sample size and the lack of a control group. In future studies, it may be beneficial for a nontreating, independent clinician to complete the assessments as well as using an SUD specific validated instrument such as Obsessive-Compulsive Drinking Scale (Anton, Moak, & Latham, 1995) or the Munich Alcoholism Test (Feuerlein, Ringer, Kufner, & Antons, 1979). Similarly, future studies, depending on the needs of the participant cohort and to avoid an exacerbation or complications regarding SUDs, may need to consider a different or formal approach to monitoring or treating alcohol and substance use throughout EMDR therapy. A systematic review and meta-analysis by Roberts, Roberts, Jones, and Bisson (2015) indicates there is evidence that trauma-focused psychological intervention delivered alongside SUD can reduce both PTSD severity and alcohol/drug use. Najavits and Hien (2013) literature review identifies Seeking Safety, a nonexposure CBT therapy, as producing the most positive outcomes and is the only treatment that outperforms a control on both PTSD and SUD. As outlined in our introduction, there are no published studies that specifically investigate the Chemotion, DeTUR, or Robert Miller's FSAP. Future studies investigating the impact of these protocols, compared with TAU, and nonexposure (such as Seeking Safety) and exposure CBT would be highly beneficial.

In conclusion, our study suggests that the treatment of PTSD with the standard EMDR protocol can have a positive effect on SUD symptoms up to at least 12 months posttreatment. Further controlled studies with larger group sizes are required to confirm and elaborate on these findings.

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