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# Eye Movement Desensitization and Reprocessing (EMDR) in a forensic patient with Posttraumatic Stress Disorder (PTSD) resulting from homicide: a case study

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## ABSTRACT

Posttraumatic Stress Disorder (PTSD) resulting from perpetration, is highly prevalent in forensic populations and has been associated with future risk of anger, aggressive behavior, and criminal recidivism. Since forensic psychiatry aims at reducing violence and recidivism, treatment of PTSD in this population is of great importance. Controlled studies to the feasibility and effectiveness of PTSD treatment within forensic populations are lacking. In five case studies, however, feasibility of EMDR is demonstrated in offenders with PTSD and comorbid disorders like psychosis or depression. The present case study aimed to expand this knowledge by describing the application of EMDR to a forensic psychiatric patient with a narcissistic personality disorder with antisocial and borderline features, and PTSD resulting from a murder he committed. Over the course of EMDR, PTSD symptoms (both established by clinical interview and self-report) decreased. Posttreatment, the patient did not meet the criteria for PTSD anymore. Importantly, results were maintained during eight months follow-up and no adverse events took place. The results of this case study offer strong support for a randomized controlled study.

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**KEYWORDS** PTSD; EMDR; offense-related trauma; perpetrator; homicide

## Introduction

After experiencing traumatic events such as a car accident, violence or rape, some victims develop Posttraumatic Stress Disorder (PTSD; DSM-5; APA, 2013), including core features such as re-experiences, avoidance, negative cognitions

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and feelings, hyperarousal and reactivity. PTSD also frequently occurs in prison and forensic populations (Goff, Rose, Rose, & Purves, 2007). Furthermore, PTSD resulting from the perpetration of an offense itself is prevalent among forensic patients. Research showed that PTSD prevalence rates are between 32 and 52% in prison populations, of which 21–70% are a consequence of violent and/or sexual offending (Kruppa, Hickey, & Hubbard, 1995; Pollock, 1999; Spitzer et al., 2001). The highest prevalence rates of PTSD resulting from offending have been found in homicide perpetrators with severe mental illness, where the rates range from 33 to 58% (Crisford, Dare, & Evangeli, 2008; Gray et al., 2003; Papanastassiou, Waldron, Boyle, & Chesterman, 2004).

Untreated PTSD in general patient populations is unfavorable due to its prolonged emotional, psychological and physical consequences (Kessler, 2000; McFarlane, 2010), and the mediating effects on the course and severity of comorbid mental illness (Mueser, Rosenberg, Goodman, & Trumbetta, 2002). PTSD is associated with aggression-related conditions such as substance abuse (McCauley, Killeen, Gros, Brady, & Back, 2012), impulsivity (Tull, Weiss, & McDermott, 2016) and emotion regulation difficulties (Powers, Cross, Fani, & Bradley, 2015). Moreover, there is evidence that in forensic populations, PTSD is associated with an increased risk of anger, aggressive behavior, and criminal recidivism (Ardino, Milani, & Di Blasio, 2013; Foy, Furrow, & McManus, 2011; Sadeh & McNeil, 2015). This is of particular interest for forensic inpatients because forensic treatment is aimed at reducing recidivism (Andrews & Bonta, 2006).

Despite this, little is known about the conditions and pathways that may lead from perpetration to PTSD. Previous studies showed that posttraumatic cognitive-affective appraisals such as guilt, self-blame and a general negative view of the self are etiologically important in the development of PTSD after the perpetration of an offense (Crisford et al., 2008; Evans, Ehlers, Mezey, & Clark, 2007). In line with this, there is evidence of a pathway from PTSD, via cognitive factors such as worrying and rumination, to violence and the risk of re-offending (Ardino et al., 2013).

There is extensive evidence on the effectiveness of PTSD treatment through trauma-focused treatment (TFT) programs such as cognitive processing therapy, Prolonged Exposure (PE) and Eye Movement Desensitization and Reprocessing (EMDR) (for a review and meta-analysis, see Cusack et al., 2016). These TFT programs are recommended globally in the official treatment guidelines for PTSD, for example, by the International Society for Traumatic Stress Studies (Foa, Keane, Friedman, & Cohen, 2009), the National Institute for Health and Clinical Excellence, Guidelines on PTSD (NICE, 2005) and World Health Organization (WHO, 2013).

To date, there are no controlled studies concerning the effectiveness of PTSD treatments within forensic patients who developed PTSD after offending. Despite clinicians' hesitations concerning the consequences of PTSD treatment

(van Minnen, Hendriks, & Olf, 2010), more and more studies have provided support for the notion that trauma interventions can be applied safely in complex populations, without increasing adverse events, symptom exacerbation or expansion in comorbid conditions (van Minnen, Zoellner, Harned, & Mills, 2015). However, it must be noted that forensic and aggressive patients were not included in these studies.

To the best of our knowledge, there are only five published case studies investigating PTSD treatment effects in patients with PTSD resulting from offending (CBT: Kayrouz & Vrklevski, 2015; Lad, 2013; Rogers, Gray, Williams, & Kitchiner, 2000; EMDR: Clark, Tyler, & Gannon, 2014; Pollock, 2000). All studies showed large reductions in offense-related PTSD symptoms, as well as improved functioning. Adverse events did not occur. However, in all of these case studies (except for Pollock (2000)), symptoms of PTSD were assessed with self-reporting questionnaires instead of clinical interviews, which may have caused social desirability flaws. Also, patients in previous case studies suffered from comorbid psychosis or depression, not personality disorders. This limits the conclusions that can be made, given that personality disorders are highly prevalent in forensic psychiatry (De Ruiter & Trestman, 2007).

The aim of this case report is to increase knowledge about the feasibility and effectiveness of EMDR as a treatment for PTSD resulting from offending. In the current case study, we treated a forensic psychiatric patient with narcissistic personality disorder and antisocial and borderline features. The severity of PTSD symptoms was measured at pretreatment, posttreatment, and with an eight-month follow-up, using both clinical interview and self-report. Posttraumatic cognitions were also assessed because cognitive factors are known to be important in the development and maintenance of PTSD (Ehlers & Clark, 2000).

## Method

### *Case description*

The patient was a 35 year-old man,<sup>1</sup> with a history of offenses including theft, extortion, driving under the influence of alcohol and attempted manslaughter. There was no history of psychiatric treatments other than an earlier obligatory forensic outpatient treatment in 2002. In 2007, at the age of 25, he killed a girl with a weapon (the index offense). After detention, he was admitted to an inpatient center for forensic psychiatry. Within this forensic center, he was diagnosed with a narcissistic personality disorder and borderline and antisocial features. This diagnosis was established by an experienced diagnostician, using extensive information about the patient's life history as well as standardized assessment tools for personality problems (for example, the Minnesota Multiphasic Personality Inventory-2 (MMPI-2); Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) and following the diagnostic criteria of personality

disorders, using the DMS-IV-tr. The patient previously suffered from abuse of alcohol, cannabis as well as cocaine; all were currently in remission.

Forensic therapy started with individual offense therapy, which is a central and essential part of Dutch forensic psychiatric therapy (also known as offense scenario/chain procedure; for similar interventions, see de Boer, Whyte, & Maden, 2008; Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005). In this intervention, a 'scenario' of the offense is reconstructed, in which all offense-related cognitive, emotional, behavioral, and situational aspects, which were present before, during and after the offense, are described (van Beek & Mulder, 1992). A major goal of the therapy is to teach the patient to self-intervene in all these offense-related aspects, in order to prevent further offenses.

During offense therapy, the patient reported symptoms indicative of PTSD, like offense-related recurrent, intrusive and distressing images, and thoughts (e.g. seeing his victim's body lifeless on the ground). He experienced psychological distress, physiological reactivity, and signs of dissociation during and after exposure to offense-related cues. He could, for example, hardly say the name of the victim without feeling very distressed. He made a lot of effort to avoid all thoughts, feelings, objects, and situations associated with the offense (e.g. certain programs on television and objects similar to the weapon he used). He could not recall important aspects of the trauma and felt detached from others. Moreover, he experienced difficulties with sleeping and concentrating and his agitation, grief about the offense and suspicion increased as well. The patient avoided analyzing and talking about (the details of) the offense during the treatment sessions, and his treatment adherence lessened. As a result, important aspects of the offense and his personality, could not be reflected on, let alone be treated and processed.

Due to the interference of PTSD symptoms with the offense therapy, a trained psychologist used the Clinician-Administered PTSD Scale-IV (CAPS-IV) to establish whether he fulfilled the diagnostic criteria of PTSD. The results showed the patient met the full diagnostic criteria for PTSD. In order to diminish the PTSD and divert a forensic treatment standstill, a trauma-focused treatment was offered.

### ***Clinical measures***

Clinician-rated PTSD diagnosis and PTSD symptom severity was established using the Dutch translation of the CAPS-IV (Blake et al., 1995; Dutch version: Hovens, Luinge, & van Minnen, 2005). We used the CAPS-IV instead of the more recent CAPS-5 because at the time of administration the CAPS-5 was not yet in use. With the structured clinical interview CAPS-IV, both frequency and intensity of PTSD symptoms can be measured. The CAPS-IV has excellent psychometric properties (Weathers, Keane, & Davidson, 2001). Self-reported symptoms of PTSD were assessed with the PTSD Symptom Scale Self-Report

(PSS-SR; Foa, Riggs, Dancu, & Rothbaum, 1993; Dutch version: Arntz, 1993). The PSS-SR has good test-retest reliability and internal consistency (Foa et al., 1993). Posttraumatic cognitions (negative cognitions about the self, negative cognitions about the world and self-blame) were measured with the Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Dutch version: van Emmerik, Schoorl, Emmelkamp, & Kamphuis, 2006). The PTCI exhibits good psychometric characteristics (van Emmerik et al., 2006). Previous findings showed that PTCI scores are highly correlated with PTSD severity (Foa et al., 1999).

### **Procedure**

Information was given and the patient gave written informed consent for the case study. In total, 12 sessions of EMDR were applied using the Dutch translation of the manualized standard eight-phase protocol (de Jongh & ten Broeke, 2012; Shapiro, 2001, for a description, see <http://www.emdria.org/?120>). Evidence is mounting, concerning the working mechanism of EMDR, to support the working memory model (de Jongh, Ernst, Marques, & Hornsveid, 2013). According to this account, working memory is taxed when a vivid and emotional traumatic memory is recalled. If another task (for example, the client's eyes following the therapist's hand back and forth) is executed during this recall, fewer resources would be available for the traumatic memory. This competition is thought to result in decreased memory resources for the vividness and emotionality of the traumatic memory (desensitization).

In the present case study, EMDR was carried out by a trained and experienced EMDR-therapist. The EMDR-therapist was able to apply the standard protocol without adaptations. During the course of EMDR on offense-related imagery, it appeared that the patient also suffered from the effects of war-related images originating from combat experiences from around 2001, several years prior to the index offense.<sup>2</sup> These images were also targeted with EMDR. The CAPS-IV, PSS-SR, and PTCI were administered by the EMDR-therapist before (baseline) and after 12 sessions of EMDR. At the eight-month follow-up, the CAPS-IV, PSS-SR, and PTCI were administered by the trained psychologist who also established the initial PTSD diagnosis. None of the authors were directly involved in the EMDR-treatment and data collection. The validity scales of the MMPI-2 and clinical observations by the EMDR-therapist, the psychologist who administered the clinical measures at follow-up and ward staff were used to assess the veracity of the patient's self-report.

Preceding the first session of EMDR, one pre-session took place, focusing on organizational issues and general emotion regulation skills. In the course of the EMDR, two supporting appointments were inserted: one to discuss trauma-unrelated stressors, and one to restructure the patient's daytime activities and administration. Importantly, during the course of EMDR, the patient did

**Table 1.** Patients' offense-related PTSD scores on clinical measures, baseline, and post-EMDR.

Clinical measures	Baseline	Assessment Post-EMDR	Follow-up (FU; eight months)	% Improvement (FU vs. baseline)
CAPS	94	15	9	90
PSS-SR	37	3	0	100
PTCI	152	46	50	86

Note:

For the PTCI, in calculating the improvement rate, its minimum score of 33 was taken into account and subtracted from baseline and post treatment score.

not receive other psychological or trauma-focused interventions, nor (changes in) psychopharmaca.

## Results

See Table 1 for CAPS-IV, PSS-SR, and PTCI scores.

### *EMDR treatment process*

Four concrete offense-related traumatic events were selected for desensitization. They were identified by the patient as most intrusive and distressing. The focus in sessions one and two was on an image in which the patient saw himself attacking the victim. Distress did not diminish fully because another image interfered – an image in which the patient saw himself standing behind the victim, who was covered with blood and lying on the ground. He could hardly look at the image as it made him very anxious and emotional. This second image was successfully targeted and desensitized in session two. In session three, the patient reported being more anxious and agitated than usual. He reported having trouble falling asleep and restlessness during the night due to the distressing image of the victim lying on the ground. This third image of the offense was desensitized. Afterward, the patient reported he felt washed out, tired and sad for about two weeks. He did not report any distressing thoughts or images about the index offense itself and the victim, however. In the fourth session, a distressing image in which the patient saw himself sitting in the police cell – helpless, all by himself and realizing what he had done – was desensitized. At this point the patient could look at all targeted images without recurrence of distress and anxiety. Images were less vivid than pre-EMDR. Furthermore, the patient no longer avoided offense-related situations, thoughts, and feelings – whereas before the EMDR he avoided almost all cues reminding him of the index-offense. Symptoms of dissociation were also no longer present.

In sessions five and six, no EMDR took place. Previously desensitized images were evaluated. The effects had maintained: PTSD symptoms such as re-experiences, flashbacks, nightmares and avoidance had not occurred in the intermediate period. No new distressing images about the offense were reported by

the patient. However, in session seven, the patient reported distress regarding images of war situations he had experienced years prior to the index-offense. Two concrete war-related traumatic events were selected for desensitization: One in which the patient saw watchtowers with guards and one in which he heard children screaming. In sessions 8–12, these images were targeted and successfully desensitized with EMDR. The patient did not experience return of earlier distressing offense-related images or avoidance.

Importantly, no adverse events, such as aggressive behavior, automutilation or drug relapse, took place during or in-between EMDR sessions. Although the patient missed several EMDR sessions, treatment fidelity was sufficient and better than during previous offense therapy.

### ***CAPS-IV, PSS-SR, and PTCI baseline, post-EMDR results***

Baseline CAPS-IV and PSS-SR scores were indicative of severe PTSD (Coffey, Gudmundsdottir, Beck, Palyo, & Miller, 2006; Weathers et al., 2001). Over the course of EMDR, CAPS-IV, and PSS-SR scores declined to a great extent (see Table 1). Posttreatment results showed that symptoms of re-experiencing and avoidance were no longer present. Remaining symptoms included difficulties remembering important parts of the trauma and arousal. The patient did not meet the criteria for PTSD anymore. The decreases in scores and full remission state of PTSD diagnosis corresponded with the criteria of Schnurr and Lunney (2016), defining remission as loss of diagnosis plus a 20-point diminished severity score. Cognitive symptoms associated with PTSD, which were high at baseline (Foa et al., 1999), diminished to a large degree. This was the case for all three subscales of the PTCI (negative cognitions about the self, negative cognitions about the world and self-blame).

### ***Veracity of self-report***

The validity scales of the MMPI-2 suggested that the presented symptoms and problems by the patient were reliable and valid, and not indicative for malingering or exaggerating (Graham, 2011). Clinical observations did not give rise to presumptions about possible malingering. The patient was consistent in his reports about the trauma, symptoms of PTSD, and treatment gains. He also did not portray himself as a victim, and he preferred not to talk about the trauma and symptoms of PTSD.

### ***Continuation of offense and other therapy***

After EMDR, the patient was able to resume and make gains in offense therapy and, later, Dialectical Behavioral Therapy (DBT; Linehan, 1993) for his personality disorder. Offense-related details, circumstances, cognitions, and emotions could



be talked about and reflected on, without the return of offense-related PTSD symptoms, dissociation, and treatment infidelity.

### **Follow-up results**

Importantly, the obtained CAPS-IV and PSS-SR results maintained over an eight-month follow-up period as well as reductions on the PTCI (see Table 1). Difficulties remembering important parts of the trauma was the only PTSD symptom which remained to a considerable degree.

### **Discussion**

The results of the present case study suggest that EMDR can be effectively applied to PTSD resulting from perpetration, even in the presence of personality problems. PTSD symptoms showed great improvement within 12 sessions. Vividness of images diminished and accompanying distress disappeared. Signs of dissociation were no longer present after EMDR. Following the criteria of Schnurr and Lunney (2016), the patient reached a full remission end state. Importantly, and in contrast with others considering the possible adaptations in executing EMDR (Clark et al., 2014) and exposure-based PTSD programs in offenders (Smith, Duax, & Rauch, 2013; Stenmark, Guzey, Elbert, & Holen, 2014), EMDR was applied in its usual form in the current case study. The gains achieved maintained over an eight-month follow-up period. Importantly, no adverse events, such as aggressive behavior, took place during the course of treatment and follow-up period.

These results are in line with previous case studies and expand the evidence of feasibility, effectiveness and safe application of EMDR treatment for (severe) PTSD after perpetration. The combined case reports contribute to the growing evidence that PTSD can be effectively *and* safely treated in complex populations with comorbid conditions, without adverse events (e.g. van Minnen et al., 2015; van den Berg et al., 2016). More research is necessary before firm conclusions can be drawn. Despite the lack of scientific evidence that aggressive behavior can be directly induced by trauma-focused treatments, forensic and aggressive patients are generally not included in PTSD studies. Clinicians might be afraid that resolving the patient of his/her intrusive recollections of their violent act(s) possibly leads to new perpetration. To our knowledge, there are no scientific studies investigating the possibility that successful forensic treatment for PTSD might lead to negative consequences such as higher recidivism. Future studies that investigate the relationship between PTSD-treatment and recidivism are needed. Prudence and precaution for anger and aggression is however, always a risk when working with forensic patients.

Unlike earlier case studies, the present results were obtained in a patient with a personality disorder, which is relevant because personality disorders are highly

prevalent in forensic psychiatry (De Ruiter & Trestman, 2007). Another novel aspect of the present case report is that posttraumatic cognitive appraisals were assessed as well as PTSD symptoms. Moreover, a clinically reliable improvement was reached on these appraisals (>50%; Ogles, 2013). This is important because cognitive factors might mediate the pathway between PTSD and re-offending (Ardino et al., 2013). Controlled studies are of course still needed to investigate the specific role of cognitions in PTSD after offending. In Clark et al. (2014) it is stated, for example, that cognitions such as guilt could be considered legitimate, and even protective, in PTSD after offending. However, it is important to note that the aim of treatment is not to absolve the individual of guilt (Lad, 2013).

The present findings cannot be interpreted without discussing several limitations of the case study. Generalizability of individual case studies is limited. The two supporting sessions that were inserted may have also interfered with the EMDR process. No other psychological or trauma-focused interventions were given during the course of EMDR, however, nor did the patient receive (changes in) psychopharmaca. Another limitation is the absence of a formal assessment tool for possible malingering. There is a possibility that the patient might have exaggerated or even simulated his PTSD symptoms, for example, to reduce his personal responsibility for the offense. In general, working with forensic patients, one should always consider the possibility of such motives and processes. In the current case, however, there were no signals that malingering or exaggeration took place. The validity scales of the MMPI-2 suggested that the presented symptoms by the patient were reliable and valid (Graham, 2011). Clinical observations did not give rise to presumptions about possible malingering and the patient was consistent in his self-reports. A final consideration should be made of the patient's narcissistic personality disorder, which at first glance might be at odds with the proposed etiological importance of guilt and self-blame in the development of PTSD after perpetration (Crisford et al., 2008; Evans et al., 2007). It is important to keep in mind that not all narcissists completely lack empathy, and the ability to feel empathy may depend on other situational and personality factors (Baskin-Sommers, Krusemark, & Ronningstam, 2014).

A strength of our case study is that diagnosis and clinical outcomes were established with the CAPS-IV instead of relying solely on self-report measures, as was the case in previous case studies. This is important because forensic patients might not want to disclose trauma and offense information, for example due to mistrust of unknown professionals or ignorance. This was initially the case in our study as the patient did not realize the significance of trauma treatment. In life, he had also learned not to show his weaknesses and emotions. It was necessary to question him thoroughly on such matters. Therefore, the therapist of this patient, and not an independent rater, administered the CAPS-IV both at pretreatment and posttreatment stages. This does of course not exclude social desirability and symptom exaggerating per se, but at least the therapist could observe the patient's reactions and, when in doubt, profound questioning is

possible. A disadvantage of this approach is that the CAPS-IV at posttreatment was not administered by an independent interviewer. However, the self-report measures and follow-up administration of the CAPS-IV by a different psychologist demonstrated similar results. Another strength of the current case study is that the EMDR treatment took place within a naturalistic and routine clinical forensic practice.

In summary, combined with earlier case studies, the present results might indicate the safe application, feasibility and effectiveness of EMDR treatment for PTSD after perpetration. We hope the present case study gives rise to larger and controlled studies to EMDR (or other evidence based trauma-focused treatments) as a treatment of choice for PTSD in forensic patients who have been traumatized by a crime they committed.

## Notes

1. Details have been altered for the purpose of anonymity. The patient provided informed consent for this case study to be written.
2. Details considering these events are not presented here, due to reasons of anonymity.

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No potential conflict of interest was reported by the authors.

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