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Running Head: EMDR FOR OFFENCE-RELATED TRAUMA

**Eye movement desensitisation and reprocessing (EMDR) for offence related
trauma in a mentally disordered sexual offender**

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Abstract

Research demonstrates a high incidence of offence-related trauma in mentally disordered offenders convicted of violent and sexual offences. The Adaptive Information Processing (AIP) model offers a theoretical framework for understanding the hypothesised relationship between offence-related trauma and re-offending. Evidence suggests that for a sub-population of offenders presenting with offence-related trauma: (1) therapy may re-traumatise them, and (2) unresolved trauma severely blocks the positive benefits of talking therapies. Thus, it is postulated that traumatised violent and sexual offenders may be released into the community when they are still at risk of re-offending. A single-case study is presented, which describes the application of EMDR for a sex offender presenting with offence-related trauma, whose offences occurred in the context of serious mental disorder. The identification of offence-related trauma and subsequent resolution of trauma symptomatology is discussed in regard to effective offender rehabilitation. Furthermore, the idiosyncratic nature of offence-related trauma and the application of the standard EMDR protocol for a single traumatic event are considered.

KEYWORDS: Eye Movement Desensitisation and Reprocessing (EMDR), offender rehabilitation, offence-related trauma, adaptive information processing model, recidivism, sex offender treatment

What do we know about offence related trauma?

Research has demonstrated that perpetration of an offence *itself* can illicit trauma (i.e., offence-related trauma; Pollock, 2000) even if the victim is not killed (Payne, Watt, Rogers & McMurrin, 2008). Large-scale studies have reported prevalence rates of Post Traumatic Stress Disorder (PTSD) as a consequence of violent offending in prison populations ranging from 15% (Collins & Bailey, 1990) to 32% (Steiner, Garcia & Matthews, 1997). With regards to mentally disordered offenders the prevalence rate for offence-related trauma is considered to be much higher. In their sample of 37 patients detained for violent and sexual offences, which occurred in the context of serious mental disorder, Gray et al. (2003) report that in relation to offence-related trauma, 33% met the DSM-IV criteria for PTSD (DSM-IV-TR; American Psychological Association, 2000), and 54% had significant trauma symptomatology. Similarly, Crisford, Dare and Evangelini (2008) reported that 40% of their sample of 45 mentally disordered offenders reported symptoms of offence-related trauma. Moreover, these authors reported a positive correlation between offence-related guilt cognitions and higher levels of offence-related trauma.

The effects of trauma on the brain, social functioning and re-offending

Trauma theory (i.e., the Adaptive Information Processing model, AIP; Shapiro, 1995, 2001) asserts that traumatic/negative life events — instead of being processed into long term memory—become ‘stuck’ in short term memory in their raw ‘state’ form. As a result strong images, thoughts, and feelings associated with the ‘state’ of trauma become easily triggered in everyday life. Once triggered, neurobiological research shows that trauma leads to enduring neuropsychological problems including: (1) decreased frontal cortex functioning associated with thought and speech production, and (2) increased right brain hemisphere functioning (e.g.,

within the amygdala) associated with physiological arousal and emotion (see Beech & Fisher, 2011). Thus, when re-experiencing trauma, individuals experience deficits that diminish their ability to control strong emotions (e.g., anger), and disable verbal and cognitive reasoning skills (i.e., problem solving). Of particular note is that compromised amygdala functioning affects an individual's recognition and experience of fear and danger (Adolphs, Tranel, Damasio, & Damasio, 1994) activating automatic physiological fear-related responses such as avoidance or aggression (LeDoux, 2003). Thus, the AIP offers a theoretical framework for understanding the hypothesised link between offence-related trauma and re-offending: unprocessed offence-related trauma when activated would cause the offender to react (think, feel, behave) in the present as they did at the time of the original trauma (i.e., the offence). Despite this hypothesis, however, little work has examined how trauma might facilitate serious violent and sexual offending in the community. With regards to re-offending, Kubiak (2004) reports an exploratory study which highlights that incarcerated men with co-morbid substance use disorders and PTSD were more likely to recidivate than those without PTSD.

Offence-related trauma and rehabilitation

Current treatments for mentally disordered offenders focus on “talking” therapies which aim to change the way offenders think in order to change their offending behaviour (i.e. cognitive behavioural treatment). A key focus, for example, is on improving cognitive reasoning and emotional regulation (Hollin & Palmer, 2006). However, because talking therapies typically involve discussions of childhood history, important life events, and the offence itself, they can serve to re-activate trauma responses resulting in (1) exacerbation of trauma symptoms (i.e., re-

traumatisation; Doob, 1992; Mueser, Rosenburg, Goodman & Trumbetta, 2002), and (2) an individual who is resistant to treatment since their brain functioning and chronic stress do not allow them to adequately process and integrate rational talking therapy (Beech & Fisher, 2011; Gray et al., 2003; McFarlane, Brookless & Air, 2001; Mueser et al., 2002). For instance, in one case study it was shown that trauma can indeed be generated via conventional treatment (Rogers et al., 2000). Consequently, traumatised violent and sexual offenders may be released into the community when they are still at risk of re-offending.

Effective treatment of trauma

NICE Guidelines recommend either Cognitive Behavioural Therapy (CBT) or Eye Movement Desensitisation and Reprocessing (EMDR) for the treatment of psychological trauma (NICE, 2005). Research has shown both CBT and EMDR as being effective in the reduction of trauma symptomatology (see Seidler & Wagner, 2006 for a comparative meta-analysis), however, individuals have been found to make treatment gains in fewer sessions with EMDR compared to CBT (Jaberghaderi, Greenwald, Rubin, Zand, & Dolatabadi, 2004; de Roos et al., 2011). EMDR is a form of psychotherapy, theoretically linked to the AIP model of brain functioning (Shapiro, 1995, 2001) described earlier. During EMDR the client is instructed to attend to the traumatic event(s) in brief doses while receiving bilateral brain stimulation (e.g. following the therapist's fingers with eye movements or alternating right and left hand-taps). This bilateral stimulation is believed to open up the brain's natural information processing avenues, enabling more adaptive associations to be made. Ultimately, as more adaptive associations are made to the traumatic event adaptive processing enables the event to be processed into long-term memory (Shapiro, 2009).

As a result, clients are able to recall the episode as distressing but are no longer ‘stuck’ in the traumatic event (see Hornsveld, Houtveen, Vroomen, Aalbers, & van den Hout, 2011 for an alternative explanation of the mechanisms behind EMDR). EMDR has accumulated an impressive evidence-base (Bisson & Andrew, 2007; NICE, 2005) and is deemed to be one of the swiftest methods for resolving trauma (Shapiro, 2004). Notably, EMDR does not require strong articulation skills making it an ideal intervention for offenders with poor verbal ability.

Despite the potential utility for EMDR to be applied with offenders presenting with offence-relating trauma in order to possibly reduce re-offending, only three published studies have examined EMDR with offenders (Pollock, 2000); all of which report positive EMDR effects. One was a single case study examining the effects of EMDR with a homicide offender with offence related trauma (Pollock, 2000). Ricci (2006) report another case study with an incestuous child abuser; and finally, Ricci, Clayton and Shapiro (2006) examined EMDR as an adjunct to standard sexual offender treatment for sexual offenders with unresolved childhood trauma (Ricci et al., 2006) and found significant post treatment improvements on six areas specific to sexual offending (e.g., sexual thoughts). However, to date, there is no published research investigating the effectiveness of EMDR in mentally disordered offenders presenting with offence-related trauma.

In summary, there is a sub-population of mentally disordered violent and sexual offenders who experience unresolved trauma relating to their offending behaviour. Furthermore, a growing body of research suggests that: (1) standard therapy may retraumatise offenders, and (2) unresolved trauma severely blocks the positive benefits of talking therapies. Although EMDR is deemed effective in the treatment of PTSD (NICE; 2005) we do not know how effective this therapy is for the

treatment of offence-related trauma. The present paper describes the application of EMDR with a sex offender presenting with offence-related trauma, whose offences occurred in the context of serious mental disorder.

Case study

Participant

‘Mark’¹ is a 26 year old man who had a preliminary diagnosis of Paranoid Schizophrenia and was detained in a medium secure unit in England under Section 37/41 of the United Kingdom’s Mental Health Act (1983). His index offences were two counts of ‘Gross Indecency’ and he had a previous history of sexual offending, including sexual assault, voyeurism and harassment. His offending behaviour extended over a period of one year and appeared to have coincided with a noticeable deterioration in his mental state and functioning. The consensus regarding Mark’s sexual offending was that it arose in association with general disinhibition related to a psychotic process illness. This was further borne out by his favourable response to anti-psychotic medication and subsequent reduction in overt sexualised behaviour. Mark had previously attended two Sex Offender Treatment Programs (SOTP), both of which were conducted within the framework of Cognitive Behavioural Therapy (CBT) – primarily focusing on the four main groups of risk factors empirically associated with sexual offending; namely: *inappropriate sexual arousal/fantasy*, *offence-supportive thinking* (including victim empathy), problems with *self-regulation*, and *intimacy deficits* (Thornton, 2002). Mark had made minimal therapeutic gains following attendance at his first SOTP, being described as poorly motivated to address his offending behaviour evidenced by his reluctance to talk during group sessions.

¹ Details have been altered for anonymity purposes. Mark provided informed consent for this case study to be written.

However, he engaged well during the second SOTP and made some improvements in all four main groups of risk factors. Despite his improved engagement, therapeutic gains from the SOTP were short-lived; Mark continued to exhibit high levels of anxiety, and appeared to actively sabotage any progress he perceived himself to be making and described an overwhelming fear of being discharged into the community. Mark eventually disclosed that he was experiencing intrusive thoughts and flashbacks relating to his past sexual offending. Despite the fact that his offences had occurred over five years previously he seemed to process himself as a current risk towards females and this belief was resistant to verbal challenges and other standard CBT approaches. Mark admitted to avoiding places where he could find himself alone with females and to over-controlling his actions if his avoidant strategy failed.

Materials

The hypothesis that Mark could be experiencing offence-related trauma was considered and the Impact of Events-Revised (IES-R; Weiss & Marmar, 1997) scale was used to measure the impact of his offending behaviour. The IES-R is a 22 item self report measure that is used to assess post-trauma psychopathology in adults. The IES-R has 3 subscales: intrusion, avoidance and hyper-arousal, as well as a total stress score. Higher scores on the IES-R indicate higher levels of post-trauma symptomatology. In general, the IES-R is not used to diagnosis PTSD, however, cutoff scores for what is considered clinical and non-clinical range are as follows: 0-8, subclinical; 9-25, mild range; 26-43, moderate range; and 44 plus, severe range. Mark endorsed symptoms indicating the presence of trauma reaction and indicated that his offences remained unprocessed and that he was traumatised by his own actions. Indeed his pre-EMDR score of 33 (moderate range) revealed that Mark had had sufficient symptomatology to warrant seeking clinical treatment.

In addition to the IES-R, two other measures were used during the assessment phase of EMDR treatment, these were: i) the Subjective Units of Distress (SUDs²; Wolpe, 1990), which is a scale of 0-10 that measures trauma-associated emotional disturbances. The participant is required to provide a score to indicate the level of disturbance they feel in relation to the disturbing event. The intensity recorded relates to the here and now; reduction in score over the course of treatment suggests movement towards trauma resolution; and ii) Validity of Cognition (VOC; Shapiro, 1995), which measures cognitive beliefs associated with trauma. In order to ascertain a VOC score, the therapist asks the client to provide a negative cognition associated with the disturbing event. They are then asked to consider a positive cognition to be associated with the same image. While holding the picture of the disturbing event and the positive self-perception in mind, the participant is asked to assess on a scale of 1 (totally false) to 7 (totally true) how true the positive self-perception feels so that an initial "validity of cognition" (VOC) score can be obtained.

By recording the SUDS and VOC scores at the beginning of treatment, a baseline can be established from which progress can be monitored.

Treatment procedure

An extended assessment indicated that Mark was suitable for EMDR treatment; however, some time was spent in the preparation stage to ensure that he could tolerate high levels of affect. Two sessions were dedicated to Resource Development and Installation (RDI), which is a technique used for ego strengthening and stabilisation. Mark was socialised with ease to the psychological model of trauma

² SUDs in this context are not to be confused with the term 'Seemingly Unimportant Decisions' used in relapse prevention.

and appeared to have an excellent understanding of the rationale for using EMDR, stating “*I don’t know how to move on from my offences*”.

Mark was treated using the standard protocol for EMDR (Shapiro, 1995). In brief, during the assessment phase of treatment, the components of the target include an image of the memory to be held in mind (both the negative and desired positive self-assessments associated with the memory), the emotions connected to the memory, as well as any accompanying physical sensations. While holding the picture and positive self-perception in mind, Mark was asked to assess on a scale of 1 (totally false) to 7 (totally true) how true the positive self-perception feels so that an initial VOC score could be obtained. With the emotions, the image and the negative self-belief, Mark was asked to assess on a scale of 0 (neutral/no distress) to 10 (extreme distress) how disturbing the memory was so that an initial SUDs score could be recorded. Mark reported the image of the victim of his sexual assault when he had assaulted her; the worst part of the memory was “*the look on her face*”. The negative cognition which expressed his belief about himself was “*I am out of control*” and his emotions was guilt, fear and shame. The identified body sensations were a feeling of ‘butterflies’ in his stomach and a “*choking feeling*” in his throat. Mark reported an initial SUDs score of 8, indicating high levels of distress. The positive cognition “*I can control myself*” Mark rated as 2 out of 7 (untrue) at baseline. During the desensitisation phase, whilst Mark was holding all of the identified target components in mind, the therapist induced repeated bilateral hand-taps³. Mark was asked to “just notice” any images, thoughts, sensations or feelings that he experienced. After a set (lasting between 60-75 seconds) of bilateral hand-taps, Mark was asked to provide brief feedback on what had come into awareness. The therapist did not make any

³ Bilateral hand taps, as opposed to other forms of bilateral stimulation (i.e. eye movements, or auditory stimulation) were used simply because this was Mark’s preference.

interpretation, but rather asked Mark to “just go with that” and recommenced another set of hand-taps. SUDs scores were recorded throughout the process. When Mark would report no change (suggesting that a memory channel or network had been processed) – he was asked to return to the target memory and provide a SUDs score. Crucially, EMDR is considered a three-pronged approach, whereby the treatment focuses not just on the past problem or trauma, but also on the present and future. To illustrate this, once the touchstone event (i.e., the offence) was processed, therapy focused on triggers in the present that continued to distress Mark (e.g., being alone with women), before installing a future template of behaviour (i.e., how would you like to see yourself handling a trigger situation in the future?).

Mark attended six weekly EMDR sessions, each lasting for up to 75 minutes. Treatment was administered by a clinical psychologist who had completed three-part training in EMDR. The majority of sessions focused on the target memory relating to his Sexual Assault and Voyeurism offences. He reported a reduction in SUDs over the first 3 sessions, but despite a significant amount of seemingly adaptive processing he noted that he could not reduce his SUDs below 4/10 because “*of what happened in prison*” as a consequence of the offences. Evidently Mark had been the victim of assault whilst in prison (prior to receiving his Hospital Order) and this event became the target memory for processing in its own right. Once this traumatic memory had been effectively processed he reported “*a shift in my thoughts*” in relation to his offences and following another 2 sessions of EMDR, his SUDs reduced to 1/10. It is of note that during the desensitisation phase, Mark appeared to be drawing on material that he had covered during the SOTP – almost as though an adaptive network which had internalised the material was enveloping around the traumatised or ‘stuck’ network. He described feeling “*more at peace*” and stated “*for the first time in 7 years*

I really do believe that I wouldn't do anything like that again".

During the installation phase, the positive cognition "*I can control myself*" was installed with relative ease and Mark rated the positive cognition as 7 (completely true) after 3 intervals of slow bilateral hand-taps.

Evaluation

As can be seen in Table 1, Mark's SUDs reduced from 8 to 1, and his VOC score increased from 2 to 7 post-EMDR treatment. Accordingly, a reduction to a SUD's level of 0 or 1, along with a VOC of 6 or 7 is considered a strong indication that both desensitisation and positive restructuring has occurred (Shapiro, 2001).

The IES-R was re-administered at one-month, 3 month and 12 month follow ups, and scores showed a continual reduction in trauma symptomatology over the 12 month period (see Table 2 below), resulting in scores falling well within non-clinical range. It is of note that his IES-R increased slightly at the 12-month follow-up; this increase may be explained by the fact that administration of the psychometric coincided with his discharge to the community and may reflect general background anxiety.

Subjective feedback from Mark was consistent with objective data as he described a sense of "*moving on from the past*" and an improved ability to "*express myself*". These subjective observations were also noted by staff members, who reported that Mark was more relaxed on the ward and more forthcoming with his concerns.

Post EMDR treatment Mark began using his unescorted (Section 117) leave from hospital to its maximum without incident, and reported a reduction in anxiety whilst away from the unit. He described his leave as "*enjoyable*" as opposed to

“*stressful*”. Mark’s clinical team began planning for his discharge 6 months following completion of EMDR treatment and he was successfully discharged into the community by the time of the scheduled 12-month follow-up. No other treatment methods were provided to Mark during the follow-up period.

[Insert Table 1 about here]

[Insert Table 2 about here]

Discussion

The present case study explored the efficacy of the EMDR standard protocol for the treatment of offence-related trauma in a mentally disordered sexual offender. Treatment effects were evaluated by disturbance ratings (SUDs), standardised measures, and subjective and objective feedback. Inspection of all areas of evaluation indicates that initial treatment effects were striking. Moreover, IES-R scores at one-, three-, and twelve-month follow-ups demonstrated that these treatment gains were maintained. Given that Mark did not receive any other treatment during the follow-up period, this offers support for the potential efficacy of the EMDR intervention for the treatment of his offence-related trauma.

Mark had previously attended two Sex Offender Treatment Programme (SOTP) groups, both of which were CBT-based. He made limited gains in the first group (this was likely due to the fact that he was experiencing ongoing symptoms of severe mental illness at the time), and despite engaging well in the second SOTP, Mark appeared unable to internalise group material and made limited, short-term treatment gains from his attendance. Research suggests that Mark’s resistance to

verbal-based treatment approaches may have been thwarted by: 1) ongoing trauma symptomatology related to his offences, i.e. re-traumatisation (Rogers et al., 2000); and/or 2) brain malfunctioning functioning as a consequence of chronic stress (i.e. trauma) – compromising his ability to process and integrate talking therapies (Beech & Fisher, 2011; Gray et al., 2003; McFarlane et al., 2001; Mueser et al., 2002). Based on this, it is postulated that if Mark had not disclosed his trauma symptomatology, he could potentially have been discharged into the community still at risk of re-offending.

These preliminary findings raise several key clinical considerations which relate to the identification and subsequent resolution of offence-related trauma. Firstly, all offenders should be screened for offence-related trauma prior to engaging in any offending behaviour programme. Trauma symptomatology is (usually) routinely collected at admission to a secure forensic unit; however, the *nature* of the trauma is rarely identified. Secondly, in order to avoid re-traumatisation and exacerbation of symptomatology, offenders presenting with unresolved trauma relating to their offences should not undertake offence-related interventions until they have reached trauma resolution. Finally, given the impact that trauma has on brain functioning, offence-related trauma may be best treated by non-verbal approaches – which EMDR is. Arguably, given the possible link between unresolved trauma and recidivism (Kubiak, 2004), identification of offence-related trauma and subsequent resolution of trauma symptomatology is of paramount importance for effective offender rehabilitation.

Although EMDR is deemed effective in the treatment of PTSD (NICE; 2005) we do not yet know how effective this therapy is for offenders presenting with offence-related trauma. However, results of the present case study are consistent with

a previous case study involving the treatment of offence-related trauma for homicide (Pollock, 2000) and lend further support for the application of EMDR for this specific type of trauma presentation. As a single case study, it is not possible to generalise findings to all offenders and this highlights the need for rigorous research targeting offence-related trauma with EMDR. Several authors have raised the issue of the importance of trauma resolution in offenders (e.g. Payne et al., 2008; Gray et al., 2003; Rogers et al., 2000), but to date, no research has attempted to address this on a large-scale. Advancements in theoretical understanding of offence-related trauma are imperative to aiding improvements in clinical treatments and elucidating the relationship to recidivism.

Since the advent of EMDR in 1989, this treatment approach has evolved in order to treat specific types of clinical presentations; and there are now protocols for the treatment of bereavement (Solomon & Rando, 2007); phobias (de Jongh, 1999); and addiction (Popky, 2005). The AIP model (Shapiro, 1995, 2001) is the theoretical framework underlying all of these specific protocols. Mark was treated using the standard protocol for EMDR, as described by Shapiro (1995). The AIP model offers a context for understanding the key nuances specific to offence-related trauma which warrant consideration when applying the standard EMDR protocol to offenders. Firstly, unlike traumatised victims of assault (or other traumatic (non-offence) events), who perceive themselves as *at* threat, perpetrators of violence and sexual assaults will perceive themselves as *a* threat. This is an important issue with regard to the offenders risk management whilst undertaking EMDR. Secondly, one may consider the emotions of, for example, guilt or shame held in raw form by a victim of assault, as somewhat misplaced; by contrast, the same emotions held by a traumatised offender, may be considered legitimate and even protective i.e. a deterrent for

committing further offences. Finally, for Mark trauma-resolution appeared to involve a move towards understanding of his circumstances at the time; acceptance that he was unable to change the past; that he was not the same person as he was when he committed the offences - but ultimately self-forgiveness. It is yet to be determined if trauma resolution for offence-related trauma differs markedly from other types of trauma. Clinical practice suggests that it does; however, this question would be best addressed by qualitatively interviewing offenders treated with EMDR in order to obtain valuable narrative information about the processes that they experienced as they moved towards trauma resolution. Together, these considerations raise the issue of whether the standard EMDR protocol is wholly suitable for the subtle differences that appear to characterise offence-related trauma, and whether there is scope for the development of a protocol for the treatment of this specific type of trauma.

In closing, results from the present case study open up a new avenue of research within the field of offender rehabilitation and the application of EMDR for the treatment of offence-related trauma. To date, although numerous factors have been identified as risk factors for sexual reoffending (e.g., inappropriate sexual interest; Hanson & Morton-Bourgon, 2005), and other variables have been identified by researchers as playing an important role in the ultimate success of group treatment (e.g., motivation to change; McMurrin & Ward, 2010; Pellissier, 2007), little focus has been paid to the identification of trauma related factors that may increase risk of reoffending and/or impact upon the successfulness of psychological group treatment. The present case study suggests that the presence of offence-related trauma may be one such factor that requires further attention from researchers.

Table 1: Pre-and post-EMDR Subjective Units of Distress (SUDs) and Validity of Cognition (VOC) (and related cognitions)

Traumatic event	Negative Cognition	SUD (rating 0-10)		Preferred cognition	VOC (rating 1-7)	
		Pre	Post		Pre	Post
Previous sexual offences	<i>"I am out of control"</i>	8	1	<i>"I can control myself"</i>	2	7

Table 2: Pre-and post-EMDR Impact of Events Scale-Revised

Psychometric Measure	Pre-treatment score	1-month follow up	3-month follow-up	12 month follow-up
Intrusion scale	1.37	0.37	0.37	0.5
Avoidance scale	1.75	0.62	0.12	0.12
Hyper-arousal scale	1.33	0.22	0	0.16
IES-R Total score	33	10	4	6

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders, DSM-IV-TR*. Washington DC: American Psychiatric Association.
- Adolphs, R., Tranel, D., Damasio, H., & Damasio, A. (1994). Impaired recognition of emotion in facial expressions following bilateral damage to the human amygdala. *Nature*, 372, 669 – 672. DOI: 10.1038/372669a0.
- Beech, A. R., & Fisher, D. (2011). *The way forward in sex offender treatment*. University of Birmingham: [Conference] New Directions in Sex Offender Practice, Birmingham, UK.
- Bisson, J., & Andrew, M., (2009). Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database of Systematic Reviews*, Issue 3, Article No. CD003388. DOI: 10.1002/14651858.CD003388.pub3.
- Collins, J.J. & Bailey, S. (1990). Traumatic stress disorder and violent behaviour. *Journal of Traumatic Stress*, 3, 203 – 220. DOI: 10.1007/BF00975146.
- Crisford, H., Dare, H. & Evangeli, M. (2008). Offence-related posttraumatic stress disorder (PSTD) symptomatology and guilt in mentally disordered violent and sexual offenders. *The Journal of Forensic Psychiatry and Psychology*, 19(1), 86-107. DOI: 10.1080/14789940701596673.
- de Jongh, A., Ten Broeke, E. & Renssen, M.R. (1999). Treatment of specific phobias with Eye Movement Desensitisation and Reprocessing (EMDR): Protocol, empirical status, and conceptual issues. *Journal of Anxiety Disorders*, 13, 69 – 85. DOI: 10.1016/S0887-6185(98)00040-1.
- de Roos, C., Greenwald, R., den Hollander-Gijsman, M., Noorthoorn, E., van Buuren, S., & de Jongh, A. (2011). A randomised comparison of cognitive behavioural therapy (CBT) and eye movement desensitisation and reprocessing (EMDR) in disaster

- exposed children. *European Journal of Psychotraumatology*, 2. DOI: 10.3402/ejpt.v2i0.5694.
- Doob, D. (1992). Female sexual abuse survivors as patients: avoiding retraumatization. *Archives of Psychiatric Nursing*, 6(4), 245-251. DOI: 10.1016/j.bbr.2011.03.031.
- Gray, N.S., Carman, N.G., Rogers, P., MacCulloch, M.J., Hayward, P. & Snowden, R.J. (2003). Post-traumatic stress disorder caused in mentally disordered offenders by the committing of a serious violent or sexual assault. *The Journal of Forensic Psychiatry & Psychology*, 14, 27-43. DOI: 10.1080/1478994031000074289.
- Hanson, R. K., & Morton-Bourgon, K. (2005). The characteristics of persistent sex offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology*, 73, 1154-1163.
- Hollin, C. R., & Palmer, E. J. (2006). *Offending Behaviour Programmes: Development, Application and Controversies*. Sussex UK: John Wiley & Sons.
- Hornsveld, H. K., Houtveen, J. H., Vroomen, M., Aalbers, I. K. D., & van den Hout, M. A. (2011). Evaluating the effect of eye movements on positive memories such as those used in resource development and installation. *Journal of EMDR Practice and Research*, 5, 146-155.
- Jaberghaderi, N., Greenwald, R., Rubin, A., Zand, S. O., & Dolatabadi, S. (2004). A comparison of CBT and EMDR for sexual abused Iranian girls. *Clinical Psychology and Psychotherapy*, 11, 358-368. DOI: 10.1002/cpp.395.
- Kubiak, S.P. (2004). The effects of PTSD on treatment adherence, drug relapse and criminal recidivism in a sample of incarcerated men and women. *Research of Social Work Practice*, 14(6), 424 – 433. DOI: 10.1177/1049731504265837.
- LeDoux, J. (2003). The emotional brain, fear, and the amygdala. *Cellular and Molecular Neurobiology*, 23(4-5), 727-738. DOI: 10.1023/A:1025048802629.

- McFarlane, A.C., Brookless, C., & Air, T. (2001). Post traumatic disorder in the general psychiatric inpatient population. *Journal of Traumatic Stress*, 14, 633 – 645. DOI: 10.1023/A:1013077702520.
- McMurrin, M., & Ward, T. (2010). Motivating offenders to change in therapy: An organising framework. *Legal and Criminological Psychology*, 9, 159-311. DOI: 10.1348/1355325041719365.
- Mueser, K.T., Rosenburg, S.D., Goodman, L.A. & Trumbetta, S.L. (2002). Trauma, PTSD, and the course of mental illness: an interactive model. *Schizophrenia Research*, 53(1-2), 123-143.
- National Institute for Clinical Excellence (2005). *Post traumatic stress disorder (PTSD); The management of adults and children in primary and secondary care*. London: NICE Guidelines.
- Payne, E., Watt, A., Rogers, P., & McMurrin, M. (2008). Offence characteristics, trauma histories, and post-traumatic stress disorder symptoms in life sentenced prisoners. *The British Journal of Forensic Practice*, 10(1), 17-25. DOI: 10.1108/14636646200800004.
- Pelissier, B. (2007). Treatment retention in a prison-based residential sex offender treatment program. *Sexual Abuse: A Journal of Research and Treatment*, 19, 333-346. DOI: 10.1177/107906320701900401.
- Pollock, P. H. (2000). Eye movement desensitization and reprocessing (EMDR) for post-traumatic stress disorder following homicide. *Journal of Forensic Psychiatry*, 11, 176-184. DOI: 10.1080/095851800362454.
- Popky, A. J. (2005). DeTUR, an urge reduction protocol for addictions and dysfunctional behaviors. In R. Shapiro (Ed.) *EMDR solutions: Pathways to healing* (pp. 167-188). New York: W W Norton & Co. pp. 360.
- Ricci, R. J. (2006). Trauma Resolution Using Eye Movement Desensitization and

- Reprocessing With an Incestuous Sex Offender An Instrumental Case Study. *Clinical Case Studies*, 5, 248-265.
- Ricci, R. J., Clayton, C. A., & Shapiro, F. (2006). Some effects of EMDR on previously abused child molesters: Theoretical reviews and preliminary findings. *Journal of Forensic Psychiatry and Psychology*, 17(4), 538-562. DOI: 10.1080/14789940601070431.
- Rogers, P., & Gray, N.S., Williams, T. & Kitchiner, N. (2000). Behavioral treatment of PTSD in a perpetrator of manslaughter: A single case study. *Journal of Traumatic Stress*, 13(3), 511-520. DOI: 10.1023/A:1007793510239.
- Seidler, G. H., & Wagner, F. E. (2006). Comparing the efficacy of EMDR and trauma-focussed cognitive behavioral therapy in the treatment of PTSD: A meta-analytic study. *Psychological Medicine*, 35, 1515-1522. DOI: 10.1017/S0033291706007963.
- Shapiro, F. (1995). *EMDR: Basic principles, protocols, and procedures*. New York: Guilford Press.
- Shapiro, F. (2001). *Eye movement desensitization and reprocessing: Basic principles, protocols and procedures* (2nd ed.). New York: Guilford Press.
- Shapiro, F. (2004). *Eye movement desensitization and reprocessing: Part 2 training manual of the two part basic training*. Watsonville, CA: EMDR Institute.
- Shapiro, E. (2009). EMDR treatment of recent trauma. *Journal of EMDR Practice and Research*, 3(3), 141-151. DOI: 10.1891/1933-3196.3.3.141.
- Solomon, R.M. & Rando, T.A. (2007). Utilization of EMDR in the treatment of grief and mourning. *Journal of EMDR Practice and Research*, 1(2), 109 – 117. DOI: 10.1891/1933-3196.1.2.109

Steiner, H., Garcia, I. G., & Matthews, Z. (1997). Post-traumatic stress in incarcerated juvenile delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 357 – 365. DOI: 10.1097/00004583-199703000-00014.

Thornton, D. (2002). Constructing and testing a framework for dynamic risk assessment. *Sexual Abuse: A Journal of Research and Treatment*, 14, 139-154. DOI: 10.1023/A:1014620214905.

Weiss, D. & Marmar, C. (1997). The Impact of Events Scale-Revised, in J. Wilson & T. Keane (Eds.) *Assessing Psychological Trauma and PTSD*. New York: Guildford.

Wolpe, J. (1990). *The practice of behavior therapy* (4th ed.). New York: Pergamon Press.