ARTICLE

Eye movement desensitisation and reprocessing: part 2 – wider use in stress and trauma conditions*

Tori-Rose Javinsky, Itoro Udo & Tuoyo Awani

SUMMARY

Eye Movement Desensitisation and Reprocessing (EMDR) is an established psychotherapy that utilises repetitive, bilateral stimulation, such as saccadic eye movements, to treat the symptoms associated with traumatic experiences. Much of the attention EMDR has received has focused on its use in treating post-traumatic stress disorder (PTSD), which has resulted in its inclusion in several treatment guidelines. There is, however, emerging evidence that suggests a promising role for EMDR in managing a wide range of other mental and physical health conditions. High-quality studies demonstrate the efficacy of EMDR in managing conditions such as anxiety disorders, obsessive–compulsive disorder, major depressive disorder and chronic pain. Preliminary studies have also investigated its use in conditions such as bipolar disorder, eating disorders, substance misuse, psychotic disorders and sleep disturbances. The major studies exploring these applications of EMDR, outside of PTSD, are reviewed in this article.

LEARNING OBJECTIVES

After reading this article you will be able to:

- list the variety of mental illnesses for which strong evidence exists to support the use of EMDR
- understand the specific applications of EMDR in affective, anxiety, psychotic and somatic disorders
- identify the areas in which further evidence is still needed to support the use of EMDR.

KEYWORDS

EMDR; eye movement desensitisation and reprocessing; trauma; post-traumatic stress disorder; stress.

In our previous article in *BJPsych Advances* (Udo 2022) we presented the process of conducting eye movement desensitisation and reprocessing (EMDR) therapy and discussed the approved indications for its use and evidence supporting EMDR for post-traumatic stress disorder (PTSD). In the present article, we discuss the various mental and associated physical health conditions for which EMDR may be useful. A key element of EMDR is that it views psychopathology through the adaptive information processing model, which suggests that mental illness can result from improperly processed trauma memories (Solomon 2008). EMDR is therefore a transdiagnostic intervention that can be used in many psychiatric disorders. The conditions chosen for discussion in this article are those underpinned by randomised controlled trials (RCTs) or where EMDR is included in treatment guidelines. It is hoped that readers will become aware that, apart from PTSD, EMDR may be used to improve the quality of treatment in various other conditions, both mental and physical. There are other conditions with only lower-level evidence, such as case reports, case series or expert opinions, but these are not the subject of this review.

Anxiety disorders

Panic disorder

Research investigating the efficacy of EMDR in treating anxiety disorders has largely focused on panic disorder, with several case studies, one controlled non-randomised trial and three RCTs supporting its use.

The case studies (Fernandez 2007; Bhagwagar 2016; Trlin 2021) have described EMDR as being effective in reducing symptoms associated with panic disorder.

In the non-randomised trial, by Faretta (2013), 19 participants with panic disorder with and without agoraphobia received 12 sessions of either EMDR or cognitive–behavioural therapy (CBT). Both EMDR and CBT were found to be effective, with no significant differences between the two therapies, aside from a lower frequency of panic attacks in EMDR-treated participants. These results were maintained at the 1-year follow-up.

In an RCT by Feske & Goldstein (1997), 43 people with panic disorder were randomly assigned to either six sessions of EMDR, six sessions of EMDR without the eye movements (eye fixation exposure

Tori-Rose Javinsky, MD, is a psychiatry resident in the University of Western Ontario programme and works in Victoria Hospital, London, Ontario, Canada. **Itoro Udo**, MBBS, MSc, FRCPsych, FRCPC, is a consultant psychiatrist in adult psychiatry at City Clinic & Wellness Center, London, Ontario, and Adjunct Professor in the Department of Psychiatry, University of Western Ontario, London, Ontario, Canada. He is a member of EMDR Canada and a former member of EMDR UK and Ireland. He uses EMDR therapy in his daily practice. **Tuoyo Awani**, MBBS, MRCPsych, is a consultant psychiatrist at Victoria Hospital, London, Ontario, and an Assistant Professor in the Department of Psychiatry, University of Western Ontario, London, Ontario, Canada.
Correspondence Itoro Udo. Email: dr_itoro@yahoo.com

First received 18 Aug 2021
Final revision 29 Apr 2022
Accepted 7 May 2022

*This article is a joint commission with CPD eLearning (https://elearninghub.rcpsych.ac.uk/product?catalog=237_CORE_LM_Overview_EMDR_2021)

https://doi.org/10.1192/bja.2022.31 Published online by Cambridge University Press

and reprocessing, EFER) or to a waiting list. Compared with the waiting list, EMDR resulted in significant reductions in panic and panic-related symptoms. When compared with EFER, EMDR was more effective in improving scores on two of five primary measures, specifically the Agoraphobia–Anticipated Panic-Coping Composite and General Anxiety–Fear of Panic Composite, as well as on secondary measures of depression and social adjustment; however, this difference did not remain significant at 3-month follow-up, suggesting that the eye movement component of EMDR might not be necessary for panic disorder. A subsequent RCT by Goldstein et al (2000) assigned 46 individuals with panic disorder with agoraphobia to one of three groups: EMDR, association and relaxation therapy (ART) or a waiting list. Compared with the waiting list, EMDR resulted in significant improvements on measures of severity of anxiety, panic disorder and agoraphobia but made no difference in the frequency of panic attacks or anxious cognitions. Furthermore, there were no significant differences between the EMDR and ART groups, a result that remained at 1-month follow-up. Following this, an RCT by Horst et al (2017) was more promising. A total of 84 participants with panic disorder were assigned to receive 13 weekly 60 min sessions of either CBT or EMDR. The results suggested non-inferiority of EMDR to CBT on two of three measures of panic disorder severity and on the measure of quality of life, while the third measure of panic disorder severity was inconclusive. The authors therefore concluded that EMDR proved to be as effective as CBT for treating people with panic disorder.

Specific phobias

Two RCTs have evaluated whether EMDR is an effective treatment for specific phobia. A study by Doering et al (2013) randomly assigned 31 individuals who met DSM-IV-TR criteria for dental phobia to either three EMDR sessions targeting memories of negative dental events or a waiting list. EMDR was associated with significant reductions in dental anxiety and avoidance behaviour, findings that were maintained at both the 3-month and 1-year follow-ups. After 1 year, 83.3% of the EMDR group were in regular dental treatment. An RCT by Triscari et al (2015) assessed the efficacy of CBT combined with EMDR in treating flight anxiety (fear of flying). They randomised 65 individuals to receive either CBT combined with systematic desensitisation, CBT combined with EMDR therapy or CBT combined with virtual reality exposure therapy. All three groups experienced significant decreases on scales measuring flight anxiety, with results maintained at 1-year follow-up and no significant differences between groups.

Generalised anxiety disorder

Presently, no RCTs have evaluated the use of EMDR in generalised anxiety disorder (GAD). In two preliminary studies (Gauvreau 2008; Farima 2015), small samples of individuals with GAD completed several sessions of EMDR. Both studies found a significant reduction in symptoms of anxiety and excessive worry, which were maintained at 1- and 2-month follow-up respectively. Furthermore, Gauvreau et al reported that two of their four participants achieved full remission from GAD, and Farima et al found that EMDR increased tolerance of uncertainty.

Symptoms of anxiety disorder

Finally, Yunitri et al (2020) completed a meta-analysis to evaluate the overall effectiveness of EMDR in reducing symptoms of anxiety disorder. Their results, having analysed 17 studies, showed that EMDR was associated with a significant reduction in anxiety, panic, phobia and behavioural/somatic symptoms. Subgroup analysis revealed greater effects of EMDR when compared with passive control conditions. These effects were found not to differ significantly with the duration or number of sessions. The authors thus concluded that EMDR is efficacious in reducing symptoms associated with anxiety disorder.

Obsessive–compulsive disorder

EMDR has not been recommended as a treatment for obsessive–compulsive disorder (OCD) in any major guidelines, and research into its use is still in its early stages. Marsden et al (2018a) performed an RCT comparing EMDR and the recommended treatment, CBT. Their study randomised 55 individuals to each treatment. Both treatments had comparable completion rates and clinical outcomes, with no significant differences between the groups. Participants were recruited from a primary care mental health service that routinely offered 16–20 sessions of CBT, suggesting that their psychopathology may not have been severe. The basis for the application of EMDR was Marr's (2012) hypothesis that it can be used to process the fears and obsessive behaviours of OCD, thereby reducing distress in the present. He also hypothesised that EMDR could be used to process emotions associated with the trigger event or underlying event linked to the onset of illness. Marsden et al followed Marr's EMDR sequential protocol, which involved processing current triggers for obsessions and compulsions, generating a psychological belief of future success

BJPsych Advances (2022), page 1 of 10 doi: 10.1192/bja.2022.31

and then processing any past disturbing events. Their study is limited by its sample size and a brief follow up period of 6 months.

Nazari et al's (2011) RCT compared EMDR with treatment using citalopram, a selective serotonin reuptake inhibitor (SSRI). In their study, 90 individuals were randomly assigned to the two groups and received the interventions for 12 weeks. Comparisons were made before and after, which showed a significant post-treatment drop in symptoms in the EMDR group compared with the citalopram group. The authors concluded that both methods brought about improvement in obsessive–compulsive symptoms, with short-term EMDR having better outcomes. Their study was limited by a short follow-up of participants, low dose of citalopram (20 mg daily) and no record of side-effects of interventions. In addition, 17 participants from the citalopram group and 13 from the EMDR group were lost to follow-up and not included in the final analysis. The range or median number of sessions required for EMDR therapy was not clear.

Böhm (2019) carried out a narrative review of studies of EMDR treatment of OCD. It included the two studies above as the only randomised trials available at the time. In addition, case studies were reviewed which showed the successful integration of EMDR with CBT strategies for treatment of refractory OCD. Furthermore, a small study by Keenan et al (2018) showed that EMDR was effective in treating people with OCD who were still symptomatic after having previously undergone CBT. Eight patients who had not benefitted from exposure and response prevention therapy completed eight sessions of EMDR, after which they demonstrated a decrease in their OCD symptoms both 1 and 3 months later; however, the authors did not do any formal statistical testing to be able to comment on significance.

Marsden et al (2018b) considered the experiences of a sample of 24 participants in their above-mentioned RCT comparing EMDR and CBT (Marsden 2018a). A thematic analysis of interviews showed that half of the 14 in their sample who had received EMDR struggled to recall the name of the treatment and its rationale; however, many felt that the preparatory phases before actual processing were of good use. Some of the EMDR participants were able to work satisfactorily with the bilateral stimulation device, but some complained of experiencing drowsiness, exhaustion and nausea. Other difficulties that EMDR participants encountered were inability to locate an OCD trigger memory, inability to relive real-world anxiety in the therapy space and exacerbation of checking behaviours after finishing therapy. Difficulties described by participants in the CBT group included problems performing exposures at the beginning of therapy and during graded activities; finding the sessions too structured and inflexible; and inability to express their feelings, leading to eventual drop out from CBT. The authors thought that the acceptability and tolerability of treatment methods depended largely on how credible patients found the rationale behind each treatment. In his seminal book *Persuasion and Healing: A Comparative Study of Psychotherapy*, Frank (1961) asserts that one of the common characteristics of efficacious psychotherapies is the use of rationales that provide reasonable explanations for patients' symptoms and proposes procedures for resolving them.

Mood disorders

Depression

Multiple RCTs assessing EMDR as a treatment for depression have been conducted, with sessions focusing on reprocessing negative memories of stressful life experiences that contributed to the development of depression or negative cognitions associated with reduced functioning. The results of these studies generally support the use of EMDR in treating depression, both as a stand-alone therapy and in addition to other psychotherapies or antidepressant medication.

Hase et al (2015) compared outcomes for 16 in-patients with depression who received EMDR plus treatment as usual with a group of 16 controls matched for diagnosis, degree of depression, gender, age and time of admission who received treatment as usual only. Treatment as usual consisted of individual psychodynamic psychotherapy, group therapy sessions and five group sessions of psychoeducation. The EMDR group had a greater overall reduction in depressive symptoms, with 68% of participants achieving full remission of their symptoms. At the 1-year follow-up, those who received EMDR reported fewer problems related to depression and fewer relapses.

Gauhar (2016) randomly assigned 26 individuals with depression to either 6–8 sessions of EMDR or a waiting-list control. Results showed significant improvements on all measures of depressive symptoms and quality of life following EMDR therapy, with the number and strength of negative cognitions markedly decreased post-treatment. These results were maintained at 3-month follow-up.

A second RCT by Hase et al (2018) again tested whether adding EMDR to treatment as usual would achieve superior results. The authors randomised 30 in-patients with depression to receive EMDR plus treatment as usual or treatment as usual only. Treatment as usual consisted of psychodynamic or behavioural group therapy, standard

individual therapy and antidepressant medication. Patients who received EMDR plus treatment as usual had significantly better scores on the Beck Depression Inventory-II and the Global Severity Index following treatment. Furthermore, 7 out of the 14 patients in the EMDR group achieved full symptom remission, compared with only 4 out of the 16 in the treatment-as-usual only group.

Lastly, an RCT by Ostacoli et al (2018) compared EMDR with CBT to assess EMDR's efficacy as an adjunct to antidepressant medication. Eighty-two individuals with depression were randomised to receive 12–18 sessions of either EMDR or CBT in addition to treatment as usual with antidepressant medication. Both groups showed a reduction in depressive symptoms with no significant differences between the two groups, effects that were maintained at the 6-month follow-up.

Overall, the results of these studies suggest that, either alone or as an adjunct, EMDR is a promising option for the treatment of depression, although more research is needed to appropriately integrate it into treatment guidelines.

Bipolar disorder

At present, only one RCT has investigated the use of EMDR in bipolar disorder. Novo et al (2014) randomised 20 individuals with DSM-IV bipolar I or II disorder with subsyndromal mood symptoms and a history of traumatic events to receive either 14–18 sessions of EMDR over 12 weeks or treatment as usual. Those who received EMDR showed a statistically significant improvement in depressive and hypomanic symptoms, symptoms of trauma, and the impact of trauma on functioning compared with the treatment-as-usual group; however, this effect was only partly maintained in trauma impact at the 24-week follow-up. This pilot study therefore suggested that EMDR may be an effective intervention for subsyndromal mood and trauma symptoms in people with bipolar disorder.

Dissociative disorders

Guidelines published by the International Society for the Study of Trauma and Dissociation (2011) identify EMDR as one of the treatments that may be helpful in dissociative identity disorder (DID); however, this recommendation is based on limited, lower-level studies. Included in the guidelines is a paper by Lazrove & Fine (1996) which presents a comprehensive description of how EMDR may be used in DID using a case report. Twombly (2000) also describes how EMDR may be adapted for people with DID. Paulsen (1995) uses cases to illustrate situations where EMDR should not be used or should be cautiously used in people with DID.

The use of EMDR in DID is highly specialised and requires specific training. The majority of evidence for treating this disorder with EMDR takes the form of expert opinions presented at conferences and in the grey literature.

Eating disorders

Traumatic life experiences are known to be one of many etiological factors that may trigger eating disorders. Thus, EMDR may have a role in the treatment of eating disorders; however, the current evidence comprises only case studies and one randomised experimental trial.

Four case studies have provided preliminary evidence supporting EMDR's use. Dziegielewski & Wolfe (2000) explored the potential of EMDR as a brief intervention for low self-esteem and body image disturbances. The authors described a young female with a history of bulimia-like behaviour who, following completion of two EMDR sessions, showed significant improvements in scores on the Self-Esteem Rating Scale and the Body Image Avoidance Questionnaire. A case study by Halvgaard (2015) examined whether EMDR could reduce symptoms associated with emotional eating. A 55-year-old woman with problems with emotional eating and feelings of loss of control over food underwent six weekly sessions of EMDR. Her treatment followed a specialised EMDR protocol, the adjusted Desensitization of Triggers and Urge Reprocessing (DeTUR™) protocol (Popky 2005). She experienced an overall positive change in eating behaviour and affect regulation during triggering situations, results that were maintained at 3- and 6-month follow-up. Zaccagnino et al (2017) described the case of a 17-year-old in-patient with unremitting anorexia nervosa who received twice-weekly EMDR sessions for 6 months, with a focus on reprocessing relational traumas. At the end of treatment, the young woman's BMI had increased from 14 to 21.5 and she no longer met criteria for anorexia nervosa. Furthermore, she reported an increase in self-confidence, with results maintained at 12- and 24-month follow-up. Lastly, Yaşar et al (2019) summarised the cases of two young girls with avoidant/restrictive food intake disorder as a consequence of traumatic events, who were treated with seven sessions of EMDR therapy combined with nine sessions of CBT. Both girls experienced significant reductions in associated symptoms of anxiety and depression and were subsequently able to eat a greater variety of foods.

In the randomised experimental trial by Bloomgarden & Calogero (2008), 43 women receiving standard residential treatment for eating disorders (SRT) were compared with 43 women

BJPsych Advances (2022), page 1 of 10 doi: 10.1192/bja.2022.31

receiving SRT in addition to EMDR (SRT + EMDR) on measures of negative body image and other clinical outcomes. Those in the SRT + EMDR group received one or two EMDR sessions per week during their treatment stay, with a specific focus on body image problems. Those in the SRT + EMDR group reported less distress about negative body image memories and lower body dissatisfaction at post-treatment, 3-month and 12-month follow-up, compared with the SRT only group.

Although further research is still necessary, the preliminary findings of these studies imply a promising potential for the use of EMDR in treating eating disorders.

Substance misuse and addictions

Current interventions in addictions are limited by high relapse rates and low retention numbers. They are mostly based on self-control strategies that employ cognitive–behavioural approaches. These are not always appropriate or preferred by patients and there is a need to expand treatment strategies. EMDR offers various possibilities. It can be used to treat PTSD that is comorbid with addictions or underlying traumas associated with the onset of addiction, which is referred to as trauma-focused EMDR. There is also an adaptation of EMDR to process non-trauma memory representation of the addiction, referred to as the addiction-focused approach. These two approaches can be combined.

Markus & Hornsveld (2017) performed a broad critical review of the literature on how EMDR is used in addictions. Their review comprised 18 studies of varying types, which are mostly lower-quality evidence, but include one RCT. They state that the current literature shows that EMDR's use in addictions is promising, but note that despite 20 years of research and development, addiction-focused EMDR approaches are still largely under-researched. In particular, they felt that EMDR may be useful in reducing the intensity of substance misuse-related imagery and craving.

Included in Markus & Hornsveld's review is Hase et al's (2008) RCT, in which 34 individuals with alcohol dependence were randomised to treatment as usual (TAU) or treatment as usual plus EMDR (TAU + EMDR). EMDR treatment focused on the addiction memory, which includes preparatory behaviour, substance effects (substance use) and loss of control. The TAU + EMDR group showed a significant reduction in alcohol craving post-treatment and at 1-month follow-up, whereas the TAU group did not. A specialised EMDR protocol, the craving extinguished (CravEx) protocol, was used.

Meysami-Bonab et al (2012) conducted an RCT on individuals with drug addictions attending an 'addiction treatment camp', in which 30 participants were randomised to either eight sessions of EMDR or no treatment. They had completed a period of detoxification before the interventions. They were assessed, using a questionnaire, for emotion regulation and emotion recognition. Those who received EMDR were found to have increased positive emotion regulation and emotion recognition in the post-test phase and their scores for negative emotion regulation were significantly improved. Their study was limited by lack of follow-up and the use of a single therapist and assessor. However, the finding of increased positive emotion regulation and recognition increases the possibility of recovery.

Sleep disturbances

EMDR is a recommended treatment in the best practice guide for the treatment of nightmare disorder in adults (Aurora 2010) commissioned by the American Academy of Sleep Medicine. This review of evidence recognises that it is based on two lower-level studies (Silver 1995; Raboni 2006). It is thought that the efficacy of EMDR in nightmare disorder is based on its ability to induce the processing of disturbing memories and experiences by stimulating neural mechanisms that are similar to those activated during rapid eye movement (REM) sleep (Stickgold 2008; Aurora 2010).

Psychosis

Although EMDR may not cure psychosis, it may have a role in ameliorating psychotic symptoms. Adams et al (2020) performed a comprehensive systematic review of the use of EMDR in psychosis. They found six studies: one RCT, two case series, one case report and two pilot studies, one of which used an RCT design and the other an open trial with one arm. Their total sample comprised 236 adults, with individual study sample size ranging from 27 to 155. Participants had a range of psychotic disorders: schizophrenia, schizoaffective disorder, delusional disorders (including olfactory reference syndrome), bipolar disorder with psychotic features, and psychosis not otherwise specified. The number of EMDR sessions received ranged from one to ten. The authors found that the application of EMDR in psychosis was associated with reductions in delusional thinking and negative symptoms of psychosis, as well as improved social and general functioning, longer remission, fewer readmissions to hospital, reduction in use of mental health services and reduction in use of medications. These benefits were maintained at 10-year follow-up. There were mixed findings for the

management of auditory hallucinations and paranoid thinking.

Conversely, in a study involving 40 individuals with schizophrenia, Kim et al (2010) found that EMDR was no more effective in reducing symptoms associated with schizophrenia, anxiety and depression than progressive muscle relaxation (PMR) therapy or treatment as usual. However, effect size for negative symptoms was large for the EMDR group compared with the control groups (ES = 0.60 for EMDR, ES = 0.39 for PMR and ES = 0.21 for treatment as usual).

Of note, a Japanese researcher (Kikuchi 2008) published the earliest peer-reviewed article detailing the application of EMDR therapy to schizophrenia. This work has not yet been published in English. Its model and concepts have borrowed much from how CBT is applied in schizophrenia. These are described by Miller (2015).

Trauma has been shown to be a significant predictor of psychosis (Read 2005; Shevlin 2007), meaning that screening and treatment of trauma symptoms should be an important consideration in individuals with psychotic disorders. To this end, two studies have examined the safety and efficacy of using EMDR to treat PTSD in patients with psychosis. In a feasibility study, de Bont et al (2013) found that 7 of 10 individuals treated with either EMDR or prolonged exposure therapy no longer met the diagnostic criteria for PTSD at follow-up. No serious adverse events were reported and participants did not exhibit any worsening of delusions, hallucinations, general psychopathy or social functioning. However, participants were followed up for only 3 months, the sample was small, and the study focused on auditory hallucinations, not including other types of hallucination. The study was also limited by the lack of a control group and the use of clinical chart diagnosis to determine lifetime diagnosis. An RCT by van den Berg et al (2015) also suggested that EMDR is safe and effective in treating PTSD in people with psychosis. They randomised 155 patients to receive either prolonged exposure therapy or EMDR or to a waiting list. Participants in both treatment conditions experienced greater reductions in PTSD symptoms than those on the waiting list. Importantly, no severe adverse events occurred as a result of the interventions. In their 12-month follow-up study, van den Berg et al (2018) showed that positive effects were maintained for reductions in PTSD symptoms, depression and paranoid-referential thinking and for remission from schizophrenia in both treatment groups. The authors therefore concluded that their results suggested that trauma-focused therapies such as EMDR have long-term neutral to positive effects on symptoms of PTSD, depression and psychosis in people with psychotic disorders.

The specific ways in which EMDR was employed in the treatment processes described above were to target and process the traumatic memories that caused comorbid PTSD (van den Berg 2012; de Bont 2013; Laugharne 2014; Adams 2020), to target and process hallucinations associated with negative beliefs about self and others (Kratzer 2017) and to target life experiences that triggered olfactory reference syndrome (McGoldrick 2008).

Despite this exciting potential for the application of EMDR in psychosis, existing studies are limited by lower sample sizes and power, with their study designs making the overall quality of evidence low. Preliminary guidelines on the skilled use of EMDR in the management of psychosis have been published by a team of subject experts (van den Berg 2013).

Somatoform disorders, including chronic pain syndromes

Medically unexplained symptoms

van Rood & de Roos (2009) carried out a systematic review of the use of EMDR in medically unexplained or functional syndromes. They felt this research area was still in its 'infancy' and more studies were needed; however, they uncovered 16 studies, including 1 RCT, 2 uncontrolled clinical studies, 7 case series and 6 case reports. The physical symptoms reported were chronic pain, phantom limb pain and psychogenic non-epileptic seizures. Others conditions included body dysmorphic disorder, myoclonic movement, olfactory reference syndrome, stress-related dermatological disorders and chronic fatigue syndrome. Of the 46 participants for whom comorbidity information was available, 14 (30%) had at least one comorbid disorder; 11 (24%) had PTSD, 9 (20%) had major depression and 2 had mixed anxiety and depression. The rationale for the use of EMDR was often not explicitly stated in the studies. It was thought that in most studies, EMDR was used because stressful or traumatic events were assumed to be indicated in the aetiology and maintenance of the medically unexplained symptoms (van Rood 2009). EMDR was also used because particular medically unexplained symptoms appeared similar to those in PTSD but with symptoms displayed in specific sensory modalities. The number of sessions ranged from 1 to 72 and the duration of therapy ranged from 1 week to 18 months. After treatment with EMDR, not only did the intensity of physical symptoms reduce but psychological symptoms also decreased, with results maintained at follow-up.

Chronic pain syndromes, including phantom limb pain

Two systematic reviews have evaluated the current body of literature on the use of EMDR in treating chronic pain syndromes. Tesarz et al (2014) found two RCTs and multiple observational studies assessing phantom limb pain, headache, musculoskeletal pain and fibromyalgia. The two trials showed significant improvements in pain intensity following EMDR treatment, with high effect sizes. Effect sizes in the observational studies, however, varied considerably in measuring reductions in pain intensity and improvements in disability, depressive symptoms and anxiety. Follow-up assessments generally found improvements to be maintained over time. A more recent review by Tefft & Jordan (2016) included three RCTs and multiple uncontrolled clinical studies and case series. Most of these studies reported significant improvements on pain and psychological indices following treatment with EMDR. However, the authors cautioned that most of the evidence currently comes from case studies and that the included RCTs have limited applicability, as one provided only a single session of EMDR and the other focused on the management of acute pain in migraines. Of the chronic pain conditions studied, there appears to be the greatest amount of support for the use of EMDR in phantom limb pain (Wilensky 2006; Schneider 2007, 2008; Russell 2008; de Roos 2010). Indeed, Tefft & Jordan (2016) suggested that phantom limb pain appears to be particularly conducive to successful treatment with EMDR, with 92% of individuals experiencing moderate to substantial improvement in pain severity along with improvement in anxiety, PTSD and depression. One additional RCT has been published since these reviews. Gerhardt et al (2016) randomised 40 participants with chronic, non-specific back pain who reported previous experiences of psychological trauma to either receive 10 sessions of pain-focused EMDR in addition to treatment as usual or treatment as usual alone. Comparisons of pain intensity and disability post-treatment between the groups suggested significant improvements in the EMDR group, with moderate to large effect sizes. Furthermore, almost 50% of participants in the EMDR group rated their symptoms as either 'improved' or 'very much improved', compared with none in the control group.

Summary

Although most studies thus far have found EMDR to be a safe and effective treatment for a variety of somatoform and chronic pain syndromes, the majority of the literature has been case studies and so there is currently insufficient evidence for definite treatment recommendations.

Summary and conclusions

Apart from its approved use for treating PTSD, EMDR has been shown to be useful in the treatment of a variety of affective and non-affective conditions. Specifically, this review has presented high-quality evidence supporting the use of EMDR in the management of panic disorder, specific phobia, OCD and major depressive disorder. It has been shown to be potentially useful in the management of bipolar affective disorder, although more evidence is needed. Moreover, its usefulness is not limited to these conditions. Early evidence points to the potential usefulness of EMDR in the management of eating disorders and substance misuse. EMDR is recommended, by subject experts, for the treatment of dissociative identity disorder and nightmare disorder. It has also been found to be helpful for individuals suffering from complex disorders such as somatoform disorders and chronic pain syndromes. The mechanisms by which it helps in these latter conditions are less clear, but they appear to require an increased number of sessions and a longer duration of treatment compared with PTSD.

Although EMDR used to be considered unsuitable for psychosis, evolving evidence supports its safe use in some cases. This use of EMDR is based on several concepts. The adverse early childhood experiences of many people with psychosis constitute unresolved trauma. This trauma is often an important aspect of their illness, including triggers for the onset of psychosis, the resolution of which improves symptoms. Furthermore, the events of having a psychotic breakdown and/or being treated in mental health services are potentially traumatic in themselves and may in some cases lead to post-traumatic stress symptoms. It is now acknowledged that psychoses and PTSD may occur comorbidly, influencing one another and leading to ongoing traumatisation (Marconi 2018).

The evidence supporting the use of EMDR in treating PTSD is incontrovertible, especially in adults, but this review highlights areas where further research is needed. Furthermore, there is a sense of urgency, given the ubiquity of mental illnesses such as anxiety and depressive disorders and the complexity of disorders such as eating, substance use and somatoform disorders. The outcomes of studies presented in this review are indeed encouraging. Hence, there is promise that treatment guidelines may be expanded and it is our hope that this article enlightens clinicians to consider these possibilities and advocate for services that can deliver these interventions for the good and well-being of patients.

MCQ answers
1 e 2 e 3 e 4 e 5 c

Acknowledgements

We are grateful the Francine Shapiro (Electronic) Library of the EMDR International Association; the Mental Health Library at Parkwood Institute, St Joseph's Healthcare London, Ontario; and the library services of the University of Western Ontario, Canada. We thank Alexandra Richman, EMDR Approved Trainer and Approved Consultant (UK), for her practical support, and consultant psychiatrist Dr Carol McDaniel for her helpful comments on our draft paper.

Author contributions

All co-authors made equal contributions to the conception and design of the work and the acquisition, analysis or interpretation of data. All were also involved in drafting the work and revising it critically for important intellectual content. All co-authors gave final approval of the version to be published and agree to be accountable for all aspects of the work.

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Declaration of interest

I.U. is a member of the *BJPsych Advances* editorial board and did not take part in the review or decision-making process of this article.

References

Adams R, Ohlsen S, Wood E (2020) Eye movement desensitization and reprocessing (EMDR) for the treatment of psychosis: a systematic review. *European Journal of Psychotraumatology*, **11**(1): 1711349.

Aurora RN, Zak RS, Auerbach SH, et al (2010) Best practice guide for the treatment of nightmare disorder in adults. *Journal of Clinical Sleep Medicine*, **6**: 389–401.

Bhagwagar H (2016) EMDR in the treatment of panic disorder with agoraphobia: a case description. *Journal of EMDR Practice and Research*, **10**: 256–74.

Bloomgarden A, Calogero RM (2008) A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. *Eating Disorders*, **16**: 418–27.

Böhm KR (2019) EMDR's efficacy for obsessive compulsive disorder. *Journal of EMDR Practice and Research*, **13**: 333–6.

de Bont PAJM, Van Minnen A, De Jongh A (2013) Treating PTSD in patients with psychosis: a within-group controlled feasibility study examining the efficacy and safety of evidence-based PE and EMDR protocols. *Behavior Therapy*, **44**: 717–30.

de Roos C, Veenstra A, de Jongh A, et al (2010) Treatment of chronic phantom limb pain using a trauma-focused psychological approach. *Pain Research and Management*, **15**: 65–71.

Doering S, Ohlmeier MC, de Jongh A, et al (2013) Efficacy of a trauma-focused treatment approach for dental phobia: a randomized clinical trial. *European Journal of Oral Sciences*, **121**: 584–93.

Dziegielewski SF, Wolfe P (2000) Eye movement desensitization and reprocessing (EMDR) as a time-limited treatment intervention for body image disturbance and self-esteem. *Journal of Psychotherapy in Independent Practice*, **1**(3): 1–16.

Faretta E (2013) EMDR and cognitive behavioral therapy in the treatment of panic disorder: a comparison. *Journal of EMDR Practice and Research*, **8**: E52–66.

Farima R, Dowlatabadi S, Behzadi S (2015) The effectiveness of eye movement desensitization and reprocessing (EMDR) in reducing pathological worry in patients with generalized anxiety disorder: a preliminary study. *Archives of Psychiatry and Psychotherapy*, **17**: 33–43.

Fernandez I, Faretta E (2007) Eye movement desensitization and reprocessing in the treatment of panic disorder with agoraphobia. *Clinical Case Studies*, **6**: 44–63.

Feske U, Goldstein AJ (1997) Eye movement desensitization and reprocessing treatment for panic disorder: a controlled outcome and partial dismantling study. *Journal of Consulting and Clinical Psychology*, **65**: 1026–35.

Frank JD (1961) *Persuasion and Healing: A Comparative Study of Psychotherapy*. John Hopkins University Press.

Gauhar YWM (2016) The efficacy of EMDR in the treatment of depression. *Journal of EMDR Practice and Research*, **10**: 59–69.

Gauvreau P, Bouchard S (2008) Preliminary evidence for the efficacy of EMDR in treating generalized anxiety disorder. *Journal of EMDR Practice and Research*, **2**: 26–40.

Gerhardt A, Leisner S, Hartmann M, et al (2016) Eye movement desensitization and reprocessing vs. treatment-as-usual for non-specific chronic back pain patients with psychological trauma: a randomized controlled pilot study. *Frontiers in Psychiatry*, **7**: 201.

Goldstein AJ, De Beurs E, Chambless DL, et al (2000) EMDR for panic disorder with agoraphobia: comparison with waiting list and credible attention-placebo control conditions. *Journal of Consulting and Clinical Psychology*, **68**: 947–56.

Halvgaard K (2015) Single case study: does EMDR psychotherapy work on emotional eating? *Journal of EMDR Practice and Research*, **9**: 188–97.

Hase M, Schallmayer S, Sack M (2008) EMDR reprocessing of the addiction memory: pretreatment, posttreatment, and 1-month follow-up. *Journal of EMDR Practice and Research*, **2**: 170–9.

Hase M, Balmaceda UM, Hase A, et al (2015) Eye movement desensitization and reprocessing (EMDR) therapy in the treatment of depression: a matched pairs study in an inpatient setting. *Brain and Behavior*, **5**(6): e00342.

Hase M, Plagge J, Hase A, et al (2018) Eye movement desensitization and reprocessing versus treatment as usual in the treatment of depression: a randomized-controlled trial. *Frontiers in Psychology*, **9**: 1384.

Horst F, den Oudsten B, Zijlstra W, et al (2017) Cognitive behavioral therapy vs. eye movement desensitization and reprocessing for treating panic disorder: a randomized controlled trial. *Frontiers in Psychology*, **8**: 1409.

International Society for the Study of Trauma and Dissociation (2011) Guidelines for treating dissociative identity disorder in adults, third revision. *Journal of Trauma and Dissociation*, **12**: 115–87.

Keenan P, Farrell D, Keenan L, et al (2018) Treating obsessive compulsive disorder (OCD) using eye movement desensitisation and reprocessing (EMDR) therapy: an ethno-phenomenological case series. *International Journal of Psychotherapy*, **22**: 74–91.

Kikuchi A (2008) [Application of EMDR for schizophrenia]. *Clinical Psychology: Various Aspects* [in Japanese], **27**: 317–24.

Kim D, Choi J, Kim SH, et al (2010) A pilot study of brief eye movement desensitization and reprocessing (EMDR) for treatment of acute phase schizophrenia. *Korean Journal of Biological Psychiatry*, **17**: 94–102.

Kratzer L, Heinz P, Schennach R (2017) Significant improvement of post-traumatic stress disorder and psychotic symptoms after inpatient eye movement desensitization and reprocessing treatment: a case report with 6-month follow-up. *Indian Journal of Psychiatry*, **59**: 389–90.

Laugharne R, Marshall D, Laugharne J, et al (2014) A role for EMDR in the treatment of patients suffering from a psychosis: four vignettes. *Journal of EMDR Practice and Research*, **9**: e46–51.

Lazrove S, Fine CG (1996) The use of EMDR in patients with dissociative identity disorder. *Dissociation*, **9**: 289–99.

Marconi M, Polidoro A (2018) Some considerations about EMDR and psychosis. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*, **15**: 226–9.

Markus W, Hornsveld HK (2017) EMDR interventions in addiction. *Journal of EMDR Practice and Research*, **11**: 3–29.

Marr J (2012) EMDR treatment of obsessive-compulsive disorder: preliminary research. *Journal of EMDR Practice and Research*, **6**: 2–15.

Marsden Z, Lovell K, Blore D, et al (2018a) A randomized controlled trial comparing EMDR and CBT for obsessive–compulsive disorder. *Clinical Psychology and Psychotherapy*, **25**(1): e10–8.

Marsden Z, Teahan A, Lovell K, et al (2018b) Patients' experiences of cognitive behavioural therapy and eye movement desensitisation and reprocessing as treatments for obsessive-compulsive disorder. *Counselling and Psychotherapy Research*, **18**: 251–61.

McGoldrick T, Begum M, Brown KW (2008) EMDR and olfactory reference syndrome a case series. *Journal of EMDR Practice and Research*, **2**: 63–8.

Meysami-Bonab S, Abolghasemi A, Sheikhian M, et al (2012) The effectiveness of eye movement desensitization and reprocessing therapy on the emotion regulation and emotion recognition of addicted individuals. *Zahedan Journal of Research in Medical Sciences*, **14**(10): 33–7.

Miller PW (2015) *EMDR Therapy for Schizophrenia and Other Psychoses*. Springer Publishing Company.

Nazari H, Momeni N, Jariani M, et al (2011) Comparison of eye movement desensitization and reprocessing with citalopram in treatment of obsessive-compulsive disorder. *International Journal of Psychiatry in Clinical Practice*, **15**: 270–4.

Novo P, Landin-Romero R, Radua J, et al (2014) Eye movement desensitization and reprocessing therapy in subsyndromal bipolar patients with a history of traumatic events: a randomized, controlled pilot-study. *Psychiatry Research*, **219**: 122–8.

Ostacoli L, Carletto S, Cavallo M, et al (2018) Comparison of eye movement desensitization reprocessing and cognitive behavioral therapy as adjunctive treatments for recurrent depression: the European Depression EMDR Network (EDEN) randomized controlled trial. *Frontiers in Psychology*, **9**: 74.

Paulsen S (1995) Eye movement desensitization and reprocessing: its cautious use in the dissociative disorders. *Dissociation*, **13**: 32–44.

Popky AJ (2005) DeTUR, an urge reduction protocol for addictions and dysfunctional behaviors. In *EMDR Solutions: Pathways to Healing* (ed R Shapiro): 167–88. WW Norton.

Raboni MR, Tufik S, Suchecki D (2006) Treatment of PTSD by eye movement desensitization reprocessing (EMDR) improves sleep quality, quality of life, and perception of stress. *Annals of the New York Academy of Sciences*, **1071**: 508–13.

Read J, van Os J, Morrison AP, et al (2005) Childhood trauma, psychosis and schizophrenia: a literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica*, **112**: 330–50.

Russell MC (2008) Treating traumatic amputation-related phantom limb pain. *Clinical Case Studies*, **7**: 136–53.

Schneider J, Hofmann A, Rost C, et al (2007) EMDR and phantom limb pain: theoretical implications. *Journal of EMDR Practice and Research*, **1**: 31–45.

Schneider J, Hofmann A, Rost C, et al (2008) EMDR in the treatment of chronic phantom limb pain. *Pain Medicine*, **9**: 76–82.

Shevlin M, Dorahy MJ, Adamson G (2007) Trauma and psychosis: an analysis of the national comorbidity survey. *American Journal of Psychiatry*, **164**: 166–9.

Silver SM, Brooks A, Obenchain J (1995) Treatment of Vietnam war veterans with PTSD: a comparison of eye movement desensitization and reprocessing, biofeedback, and relaxation training. *Journal of Traumatic Stress*, **8**: 337–42.

Solomon RM, Shapiro F (2008) EMDR and the adaptive information processing model potential mechanisms of change. *Journal of EMDR Practice and Research*, **2**: 315–25.

Stickgold R (2008) Sleep-dependent memory processing and EMDR action. *Journal of EMDR Practice and Research*, **2**: 289–99.

Tefft AJ, Jordan IO (2016) Eye movement desensitization reprocessing as treatment for chronic pain syndromes: a literature review. *Journal of the American Psychiatric Nurses Association*, **22**: 192–214.

Tesarz J, Leisner S, Gerhardt A, et al (2014) Effects of eye movement desensitization and reprocessing (EMDR) treatment in chronic pain patients: a systematic review. *Pain Medicine*, **15**: 247–63.

Triscari MT, Faraci P, Catalisano D, et al (2015) Effectiveness of cognitive behavioral therapy integrated with systematic desensitization, cognitive behavioral therapy combined with eye movement desensitization and reprocessing therapy, and cognitive behavioral therapy combined with virtual reality expo. *Neuropsychiatric Disease and Treatment*, **11**: 2591–8.

Trlin I, Hasanovic M (2021) EMDR treatment of panic disorder with agoraphobia: case report. *Psychiatria Danubina*, **33**: S59–64.

Twombly JH (2000) Incorporating EMDR and EMDR adaptations into the treatment of clients with dissociative identity disorder. *Journal of Trauma and Dissociation*, **1**: 61–81.

Udo I, Javinsky T-R, Awani T (2022) Eye movement desensitisation and reprocessing: part 1 – theory, procedure and use in PTSD. *BJPsych Advances*, in press.

van den Berg DPG, van der Gaag M (2012) Treating trauma in psychosis with EMDR: a pilot study. *Journal of Behavior Therapy and Experimental Psychiatry*, **43**: 664–71.

van den Berg DPG, van der Vleugel BM, Staring ABP, et al (2013) EMDR in psychosis: guidelines for conceptualization and treatment. *Journal of EMDR Practice and Research*, **7**: 208–24.

van den Berg DPG, de Bont PAJM, van der Vleugel BM, et al (2015) Prolonged exposure vs eye movement desensitization and reprocessing vs waiting list for posttraumatic stress disorder in patients with a psychotic disorder. *JAMA Psychiatry*, **72**: 259–67.

van den Berg D, de Bont PAJM, van der Vleugel BM, et al (2018) Long-term outcomes of trauma-focused treatment in psychosis. *British Journal of Psychiatry*, **212**: 180–2.

van Rood YR, de Roos C (2009) EMDR in the treatment of medically unexplained symptoms: a systematic review. *Journal of EMDR Practice and Research*, **3**: 248–63.

Wilensky M (2006) Eye movement desensitization and reprocessing (EMDR) as a treatment for phantom limb pain. *Journal of Brief Therapy*, **5**: 31–44.

Yaşar AB, Abamor AE, Usta FD, et al (2019) Two cases with avoidant/restrictive food intake disorder (ARFID): effectiveness of EMDR and CBT combination on eating disorders (ED). *Klinik Psikiyatri Dergisi*, **22**: 493–500.

Yunitri N, Kao CC, Chu H, et al (2020) The effectiveness of eye movement desensitization and reprocessing toward anxiety disorder: a meta-analysis of randomized controlled trials. *Journal of Psychiatric Research*, **123**: 102–13.

Zaccagnino M, Cussino M, Callerame C, et al (2017) Anorexia nervosa and EMDR: a clinical case. *Journal of EMDR Practice and Research*, **11**: 43–53.

MCQs

1 Indications for which EMDR has been used successfully include:
a depressive disorders
b chronic pain
c panic disorder
d psychosis
e all of the above.

2 Concerning the use of EMDR for anxiety disorders, meta-analysis found that:
a EMDR reduces only anxiety symptoms
b EMDR reduces only anxiety and panic symptoms
c EMDR reduces only phobic symptoms
d EMDR reduces only phobic and somatic symptoms
e EMDR reduces anxiety, panic, phobic and somatic symptoms.

3 Studies on the use of EMDR in depression suggest that:
a EMDR may be used as a stand-alone treatment for depression
b EMDR may be used in addition to other psychotherapies
c EMDR may be used in addition to medication
d EMDR may target negative memories associated with the development of depression
e all of the above.

4 As regards the rationale for the use of EMDR in the treatment of psychosis:
a EMDR targets traumatic memories that are associated with comorbid PTSD
b EMDR targets hallucinatory experiences that are associated with negative beliefs about self and others
c EMDR targets negative life experiences that trigger psychosis
d EMDR targets traumatic memories of having a psychotic breakdown and hospital admission
e all of the above.

5 Which of the following statements is false:
a EMDR is included in a best practice guide for treating nightmares
b practitioners need to be specially trained to use EDMR to treat patients with dissociative identity disorder
c a randomised controlled trial has not shown EMDR to be comparable to CBT in treating OCD
d with respect to chronic pain, the greatest amount of evidence exists to support EDMR's use in phantom limb pain
e research into EMDR as a treatment for eating disorders is currently mostly limited to case studies.

BJPsych Advances (2022), page 1 of 10 doi: 10.1192/bja.2022.31