

Eye movement desensitisation and reprocessing as a treatment for PTSD, trauma, and trauma related symptoms in children with intellectual disabilities: a general review

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Abstract

Purpose – This paper aims to discuss the utility of eye movement desensitization and reprocessing (EMDR) therapy as a treatment for children with intellectual disabilities (ID) who have experienced trauma.

Design/methodology/approach – Relevant National Institute for Health and Care Excellence (NICE) guidance and literature were reviewed to provide support for the use of EMDR as a treatment for trauma in children with ID.

Findings – There is a growing body of evidence which demonstrates that EMDR therapy is successful for the treatment of trauma in adults and children. However, for children with ID, the research is limited despite those with ID being more likely than non-disabled peers to experience trauma such as abuse or neglect.

Practical implications – EMDR can only be facilitated by trained mental health nurses, psychiatrists, psychologists (clinical, forensic, counselling or educational) or occupational therapists or social workers with additional training. Finally, general practitioners who are experienced in psychotherapy or psychological trauma and have accreditation. Therefore, this highlights that there may be a lack of trained staff to facilitate this intervention and that those who are generally working with the client closely and long term such as learning disability nurses are not able to conduct this intervention.

Originality/value – This paper presents an account of NICE guidance and evidence of the efficacy of EMDR as a treatment for adults, children and those with ID.

Keywords EMDR, Trauma, Intellectual disabilities, Adults, Children, PTSD, Eye movement desensitisation reprocessing

Paper type Literature review

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Trauma and children

Traumatic experiences during childhood pose a threat to a child's physical and emotional health. This can be towards the child themselves or may be where the child has witnessed a traumatic event. PTSD trauma is defined as any situation where actual or threatened death, serious injury or sexual violence occurs [Substance Abuse and Mental Health Services Administration (SAMHSA), 2014]. Typically, these are large "T" traumas whereby the individual is left feeling powerless (Barbash, 2017). Examples of these types of traumas include terrorist attacks, natural disasters, traffic accidents or sexual assault. The helplessness and lack of power distinguishes the difference between large "T" trauma and

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small “T” traumas. Generally, small “T” traumas do not lead to the development of PTSD; however, after experiencing multiple small “T” traumas, it is possible for an individual to develop a trauma response to the trauma which may decrease their quality of life. In other words, the individual’s increased psychological distress which may come with small “T” traumas can trigger the development of PTSD symptoms (Mol *et al.*, 2005). Small “T” traumas are distressing events which may impact an individual’s emotional functioning but do not pose serious threat to life. Examples of small “T” traumas may include interpersonal conflict, the death of a pet, financial worries or bullying. Adverse childhood experiences (ACEs) refer to intense and frequently occurring stressors that children may suffer in their early life. These experiences include but are not limited to abuse, neglect and violence between parents or other household dysfunction such as alcohol or substance abuse (WHO, 2020). Therefore, these ACEs can be categorised as both small and large “T” traumas.

Children who experience an inability to protect themselves or who lacked protection from others due to trauma may also feel overwhelmed by the intensity of these emotional responses (The National Child Traumatic Stress Network, 2018). The World Health Organization (WHO) estimate that up to 20% of adolescents have one or more mental health problem (Pathak *et al.*, 2011). Early onset of trauma exposure amongst children and adolescents has been found to be differentially associated with increased mental health outcomes and related risk factors among both males and females (Dierkhising *et al.*, 2013). This includes elevated anxiety in older youths and for females who have suffered more cumulative trauma (Abraham *et al.*, 2022). It is estimated that around one in four children experiences potentially traumatic events before their third birthday (Briggs-Gowan *et al.*, 2010), and more than two thirds of children reported at least one traumatic event by age 16 (SAMHSA, 2022). This highlights the importance of trauma-focussed therapies for the treatment of trauma. Experiencing bullying has been found to be the strongest predictor of PTSD symptoms amongst university students (University of Illinois at Urbana-Champaign, 2016) surpassing other types of trauma such as exposure to community violence or being abused or neglected by adults. Adolescents with mild to moderate intellectual disabilities (ID) have been found to be more likely than non-disabled peers to experience socio-economic disadvantage and bullying (Hatton *et al.*, 2017). For this population it may not always be clear that they are suffering from PTSD after an episode of bullying, as they may not be able to recognise or report the signs. This highlights the importance of looking out for signs of distress in children, particularly those with ID. This also demonstrates the need of using early intervention therapies where possible to prevent escalation in symptoms.

Eye-movement desensitisation and reprocessing

Francine Shapiro created eye movement desensitization and reprocessing (EMDR) as a treatment for trauma in adults (Shapiro, 1989a, 1989b). EMDR is used to help the person to change the negative way that they recall a traumatic experience. EMDR uses a person’s own rapid, rhythmic eye movements. These eye movements weaken the effect of negative emotionally charged memories of past traumatic events. [Eye Movement Desensitization and Reprocessing (EMDR), 2021]. There are many theories attempting to explain the science behind the success of EMDR therapy. However, it appears that the trauma exposure alongside bilateral visual, auditory and/or tactile simulation creates a resolution for traumatic experience (Solomon and Shapiro, 2008). Research has shown a successfully induced, lasting reduction of fear in mice by pairing visual alternating bilateral sensory stimulation with conditioned stimuli (Baek *et al.*, 2019). This change is associated with the neuronal pathway driven by the superior colliculus which mediates persistent attenuation of fear. The extensive connections of the superior colliculus make it a visual reflex centre for initiating eye movements and hearing and reacting to auditory input with non-auditory systems.

[Pagani et al. \(2012a\)](#) investigated the neurobiological patterns in a human participant. This showed activation in the prefrontal limbic cortex during the first session of EMDR. In the last session of EMDR, the activity was prevalent in the temporal, parietal and occipital cortical regions with leftward lateralisation. These findings suggest cognitive processing of the traumatic event post-EMDR therapy. [Pagani et al. \(2012b\)](#) conducted further research involving ten participants who were experiencing major psychological trauma to discover the areas in the brain which showed specific activations associated with the use of EMDR. The maximal activation was in the limbic cortex of patients occurring before trauma processing (midbrain). These findings suggest that traumatic events are processed at the cognitive level following successful EMDR therapy. This research supports the evidence of neurobiological patterns of brain activations during bilateral stimulation associated with relief from negative emotional experiences.

Unlike other treatments that focus on directly altering the emotions, thoughts and responses resulting from traumatic experiences, EMDR therapy focuses directly on the memory and is intended to change the way that the memory is stored in the brain. This is expected to reduce and eliminate the problematic symptoms associated with this individual memory. Slow-wave-sleep, which is often referred to as deep sleep, appears to play a part in memory consolidation and processing whilst rapid eye movements seem to lead to a weakening of traumatic episodic memories and a reconsolidation of new associated information ([Pagani and Carletto, 2017](#)). While EMDR is generally commissioned for the treatment of post-traumatic stress disorder (PTSD) in a health-care setting, its range is far reaching and has been evidenced to provide relief from other trauma-related symptoms regardless of the individual having a specific DSM PTSD diagnosis. EMDR has been shown to be an effective means of providing treatment to large groups of people impacted by large-scale traumatic events ([Jarero et al., 2006](#)) which demonstrates a strength. Since Shapiro's initial efficacy study, EMDR has been used with a wide range of populations such as individuals with dissociative or psychotic disorders, survivors of sexual abuse, those with obsessive compulsive disorders or children and adolescents who have a diagnosis of depression, to name a few ([EMDR Institute INC, 2020](#)). This is despite past perceptions of EMDR being appropriate only for the use of addressing the disturbing memories which lead to the development of PTSD.

Post-traumatic stress disorder

PTSD was first recognised as a diagnosable condition in 1980 when the American Psychiatric Association included it in its Diagnostic and Statistical Manual for mental health practitioners (DSM; [American Psychiatric Association, 1980](#)). Despite the length of time it took for medical practitioners to formally recognise the condition, the disorder has been evidenced throughout history. The term "combat stress" has been referred to around 2,000 years ago in historical literature. During the 1800s, mentions of PTSD in relation to combat and war zone participation were characterised as "battle exhaustion" or "soldier's fatigue" ([Crocq et al., 2000](#)). In present day, PTSD is characterised as an experience or witnessing of a traumatic event which involves intrusions, hyper-arousal and negative alterations in cognition and mood ([American Psychiatric Association, 2013](#)).

Current guidelines

The current NHS guidance recommends the use of EMDR as a treatment for trauma. National Institute for Health and Care Excellence (NICE) guidance recommends EMDR therapy for patients aged 7–17 years with a PTSD diagnosis or clinically important symptoms of PTSD presenting for more than three months after a traumatic event. This is under the condition that the use of trauma-focussed cognitive behavioural therapy (CBT) has tried and failed previously ([NICE, 2018](#)) or if the individual is unable to engage with CBT. This is despite there being literature evidencing that EMDR therapy is faster and/or a

more effective treatment than trauma-focussed CBT (Shapiro, 2014). This guidance has also found that EMDR is effective in reducing depression and anxiety symptoms. There is no NICE guidance available for professionals on using EMDR therapy to reduce the negative impact of ACEs or multiple small “T” traumas in children. The ACE International Questionnaire (ACE-IQ) can be used to measure ACEs globally. This means that professionals can measure both the association between the ACEs and the risks they may cause in later life (WHO, 2020) However, this measure is only designed to be used on people aged 18 years and older. Therefore, this does not provide an accurate measure of ACE impact on children. Clearly, more research and development is needed in this area to aid the understanding of the effect of ACEs on children. This is particularly important as features of stressful life experiences or neurodevelopmental disorders such as autism may present similarly in the behavioural or emotional response of child experiencing abuse or neglect (NICE, 2017).

Eye movement desensitization and reprocessing and individuals with intellectual disabilities

The term intellectual disability is characterised by limitations in intellectual, social and adaptive functioning, with an onset before adulthood (British Psychological Society, 2000). The literature examining the efficacy of any PTSD treatment for those with ID is limited. Whether this be due to the perceived “lack of engagement” with services due to communication difficulties or lack of interpersonal skills amongst health professionals in caring for those with ID (Alborz *et al.*, 2005). It could also be the case that professionals carry the therapeutic disdain that those with ID are unable to benefit from psychotherapy, as they are too cognitively damaged (Bender, 1993).

Those with ID have always been faced with inequalities in health care, and this has been acknowledged over multiple decades, still little has changed. However, this is a growing area and professionals and researchers have developed standards and policies to care for those with ID. Eric Emerson and Chris Hatton have researched this imbalance extensively. Their book *Health Inequalities and People with Intellectual Disabilities* outlines that apart from annual health checks there is little evidence of long-term health interventions for this population, as they are more than likely excluded from many mainstream health interventions (Emerson and Hatton, 2014). Their findings also concluded that specific evidence looking at the impact of these interventions on children at risk of developing ID is limited and lacking.

Other researchers have focussed on helping nurses (specifically mental health and intellectual disability nurses) to improve assessment, planning and delivery of care in adults with ID and mental health concerns (Devine and Taggart, 2008). The term “neurodivergent” describes:

Individuals who process information and behave in a way that differs from the actual or perceived norms of a particular culture. It is a way to discuss diagnoses, such as autism, in a way that does not frame it as a problem or an illness (Villines, 2022).

While the term neurotypical describes “someone who thinks and processes information in an expected way for their culture and setting” (Villines, 2022).

There is evidence that the health problems of people with ID are often unrecognised and therefore untreated (Alborz *et al.*, 2005). This may be due to diagnostic overshadowing. This is when a professional assumes that a person’s behaviour is part of their disability without considering other factors such as biological differences or other conditions which may be undiagnosed (Royal College of Nursing, 2018). These issues led to the development of the Health Inequalities Framework (Emerson *et al.*, 2012). This is an outcome-based framework which is designed to prevent premature death by indifference by providing professionals with standards for caring for those with ID. It focusses on

tackling health inequalities in this population and aims to enforce equality and accountability.

EMDR is a strongly recommended treatment for adults with PTSD ([American Psychological Association, 2017](#)). In recent years, increasing research attention has highlighted the empirical evidence to suggest that EMDR reduces PTSD symptoms in this population ([Boterhoven de Haan *et al.*, 2020](#); [Wilson *et al.*, 2018](#)). There has also been research looking at individuals who have experienced childhood sexual abuse and findings suggest that EMDR provides trauma symptom resolution in this female population ([Edmond *et al.*, 2004](#)). This suggests that EMDR can be successful and provide reduction in symptoms for traumatic experiences which do not necessarily result in a PTSD diagnosis being made. However, for those with ID there has been a lack of evidence to fully replicate these findings. There are some studies which have found that these findings can be applied to this population ([Penninx Quevedo *et al.*, 2021](#)); however, other researchers have suggested that EMDR therapy may perhaps only work for the “right person and the right time” ([Unwin *et al.*, 2019](#)). This highlights the importance of further research in this field to clarify the effectiveness of EMDR for those with ID.

There is an increased risk of those with ID developing mental health problems. This is due to this population experiencing increased exposure to biological, psychological and social vulnerability factors and them being less likely to cope with these independently ([Hardy *et al.*, 2007](#)). Past research has found that those with ID or Autistic Spectrum Condition are more likely to experience PTSD than typically developing adults. This is due to cognitive deficits in working memory which may result in a struggle to process traumatic events ([Rumball *et al.*, 2021](#)).

There are many case studies which highlight that EMDR treatment for those with ID reduces the symptoms of PTSD both straight after and at follow up ([Mevissen *et al.*, 2010](#); [Jowett *et al.*, 2016](#); [Dilly, 2013](#)). These studies also suggest that there are no negative or adverse effects on the cases from undergoing the treatment. It has previously been questioned whether this kind of treatment may not be suitable for those with ID due to limited research. However, these case studies suggest that EMDR is well tolerated by people with ID. Separate research has also found that participants with ID who undergo EMDR plus standard care can also become diagnosis free after treatment, at a greater rate than those experiencing standard care alone ([Karatzias *et al.*, 2019](#)).

Children and eye movement desensitization and reprocessing

EMDR is recognised by the World Health Organisation (2013) as an effective therapy for children and adolescents who have experienced traumatic events. It also has the highest recommendation for Children and Adolescents with PTSD from the International Society for Traumatic Stress Studies (ISTSS, 2018). It has showed to decrease PTSD symptoms in traumatised children and adolescents ([Wadaa *et al.*, 2010](#); [Karadag *et al.*, 2019](#)) and to have significant positive effects on behavioural and self-esteem problems ([Wanders *et al.*, 2008](#)). In this study, children were randomised and given a treatment of EMDR or CBT and although only a small difference in reduction of symptoms the children who were given EMDR showed significantly larger changes in target behaviours. A recent meta-analysis ([Hoogsteder *et al.*, 2022](#)) demonstrated significant treatment effects of EMDR with adolescents exhibiting trauma symptoms and externalised behaviour problems.

It must be taken into consideration the ages of the children undergoing EMDR therapy and how they may experience the treatment differently. One study looking at child survivors of a mass disaster earthquake has found that the older children involved in the study showed a reduction in distress and anger symptoms, whereas younger children reported an increase in these domains after three sessions of EMDR treatment ([Trentini *et al.*, 2018](#)). Older children also reported a great reduction in anxiety than that of the younger children. In

terms of gender differences, it was found that females evidenced a great reduction of distress, anxiety and need for help than males, whereas a greater increase in depressive symptoms was found in males when compared to females. Finally, this piece of research also evidenced that those children who received a timelier intervention showed greater improvement, than those who received delayed treatment. These results provide further evidence for the success of EMDR in children, but the individual differences must also be considered. Furthermore, the type of trauma experienced by these children may not be generalisable to other forms of trauma in other cultures.

Similarly, research has found that EMDR is effective in improving PTSD, suicidal ideations and mind-wandering in female survivors of child abuse (Jamshidi *et al.*, 2020). Generally, across many research studies, there seems to be more evidence to suggest that EMDR is a more successful therapy for females in comparison to males. However, this may be due to the perceived fact that women are more open to talking therapies and more likely to seek help for mental health concerns than males (McKenzie *et al.*, 2018). Whether this be due to males seeking to maintain independence or being less likely so seek social support these issues may act as a barrier to men asking for help or engaging in psychotherapy.

Beer (2018) carried out a literature review study to examine the efficacy of EMDR therapy for the treatment of children and adolescents with PTSD, symptoms of PTSD or other trauma related symptoms. Included in this review were 15 studies including nine randomized clinical trials and three meta-analyses. All studies found that EMDR therapy produced significant reductions in PTSD symptoms at posttreatment and in other trauma-related symptoms, when measured. However, a methodological analysis identified limitations in most studies, reducing the value of these findings. Beer found that despite these shortcomings, the methodological strength of the identified studies has increased over time. This review highlighted the need for additional research but suggests that as time goes on the findings are more inclined to say that EMDR is a successful treatment for children with PTSD symptoms. This review also provides support to show that EMDR provides relief and can in some cases alleviate all negative cognitions and associations caused by trauma, regardless of having a DSM criteria PTSD or small or big “T” type traumas.

Children with intellectual disabilities and eye movement desensitization and reprocessing

Disabled children are more vulnerable to child abuse or neglect than non-disabled children (NICE, 2017). It has been found that the prevalence rate of maltreatment for disabled children can be up to 31% compared to 9% for non-disabled children (Sullivan and Knutson, 2000). Children and adolescents with mild intellectual disability or borderline intellectual functioning are also at increased risk for developing PTSD or other trauma-related symptoms due to experiencing more ACEs than their neurotypical peers (Ooms-Evers *et al.*, 2021). This demonstrates the need for training on how to protect this population against people who may take advantage of their vulnerability and also understanding on how to care for them after a traumatic event of maltreatment.

Children and adolescents who have suffered trauma may experience this in different ways and this can often be more negatively than adults due to them being less likely to process the trauma successfully. EMDR aims to alleviate the distress associated with traumatic memories by facilitating the processing of traumatic memories and other adverse life experiences to bring them to an adaptive resolution. Studies have found that there is increased activity in areas implicated in high-order cognitive processing after EMDR therapy in children (Trentini *et al.*, 2015). These changes are associated with the decrease of traumatic symptoms which leads to the improvement of emotional adaptive functioning over time. Research has found that adolescents with ID have difficulties in cognitive processing of traumatic events and therefore are more likely to develop PTSD symptoms if they personally have experienced threatening events previously (Finzi-Dottan *et al.*, 2006).

These findings suggest that EMDR provides positive improvements in cognition and the processing of negative emotions which lead to reduction in PTSD symptoms in children with ID.

[Mevisse *et al.* \(2010\)](#) looked at four cases, including both children and adults from The Netherlands with mild ID, suffering from PTSD following various kinds of trauma. They accessed up to 13 sessions of EMDR therapy, with differing numbers of sessions being used per individual. They found that in all cases PTSD symptoms reduced and the gains were maintained at both three months and 2.5-year follow-up. These improvements clearly suggest the applicability and potential effectiveness in treating those with mild ID suffering PTSD symptoms. However, questionable is the external validity and generalisability to other populations. Therefore, more research in this field is required to account for this. Nevertheless, later research has also provided further support for these findings. The results suggest that EMDR can be an effective treatment for children/adolescents with mild to borderline intellectual disability and can even result in participants no longer meeting criteria for a PTSD diagnosis ([Mevisse *et al.*, 2017](#)). However, the sample in this study only included two participants and therefore, more research in this field with larger samples is required in order to replicate the findings of this warranted.

Investigations on the use of EMDR for children and adolescents aged 6–17 years with mild ID or borderline intellectual functioning who have experienced multiple ACEs such as physical abuse, emotional abuse, sexual abuse, domestic violence or bullying have found that EMDR is successful in reducing trauma-related symptoms and emotional and behavioural issues ([Ooms-Evers *et al.*, 2021](#)). Alongside this, there was a large reduction in the number of participants fulfilling the DSM-5 criteria of a PTSD diagnosis. This figure fell from 24 participants to 8 by the end of EMDR treatment. The participants received short-term intensive treatment which lasted 8.4 days on average and consisted of a daily program of prolonged EMDR steps. There were no participant dropouts, and no adverse events were seen post-treatment in this population. This research supports the claim that those with ID can tolerate EMDR therapy and that it is a useful and successful therapy for combatting the effects of PTSD, ACEs or other trauma-related issues in this population. This also highlights that short-term EMDR therapy can be as beneficial as long-term EMDR therapy.

Previous research by [Soberman *et al.* \(2002\)](#) highlighted potential issues with the use of short-term EMDR as a treatment for those with additional needs. The researchers assessed 29 boys ages 10–16 years who were diagnosed with conduct disorder (emotional and behavioural problems) who were being treated in a residential treatment facility or day treatment services. Those with ID have been found to often hold traits of or a diagnosis of other comorbid psychiatric disorders such as attention deficit and hyperactivity disorder (ADHD) and conduct disorder and vice versa ([Gautam *et al.*, 2014](#); [Harada, 2002](#)). This highlights the importance of having an accurate and sound understanding of each comorbidity to be able to differentiate between diagnoses. The study found a reduction in PTSD symptoms and memory-related distress after EMDR treatment. However, 59% of the boys had additional diagnoses of ADHD, ID, ODD and substance abuse. The results suggested that these additional diagnoses suggest a complex set of symptoms which three sessions of EMDR may be insufficient to address. Therefore, highlighting that a longer-term and more individualised EMDR approach should be used for these types of cases, which may have more financial and logistical issues but may be more impactful in alleviating symptoms in this population.

Findings from other research does suggest that eight weekly session EMDR does present significantly lower self-report scores in children's post-treatment scales than in waiting list controls ([Ahmad *et al.*, 2007](#)). This highlights the importance of considering individual characteristics such as the type of trauma before making a firm decision on the number of sessions of EMDR needed.

Conclusions

To summarise, in general there is a lack of research attention focussing on psychotherapies for people with ID and this is even less for children with ID. This is despite children with ID experiencing significantly more ACEs or traumatic experiences than typically developing peers. EMDR has shown to be a useful intervention for addressing consequences of trauma in adults and mainstream children, especially in females. However, further research and applicability is needed in order to generalise these findings to children with ID. This is a growing area, but an area which still requires research attention, and this paper highlights the importance of more research being undertaken in this field. This research also raises the point that although EMDR therapy is generally only typically funded for those with a DSM criteria diagnosis of PTSD, this therapy can also be used to treat the negative cognitions associated with both small and big “T” traumas.

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