



CASE REPORT

ADHD symptoms persist even when PTSD symptoms progress: An EMDR case report

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ABSTRACT

Although many studies report that attention deficit and hyperactivity disorder (ADHD) symptoms will improve after eye movement desensitization and reprocessing (EMDR), it is thought that the symptoms of ADHD, which is an organic disease, will not improve with psychotherapy. In this case report, significant improvements were reported in post-traumatic stress disorder (PTSD) symptoms with EMDR therapy in a 9-year-old boy, who was previously followed up with the diagnosis of ADHD and who was sexually abused by his cousin at the age of 7 years. A total of 5 EMDR sessions that lasted for an average of 45 min were applied to the patient. The symptoms of the case were followed up with Atilla Turgay Screening and Evaluation Scale that is based on the DSM-IV and with Post-traumatic Stress Index for Conduct Disorders in Children and Adolescents. At the end of the therapy and after the 4-week follow-up, the ADHD symptoms continued at the same level as they were before the traumatic event, and the symptoms of the oppositional defiant disorder (ODD) improved more when compared with the period before the event, and significant improvements were also detected in PTSD symptoms. However, ODD symptoms can mimic PTSD symptoms; EMDR may therefore be good. It was also observed that the bilateral stimulation types that were employed during EMDR should be changed more frequently than normal. As a conclusion, it was found that EMDR can be used as an effective psychotherapy method in children with ADHD and PTSD for PTSD and ODD symptoms except for ADHD symptoms.

Keywords: ADHD, EMDR, PTSD, trauma

INTRODUCTION

Attention deficit and hyperactivity disorder (ADHD) is a neurodevelopmental disease that lasts lifelong and proceeds with inattention, hyperactivity, impulsivity, and affects the cognitive, academic, social, and emotional areas (1). Previous studies showed that children with ADHD are abused more frequently and more severely (2). Post-traumatic stress disorder (PTSD) is defined as the development of specific symptoms after being exposed to a traumatic stress source. The lifetime prevalence of PTSD in the general population ranges

between 1% and 14% (1). As patients with ADHD are exposed to traumas more frequently, PTSD is more common in this patient group. The symptoms such as inattention, acting without thinking about the consequences (impulsivity), and impetuosity detected in patients with ADHD classify this patient group in the risk group directly in terms of exposure to traumas (3).

Eye movement desensitization and reprocessing (EMDR) is a psychotherapy approach that was developed by Francine Shapiro in 1987 and consists of 8 stages and a theoretically based adaptive information processing model. The 8 basic stages of EMDR are

How to cite this article: Gokcen C, Yilmaz G, Karadag M. ADHD symptoms persist even when PTSD symptoms progress: An EMDR case report. *Dusunen Adam J Psychiatr Neurol Sci* 2022;35:64-68.

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Received: November 09, 2021; **Revised:** March 13, 2022; **Accepted:** March 15, 2022

history and treatment planning, preparation, evaluation, desensitization, installation, body scan, closing, and reevaluation. Numerous case studies and quasi-experimental studies suggest EMDR therapy may be effective with children in the early years as well as for a wide range of mental health conditions (4). EMDR therapists suggest that EMDR can be applied in children who have comorbid diagnoses such as ADHD (5,6). However, the number of studies and case reports in this field is quite limited. It was reported in a study conducted in 2014 that EMDR was effective in decreasing anxiety and anger and increasing self-confidence in children with ADHD (7,8). Conversely, some studies report that ADHD does not respond adequately to psychotherapies due to its organic origin (9).

In our case, the efficacy and necessity of EMDR therapy in addition to pharmacotherapy in the treatment of PTSD, which was developed as a comorbidity to current ADHD after sexual abuse of the patient, who was followed up with the diagnosis of ADHD for many years and who received pharmacotherapy, was examined. Based on our knowledge, no cases have yet been reported in Turkey regarding this issue.

CASE

Our patient, who was a 9-year-old boy, was attending the fourth grade of primary school. He has two siblings who are older than him and is currently living with his parents and siblings. The first admission of the patient to the Children's Psychiatry Unit was made when he was 30 months old with complaints of mobility and ill-temper. He had risky behaviors, such as frequent accidents, climbing windows, throwing objects, and harmful behaviors when he did not have what he wanted. The patient, who was followed up with psychoeducation and behavioral suggestions, was prescribed risperidone because of the increase in his risky behaviors, and the dose was adjusted gradually. The symptoms regressed with the risperidone treatment. However, when the symptoms of hyperactivity and behavioral disorders increased again 6 months after the treatment, aripiprazole treatment was initiated.

Immediate-release methylphenidate (MPH-IR) was initiated when he was 6 years old because his attention problems became more obvious and behavioral problems persisted. MPH-IR was discontinued in the patient who had increased anger attacks after MPH-IR was initiated. The family, who was invited to the follow-ups to arrange the treatment, stopped the recommended medications and the child went to school without medication for approximately 2 years.

The case was admitted with severe ADHD and behavioral problems approximately 2 years later. It was learned in the information obtained from his teacher that he was an active student who did not obey the rules, who had limited communication skills, who made simple mistakes in exams because of attention deficit, and who often spent time alone at school because of the physical violence he applied to his friends. Extended-release methylphenidate (MPH-ER) and aripiprazole were initiated for the patient. The MPH-ER treatment of the patient was discontinued because he did not show symptomatic improvement after the dose adjustment that was made according to his weight, and atomoxetine was initiated.

The case did not come for follow-ups in the Child-Adolescent Psychiatry Unit for 2 years. It was determined in the last examination at the age of 9 years that he had secondary enuresis nocturna for the last 2 years. It was also determined that the etiological origin of secondary enuresis nocturna was the sexual abuse by his 19-year-old cousin, which lasted for 2 years. After the child said that he had been sexually abused during the examination, the family was informed, the first statement was taken at the child monitoring center through the social worker, and the legal process started. The court was informed that EMDR therapy would be started through the child's lawyer, and the symptoms and the process were recorded in writing. He had signs of reexperiencing, overstimulation, and avoidance after the event. EMDR therapy was planned for the patient who was considered to have a diagnosis of PTSD. The patient's suitability for EMDR was determined by the EMDR rating scale (10). Five EMDR sessions, each lasting for approximately 45 min, were carried out for the patient. The stages of the psychotherapy were as follows:

1. Stage – History and treatment planning: The history of the sexual abuse event was taken in the first session. The EMDR treatment was explained to the child and his parents. The bilateral stimulation (BLS) was also explained, and it was said that it would be initiated with eye movements, and tapping would be performed in case he could not adapt. Informed consent forms were obtained from both the child and the parent for EMDR and publication.
2. Stage – Preparation: Resource development exercises and safe place exercises were performed to stabilize the child. The first session was terminated here. The patient was encouraged to use the resources placed in the session and the safe place between sessions. The patient and parents were encouraged to repeat the preparatory work between sessions.
3. Stage – Evaluation: The worst part of the sexual

Table 1: Results of the parents' evaluation questionnaires filled out for ADHD and PTSD symptoms of the case

	Before the trauma	Before the therapy	After the therapy	4 weeks after the therapy
Turgay ADHD Evaluation Scale				
Attention	21	25	22	20
Hyperactivity	20	26	22	21
ODD	17	23	13	13
Trauma Stress Index	–	55	23	11

ADHD: Attention deficit and hyperactivity disorder; ODD: Oppositional defiant disorder.

abuse event was determined in the second session. Then, the following aspects were determined when the worst part of the event was remembered: negative cognition (NC), I am embarrassing; positive cognition (PC), I deserve to be happy; subjective units of disturbance (SUD), 7; validity of cognition (VoC), 2; emotion: unhappiness, anger, and sadness; and body sense: abdominal pain. Then, information was provided on the desensitization process of EMDR, the STOP signal was taught, and the next stage was initiated.

4. Stage – Desensitization: It was first observed that there was an increase in the level of discomfort before the session started with the remembrance of the worst moment of the event and NC kept together. SUD went as high as 10. Increased anger and crying attacks were also observed in the child. BLS was continued. When the SUD reached 6, the session was terminated as an incomplete session. The third session was continued from the previous week. Thoughts began to appear during the processing of the event that sexual abuse was his fault. Cognitive interventions (CI) were performed here [Therapist (T): How old was your cousin? Child (C): 19; T: How old were you? C: 7; T: Do you think a 19-year-old adult or a 7-year-old is responsible here? C: Umm... my cousin; T: Okay, go with that... BLS. SUD decreased after CI. The session was completed at 4. The fourth session was continued from the previous week. The child reported SUD as 3 at the beginning of the session. His parents also reported that this week was symptomatically better, and the problem of bedwetting decreased. The desensitization continued until SUD became "0." Then, the next stage was initiated. BLS type was changed, and tapping was done frequently. Parents were informed to observe the patient's change between sessions and to apply to the department in case of emergency.
5. Stage – Installation: About the event, it was questioned whether the PC was still valid. The new

PC was updated as "I am fine as I am now" VoC: 5. More adaptive thoughts were detected with the installation, and when VoC became 7, the next stage was initiated.

6. Stage – Body scan: He did not state any negative sensations in the body scan.
7. Stage – Closure: The fourth session was completed as SUD: 0, VoC: 7, and body scan clean. Positive body sensations were installed with slow and short BLS sets. Then the next step was initiated. Closure was performed with safe place.
8. Stage – Reevaluation: The parents reported in the fifth session that crying crises, stubbornness, and frequent fights decreased at significant levels, and communication with other children increased. Also, therapy was discontinued because of significant decreases in the symptoms of reexperiencing, avoidance, and overstimulation.

Atomoxetine treatment was started again for the patient before EMDR therapy. After the EMDR therapy, the patient's PTSD symptoms disappeared and ADHD symptoms continued, and routine follow-up was continued.

Measurement Tools

The ADHD symptoms of the case were evaluated with the Screening and Evaluation Scale for Conduct Disorders in Children and Adolescents Atilla Turgay (YDB-TDO) Scale based on DSM-IV, and the PTSD symptoms were evaluated with Post-traumatic Stress Index (11,12). The results of the parents' evaluation questionnaires filled out for ADHD and PTSD symptoms of the case are shown in Table 1 and Fig. 1. The results of the Wechsler Intelligence Scale for Children at the age of 7 were: verbal IQ: 95; performance IQ: 90; and total IQ: 91. The diagnostic interviews were determined by a child and adolescent psychiatrist with clinical interviews according to DSM-5. Additionally, rating of child's SUD scores (adapted from Wolpe as described in Shapiro, 1995) before and after intervention was used.

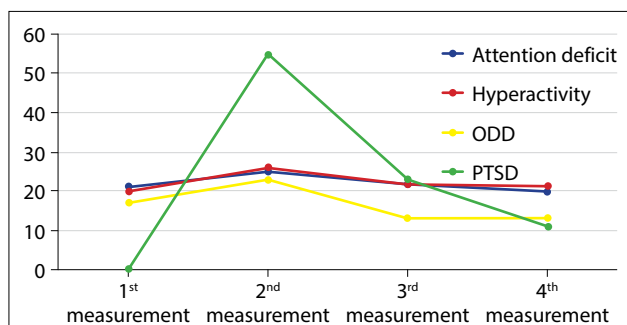


Figure 1. Temporal variation graph of attention deficit, hyperactivity, ODD, and PTSD scores.

ODD: Oppositional defiant disorder; PTSD: Post-traumatic stress disorder.

DISCUSSION

Our case is one of the rare cases in which EMDR treatment was applied successfully in a child diagnosed with ADHD and PTSD. However, as expected, ADHD symptoms still continue, and medical treatment is continued. Although PTSD frequently mimics ADHD symptoms, the continuation of basal ADHD symptoms supports the organic etiopathogenesis of ADHD (13).

Also, it was observed that the BLS types used in EMDR must be changed more frequently than normal because of the inability to concentrate or short-term or fast distraction in individuals with ADHD. The negative feedback of children with ADHD is received from their parents and teachers, and the low self-perception resulting from impulsive behaviors, which often lead to the exclusion from friendships, are potential targets for the EMDR therapist. It is important to teach emotional regulation tools and limits to children who have ADHD diagnoses. It may even be possible to decrease their medications after they help them improve in this respect (5).

As conclusion, children with ADHD are in the risk group in terms of negative childhood experiences, sexual and physical abuse, and neglect (14). Such children have inadequate coping strategies and defense mechanisms because of attention and related cognitive impairments, which make them more vulnerable to traumas (15). Because they are exposed to traumas often, the PTSD rates are higher in this group compared with the normal population (3). Family counseling is important to protect these children from possible emotional and physical traumas and to take necessary measures.

Other comorbidities for which EMDR psychotherapy is recommended can be listed as anxiety disorders, obsessive-compulsive disorder, attachment disorder, dissociative disorder, trichotillomania, sleep

disorders, and early-onset bipolar disorders. For example, it can be targeted to find the main event triggering the anxiety in children with anxiety disorder, train them about the response of their body to real or imaginary threats, and develop resources (5). The anxiety levels and PTSD symptoms were monitored with scales applied before and 6 weeks after the EMDR treatment in a study that was conducted in 2020 with 30 people. Statistically significant differences were detected between the symptom scores that were measured with the questionnaires applied before and after the EMDR treatment. Significant decreases were detected in anxiety levels as well as PTSD symptoms (16). In a study that was conducted in 2018, greater decreases were detected in anger in children, anxiety levels in women, and depressive symptoms in men after EMDR therapy (17). Results of a study of Syrian refugee children with PTSD show that EMDR interventions can reduce symptoms of PTSD and depression, as well as improve children's well-being (8,18). In another study that was conducted in 2018, the participant received 15 sessions of EMDR. At 90-day post-treatment follow-up, there was a substantial decrease in OCD symptoms (from moderate to subclinical) as measured by the Children's Yale-Brown Obsessive-Compulsive Scale. The current study provides at least preliminary support for the need for additional investigation of EMDR's use as an effective, evidence-based treatment for OCD in children and adolescents (19). In a study that was conducted in 2020, it was reported that phobia, depression symptoms, and sleep problems decreased at significant levels (20). In a case study, EMDR was used with a 9-year-old girl who presented with emotional triggers originating from sexual abuse by her biological father. Following treatment, scores on the child and parental report standardized measures of PTSD indicated PTSD reduced to nonclinical levels (6).

The addition of psychotherapeutic treatment, such as EMDR, in addition to the pharmacotherapy for the treatment of PTSD, which develops secondarily to intense traumatizing experiences, such as sexual abuse in patients with ADHD, is necessary and important in dealing with these two disorders, which often appear as comorbidities. It was also determined that EMDR psychotherapy is effective in the replacement of negative and incorrect beliefs with positive emotions, which occur as a result of traumatic events of the patient, as well as symptoms such as social exclusion and low self-perception. However, the persistence of ADHD symptoms is observed. For this reason, it was determined that more studies are needed to increase evidence-based data in this respect.

Contribution Categories		Author Initials
Category 1	Concept/Design	C.G., G.Y., M.K.
	Data acquisition	C.G., G.Y., M.K.
	Data analysis/Interpretation	C.G., G.Y., M.K.
Category 2	Drafting manuscript	C.G., G.Y., M.K.
	Critical revision of manuscript	C.G., G.Y., M.K.
Category 3	Final approval and accountability	C.G., G.Y., M.K.
Other	Technical or material support	C.G., G.Y., M.K.
	Supervision	C.G., G.Y., M.K.
	Securing funding (if applicable)	C.G., G.Y., M.K.

Informed Consent: Informed consent was obtained from the patient and his parents.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors declare that they have no conflict of interest.

Financial Disclosure: The authors declare that they have no financial support.

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