Case Series

Effects of Eye Movement Desensitization and Reprocessing (EMDR) on Disease Symptoms and Functionality in Patients with Psychotic Disorders

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Abstract

It is known that past stressful life events have significant effects on the emotions, thoughts, and behaviors of individuals. Evaluation of the factors that trigger the onset of psychiatric factors revealed that negative life events and traumatic experiences have an effect on individuals. Recognition of the comorbidities of posttraumatic stress disorder (PTSD) with other psychiatric disorders has a critical role in the treatment process. Questioning the history of trauma in individuals who are diagnosed with a psychotic disorder is effective both in increasing the efficiency of drug treatment, reducing the severity of symptoms, and improving the quality of life of the patient. Literature shows that the prevalence of PTSD is significantly higher in schizophrenia patients than in the healthy population. Eye Movement Desensitization and Reprocessing (EMDR) is a psychotherapy method, which is shown to be effective in several mental disorders, particularly PTSD. In literature, there is a limited number of studies about the effectiveness of EMDR therapy in patients diagnosed with psychosis. In this case series, it has been shown that the administration of EMDR therapy reduced the positive and negative symptoms and contributed to the improvement in the functioning of the patients. **(Anatolian Journal of Psychiatry 2019; 20(5):522-529**

Keywords: Eye movement desensitization reprocessing (EMDR), psychotic disorders, schizophrenia, traumatic events

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INTRODUCTION

The effects of both trauma and the post-traumatic process in psychiatric disorders are becoming more widely recognized.[1] Publications suggest that people with schizophrenia have a greater incidence of exposure to traumatic experiences than those without schizophrenia. Furthermore, there is research showing childhood traumas may be a predisposing factor in people with schizophrenia. [2] There is data indicating mental trauma-focused therapy and trauma memory processing to be particularly beneficial in lowering the intensity of both trauma and depression and boosting social functioning in schizophrenia patients. [3] However, recent studies have demonstrated that one of the trauma-focused therapies, Eye Movement Desensitization and Reprocessing (EMDR), is effective and safe in individuals with schizophrenia or trauma. [4]

Being used in therapeutic practice to treat post-traumatic stress disorder (PTSD), EMDR appears as an efficient option. [5] Although the number of publications demonstrating the use of EMDR treatment in schizophrenia patients is limited, they demonstrate that EMDR therapy is beneficial and safe in schizophrenia patients with PTSD comorbidity. [4, 6] On the other hand, EMDR has been shown in studies to improve psychotic disorders, auditory-verbal hallucinations, delusions, anxiety, sadness, and self-esteem, even if PTSD comorbidity has not been found. [6] According to the formulation created in the EMDR therapy, it may sometimes be the initial starting point in the first directly associated traumatic therapy, and sometimes the triggering conditions can be the starting point for the therapy. Since EMDR is a therapeutic strategy that employs memory networks, both approaches have the same impact. There is additional research suggesting that traumas in people with schizophrenia should be investigated and that EMDR treatment should be regarded as an extra option in trauma patients. [4] Furthermore, there are studies reporting the effectiveness of EMDR treatment to be limited. [6]

Considering the findings concerning the correlation between PTSD and traumatic events, it was hypothesized in this study that EMDR therapy for traumatic memories would improve positive and negative symptoms as well as social functioning in people diagnosed with psychotic disorders. This study presents the EMDR therapy, which was used in conjunction with antipsychotic medication, on five schizophrenic patients who had traumatic experiences, and the results of the therapy.

METHODOLOGY

Five patients who were followed up with the diagnosis of non-organic psychosis according to DSM-5 diagnostic criteria, who were undergoing pharmacological treatment, who volunteered to receive EMDR sessions, and whose family gave informed consent to participate in the study, and had no additional medical problems, who applied to a psychiatrist consecutively, and who were in compliance with the sessions until the end, were included in the study. The overall and subscale scores of the PANNS and Schizophrenia Patients Functional Recovery Scale of the patients participating in the study were recorded before and after the EMDR sessions. The patients received 8 to 10 EMDR sessions for 60-90 minutes.

Measurement Tools

Functional Remission of General Schizophrenia Scale: Llorca et al. developed the scale in 2009[7] and Emiroğlu conducted the Turkish validity and reliability study the same year. [8] The nineteen-item scale is in a five-point Likert format and is divided into four subscales: social functioning, health and treatment, daily living abilities, and vocational functionality. As the scale's scores rise, so does the functionality.[8]

Positive and Negative Syndrome Scale (PANSS): It is a semi-structured interview instrument with 30 items and a seven-point severity scale for evaluating positive (7 items), negative (7 items), and general symptoms (16 items) in individuals with schizophrenia. [9] Kostakoğlu et al. investigated the scale's reliability and validity in a sample of Turkish schizophrenic patients. [10]

CASE REPORTS

CASE 1

A Twenty-seven-year-old, single, and university graduate male. He suffered delusions of persecution and reference, as well as visual-tactile hallucinations, for two years. Following the diagnosis of schizophrenia, 10 mg of olanzapine per day was indicated. The patient's mother also suffered from schizophrenia. When the patient applied to us, he had no insight, was regularly discontinuing the medication, and displayed verbal and physical anger toward his persecuted relatives. With antipsychotic medication, his excitation improved, but his delusions and hallucinations did not. Since he stopped taking his medicine multiple times during his therapy and had excitement when he did, the patient was given Risperidone 4-6 mg/day and Carbamazepine 400 mg/day during this time. However, he was unable to adjust to the relevant medications owing to the side effects. As a result, the patient was prescribed Aripiprazole 30 mg/day.

Nine sessions of visual two-way stimulation and EMDR were performed. Delusions (his brother despises his father and intends to hurt him, makes noise, and sends a message), visual hallucinations (seeing a lady and having a tingling feeling in his

penis and his mind to be with her and feeling shy), and childhood traumas (his uncle's physical-verbal violence against his mother, hospitalization of his mother) were targeted with EMDR, respectively, and a standard protocol was applied. (Negative cognition - NC: I am worthless, unloved, out of control, lonely, and unable to let go.) He grew desensitized to his hallucination, which eased his communication stiffness and allowed him to speak with people. EMDR has been demonstrated to improve patient adherence to treatment, social interactions, as well as employment and retention. At this point, it is believed that the medicine, in addition to the therapy, has an influence on the improvement of the patient's symptoms and that the therapy generates additional advantages for drug compliance and cognitive processes. He was taking Aripiprazole, the last medication to be given in the follow-ups, on a regular basis at 30 mg/day, and his condition was considered to be stable. The patient's pre-and-post-EMDR scale scores are presented in Table 1.

CASE 2

A Twenty-year-old, single, graduate female. She had introversion, skepticism, inappropriate laughter, delusions of persecution, and delusions of reference such as "People are talking behind my back, framing me up and trying to slip my feet, quoting me on social media", and delusions of being influenced like "they are manipulating me" and influencing like "I am manipulating my mother". She experienced aural hallucinations, such as a "clicking" sound in her mind. She also lacked insight, did not take her medicine, and was difficult to bring to treatment. Her self-care was insufficient, and she rarely the house. She was diagnosed with schizophrenia. In the first stage, olanzapine 10 mg/day and quetiapine 100 mg/day were administered. Nine sessions of EMDR therapy were prescribed for her traumatic experiences. Because the patient was unable to adjust to visual two-way stimulation during EMDR therapy, tactile two-way stimulation was used. The patient was prescribed 10 mg of Olanzapine per day and 100 mg of Quetiapine per day. After one and a half months of no Olanzapine, Quetiapine 100 mg/day and Risperidone 2 mg/day were prescribed and gradually escalated to 4 mg/day in the patient with medication incompatibility. Due to the negative effects, she encountered, she was taken off quetiapine around a month later. Risperidone was maintained at a dose of 2-4 mg per day. In the first six sessions of EMDR, delusions that damage functionality were studied (NC: I am a worthless, disappointing, insignificant, useless, and inadequate person). From the sixth session, her illusions improved. During the 7th and 8th sessions, she indicated remembering her childhood traumas. The patient was studied by focusing on recollections of being ignored, left alone for hours as a child, and physically abused. In the ninth session, her inability to find work (NC: "I cannot do anything") was studied. Despite improvements in medicine compliance since the last control, Risperidone was discontinued owing to weight gain, and Aripiprazole 15 mg/day was given, and she still uses the medication in the follow-ups. She began going out, sitting in the front row at social gatherings (weddings, engagements, etc.), talking to people she knew, reading books, doing chores, meeting old acquaintances, and seeking work. In this patient, it is believed that EMDR therapy was useful in addition to the medication and that it notably improved drug compliance and cognitions such as shame and worthlessness that may develop during remissions. The patient's pre-and-post-EMDR scale scores are presented in Table 1.

CASE 3

Thirty-five years old, single, university graduate male. He experienced visual hallucinations of an eye following him in the air while in the military service nine to ten years ago, and despite being advised to do so, he did not take antipsychotics. In addition to the delusions of persecution such as "they listen to my phone" and "they will kill me", the patient also developed delusions of reference such as "my brain was taken", "they stole my data and reset it"; delusions of control like "they are controlling my brain via television-spells"; and auditory hallucinations such as hearing voices that disagreed with him. Despite four years of medication, the patient's positive symptoms did not improve, and he was diagnosed with schizophrenia.

For his traumas, the patient was advised EMDR therapy, and a total of 9 sessions of EMDR therapy were planned, as well as the administration of Risperidone 2 mg/day. The delusion of control was chosen as the target incidence in the first session (NC: I am not in control, I am not good enough, I am weak). Following therapy, the patient indicated that "the thought that individuals read his brains and steal his data may not be true, maybe it's a trick of the brain" as positive cognition in conjunction with depersonalization. In this regard, he was expressing incisive realizations that the copper cage-hat he had built and worn in the past now appears quite hilarious to him. His extreme physical symptoms returned during two-way eye movements in therapy, and he stated that his chest was pressured at the sides and felt like it was about to burst. He was advised to focus on this feeling and with the emotion bridge approach, to think about where he could have had it previously. The patient reported that they informed him he nearly

died at birth, and the somatic compliance in issue was studied with two-way stimulation. He had a history of difficult labor as well as cord tangling. Meanwhile, the patient's medications were rearranged as Risperidone 6 mg/day and Carbamazepine 400 mg/day. The recollections of sweating during job interviews, being unable to talk, and feeling the same anxiety sensations in e-mailing concerning job applications were studied in the fifth and sixth sessions (NC: I cannot trust my decisions, I cannot protect myself). After the eight sessions, he stopped taking his medicines. His auditory hallucination (he remembers all the women in his past and tells them to his ear) occurred and was targeted with EMDR; in the ninth session, his hallucination was neutralized, and his difficulty to shop alone was the target incidence (NC: I cannot trust myself). The patient's medicine consumption was arranged as Risperidone 2 mg/day at the final control, and he continued taking in the follow-ups. Following the sessions, the patient began going out, his social relationships improved, and he found a job and started working. The patient's insight of his disorder continues, with him expressing that he finds his delusions ludicrous and amusing. Changes were made to the antipsychotic treatment as needed during the therapy, and it was discovered that the medicine and therapy procedure worked well together in this patient's rehabilitation. The patient's pre-and-post-EMDR scale scores are presented in Table 1.

CASE 4

Thirty-six years old, single, university graduate male. He was treated as an inpatient in a psychiatry clinic for his seven-year-old belief in high-level abilities, auditory-visual hallucinations of riding a horse and going to battle, sleeplessness, and inability to work. He had a history of physical and mental abuse as a child. He had been using Olanzapine 5 mg/day for two years to treat atypical psychosis. He had insight and had not had any positive symptoms in the previous year. He asked for psychotherapy because of his poor performance, inability to speak and defend himself, and not being comfortable in society. A total of nine EMDR sessions were planned to treat patient's traumas.

Table 1. Scale scores applied to patients before and after EMDR

	Case 1		Case 2		Case 3		Case5		Case 5	
	Pre-EMDR	Post-EMDR	Pre-EMDR	Post-EMDR	Pre-EMDR	Post-EMDR	Pre-EMDR	Post-EMDR	Pre-EMDR	Post-EMDR
PANSS Total	78	59	85	47	81	40	68	53	81	46
PANSS Positive	25	17	23	11	27	11	9	9	23	12
PANSS Negative	18	13	25	15	12	9	23	16	15	9
PANSS General	35	29	37	21	42	20	36	28	43	25
FRGSS Total	35	29	37	21	42	20	36	28	43	25
FRGSS social functioning	10	17	6	19	11	20	7	21	14	22
FRGSS health and treatment	8	12	4	13	9	14	12	17	7	11
FRGSS daily living abilities	12	17	10	21	14	22		20	28	20
FRGSS vocational functionality	3	6	2	6	5	8	6	9	9	10

FRGSS: Functional Remission of General Schizophrenia Scale

The first session concentrated on his manager's bitter comments (NC: "I am not good enough'').
After the first session, he expressed that he remembered childhood physical abuse scenes.
The memories of his father, who had childhood tr aumas, when he physically violated him,as well as the recollections of shredding and burning his toy and clothes, were studied in the second and third sessions (NB: I am an unl oved person).
Embarrassment while speaking in social circumst ances, inability to speak in business meetings, an d recollections of being unable to defend himself when someone becomes furious were all address ed in the fourth and eighth sessions (NB: I cannot protect my own interests). In the ninth session, he expressed he started to defend himself against his father's pressures. Because the patient felt better following the sessions, the olanzapine dose was lowered from 5 mg/day to 2.5 mg/day. However, due to visual hallucinations, the dosage was raised to 5 mg/day once more. It was the goal of the ninth and tenth sessions to be unable to talk comfortably in business meetings. (Note: I'm not good enough, I can't be confident, and I can't safeguard my own interests.) He reported that his boss was less harsh at him at work, that his aggressive conduct had subsided, and that he was more real intimate with colleagues. The patient's social relationships improved significantly, and he reported that his dread of his father had lessened. The patient's capacity to articulate himself in business meetings and in self-defense activities against unfairness improved. He began dating someone of the opposite gender. It was decided that the patient should continue to take Olanzapine 5 mg/day at the last follow-up of the patients after 5 months. The patient's condition was found to be stable, and the medication was continuing as prescribed. The patient's pre-and-post-EMDR scale scores are presented in Table 1.

CASE 5

Thirty-eight years old, married, university graduate male. The patient had been listening to his wife's phone, watching her, and arguing with her, claiming that she was gazing at someone else for the last four years since he feared that his neighbor and one of his friends were having an affair with her wife. His pre-disease history revealed that his mother died when he was nine years old, and his father died when he was thirteen. The patient came to the clinic because his wife had threatened to leave him, and he had no insight into his disease. The patients were diagnosed with delusional disorder. Risperidone at a dose of 2 mg per day was prescribed. Despite his refusal to take the medication, the patient agreed to undergo psychotherapy. Following that, he was scheduled to get eight sessions of EMDR therapy to treat his traumas. His delusion (the glances of his friend and partner) was taken as the target incidence (negative belief about himself: NC: "I am not loved") in the first two sessions, and after the first session, with the depersonalization of the target moment, the patient's negative symptoms, including insight, improved. He claimed that he was no longer disturbed by the target scene since he saw nothing wrong with it. He thought it was amusing that he was listening to his wife's phone and the surroundings. Delusions in the patient's thinking content vanished in the third session, and psychosomatic symptoms arose. The patient expressed his admiration for his two cancer-stricken buddies. "Dying of cancer and living his children" was addressed as the target incidence (NB: I am in danger). The patient, who did not take medication although it has been 3 months since the last control, was studied targeting the memories of his father and mother, both of whom had childhood traumas, as well as the fact that he felt uneasy when he left the city or went abroad (NB: I am not safe), in the fourth, fifth, and sixth EMDR sessions. He was studied in the 7th and 8th EMDR sessions addressing the avoidance of social situations as target incidence (NB: I am in danger). The patient, who refused to take medication during his therapy, reported that his delusions of jealousy towards her wife vanished after the sessions, and he was able to communicate with individuals he is not acquainted with, in social settings. Although the patient's psychosomatic symptoms improved, they partially remained during the follow-ups. The patient's pre-and-post-EMDR scale scores are presented in Table 1.

DISCUSSION

The aim of this study is to investigate the efficacy of EMDR therapy in addition to medication therapy in individuals who have been diagnosed with schizophrenia. Furthermore, we believe that, although antipsychotics addressed the biological side of psychotic symptoms in these people, EMDR improved poor functionality, which we assumed was connected to trauma and formed subsequent to these symptoms. However, because the therapy process begins during the antipsychotic regulation, the question of the improvement depends on what is critical. Despite this, our study is significant because it implies that EMDR therapy might be an alternate treatment for enhancing functionality in schizophrenia patients.

Although many studies have been conducted for the treatment of cognitive and functional disorders in schizophrenia, both in terms of pharmacological and cognitive treatments, psychological difficulties that may be caused by the

traumatic effects of the disease itself or the triggering past experiences are often overlooked, with the exception of biological symptoms that improve with pharmacological treatment. [11, 12] Despite the fact that atypical antipsychotics are anticipated to increase neurocognitive performance, this impact has been demonstrated to be less than expected. [13] Inadequate response to cognitive deficits in pharmacological therapies has resulted in a reconsideration of cognitive improvement strategies. A recent meta-analysis of 26 randomized controlled studies (a total of 1151 patients) found cognitive enhancement therapies to have a modest effect size. [14]

Similar to the cognitive impairment in schizophrenia, the physiologic consequence of mental trauma can produce reluctance, dullness, and lack of pleasure. [15] As negative symptoms that do not respond to medicine, these cognitive deficits can have a detrimental impact on quality of life. Bleuler also classified schizophrenia's key symptoms as impaired association, impaired effect, ambivalence, and autistic thinking. [16] It has been proposed that hallucinations and delusions emerge as a defensive mechanism against these deteriorations in mind structure connected to thought content.[17] Working with traumatic memory in schizophrenic patients, whom we believe may create a predisposing or triggering mechanism in this defense system and that there may be an increase in the severity of symptoms due to the effect of psychological trauma, may have resulted in an increase in our patients' functionality and a decrease in their symptoms in our case series.

Psychological trauma affects individuals with schizophrenia at a significant incidence, and regretfully, the traumas of the patients are overlooked. [2] According to the findings of a 2018 study conducted by Croft et al. with 4433 participants, the likelihood of having a psychotic condition is increased among individuals between the ages of 0 and 17 who have been exposed to stressful life experiences, including all forms of trauma. [18] Read et al. conducted a study of the theoretical and clinical consequences of psychosis and concluded that childhood traumas enhance the chance of developing a psychotic disease. They also emphasized the need of focusing on the identification and treatment of childhood traumas. [19] In the cases discussed in this essay, we designed EMDR therapy to assist clients in releasing the emotional weight of difficult life experiences and desensitizing them to their adverse consequences by replaying these memories with two-way stimulation. As a result, we believe we have demonstrated that EMDR therapy, like cognitive improvement programs, can improve functionality and quality of life for patients with schizophrenia, as well as provide a significant reduction in schizophrenia symptoms, particularly in symptoms where medication is ineffective. EMDR researchers focusing on schizophrenia have created numerous EMDR protocols in this regard. [4, 20] In addition, Miller proposed an essential strategy in this respect, and called this strategy the "IConn 3 Model." [21] In this concept, he recommended studying directly identifiable traumas in first-stage schizophrenia patients. It is proposed to examine the traumatic memory networks that are beneficial for delusions and directly interfere with the trauma that generates the symptom in this initial stage. He advised reviewing prior events based on the distressing feelings of the symptoms in the secondary stage. At this stage, the emotion bridge approach is used to investigate the source of the emotions elicited by the symptom, and the defective memory networks that feed this emotion are numbed. The third approach is to give attention to the delusions or hallucinations and desensitize individuals to their unsettling characteristics. [21] In this case series, we wanted to improve patients' functionality and treatment adherence by desensitizing the symptom and, in some cases, the impact of prior traumas using EMDR.

The EMDR technique improved both positive and negative symptoms produced by psychosis in the current case series, while also increasing functionality (Table 1). The Functional Remission of General Schizophrenia Scale was used to assess the social functioning, health and treatment, daily living skills, and vocational functionality of the five patients in question, and the results are presented in Table 1. Because EMDR treatment targets negative cognitions that are more prone to form as a result of early traumatic life events, it assists patients in developing more functioning beliefs and increasing their sense of security. It is assumed that by doing so, individuals would be able to cope with the depressed mood and anxiety connected with traumas more efficiently. [6]

Although visual hallucinations continued in Case 1, they became less distressing. His auditory problems had less of an impact on interpersonal relationships, which enhanced his quality of life. A third option is to depersonalize the negative impact of these hallucinations and reduce their discomfort. In Case 2, we studied childhood trauma as a source of delusions. The hallucinations lost their intensity when this recollection was analyzed. In fact, in this scenario, some of the symptoms, aside from the structural problem, might be psychological symptoms overlaid on the structural difficulties, and that at least some of the symptoms can be alleviated with psychotherapy interventions. This might be used as an example for the first path in the study of Miller et al. [21] In Case 3, the emotion bridge was used to study memories, which are the cause of the bothersome nature of the symptoms.

Although the auditory symptoms worsened following the sessions, the delusions had far less impact. This is an example of the second method in the model of Miller et al. Although the medicine helped with positive symptoms in Case 4, there was a considerable improvement in social life and human interactions when EMDR was used to help with the requirement for social functioning and negative symptoms. Regardless of the disease's diagnosis, this patient, like healthy persons, can serve as an example of how understanding previous mental traumas can enhance the quality of life and strengthen relationships. [21] In Case 5, the patient was studied by directly targeting the delusions themselves, and both the hallucination and social functioning improved significantly.

CONCLUSION

From the perspectives of both the Bleuler and Miller teams, it is probable that schizophrenia has an organic that causes mental degeneration. However, certain delusions and hallucinations may not be the result of an organic disorder and may act as a protective mechanism. Patients with schizophrenia, like other healthy people, may feel additional complaints that are not directly connected to their condition but are the result of previous experiences or traumas associated with the disorder. The findings of this study suggest that when the EMDR therapy approach is applied to the psychological elements that burden the mental structure in patients with schizophrenia, apart from structural deterioration, a decrease in symptoms, an increase in drug compliance, and an improvement in functionality can be observed. More research with broader samples, including cognitive evaluations, is required to understand the efficacy of EMDR therapy in terms of the complaints of patients with schizophrenia.

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