Anorexia Nervosa and EMDR: A Clinical Case

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Numerous studies have identified links between psychopathology and a history of traumatic life events and dysfunctional attachment relationships. Hence, given the possible traumatic origins of this pathology, it may be useful to provide a trauma-focused intervention such as the eye movement desensitization and reprocessing (EMDR) therapy. This article illustrates a clinical case by describing the positive results of the EMDR therapy in the recovery of unremitting anorexia nervosa in a 17-year-old inpatient. She had previously been hospitalized on 4 occasions in the previous 4 years and received both psychodynamic and cognitive-behavioral therapy. At pretreatment, the client weighed (28 kg, 62 lb) and had a body mass index of 14. She was designated with a dismissing attachment style on the Adult Attachment Interview. EMDR therapy was provided for 6 months in hospital, in twice weekly 50-minute sessions and consisted of standard procedures primarily focusing on her relational traumas, interspersed with psychoeducational talk therapy sessions, and integrated with ego state therapy. At the end of treatment, the client weighed (55 kg, 121 lb) and had a body mass index of 21.5. She no longer met diagnostic criteria for anorexia nervosa, and her attachment style had changed to an earned free-autonomous state of mind. She reported an increase in self-confidence and in her ability to manage various social challenges. Results were maintained at 12 and 24 months follow-up. The treatment implications of this case study are discussed.

Keywords: eye movement desensitization and reprocessing (EMDR); eating disorders; anorexia nervosa; psychotherapy; attachment; trauma

In the past 20 years, given the dramatic increase of eating disorders (EDs) in industrialized countries, several studies have investigated the complexity of these pathologies, in terms of etiopathogenesis, prevalence, prevention, and treatments (Bailey et al., 2014; Hudson, Hiripi, Pope, & Kessler, 2007). The onset of ED commonly occurs during adolescence or in the first adulthood and it is often related with important psychological and physical burden (Bailey et al., 2014). An international epidemiological research in Western countries, including Italy, have indicated the prevalence of anorexia nervosa (AN) at 0.2%–0.8%, of bulimia nervosa (BN) at 3%, and eating disorder not otherwise specified (DCA-NOS) between 3.7% and 6.4%. Furthermore, the incidence of AN is 4–8 new cases per year per 100,000 people, and BN is 9–12. The age of onset is between 10 and 30 years, with a mean age onset at age 17 years (Abbate Daga et al., 2011).

According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., *DSM-5*; American Psychiatric Association [APA], 2013), there are three main diagnostic categories of EDs, namely, AN, BN, and binge eating disorder. AN is characterized by maintaining body weight at or below 15% of the normal value, and

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an intense fear of gaining weight. BN is characterized by recurrent binge eating, followed by inappropriate compensatory behaviors (e.g., vomiting). Finally, binge eating disorder is related to recurring episodes of eating significantly more food in a short period of time than most people would eat with feelings of lack of control.

This article describes the successful treatment of Anna, a 17-year-old woman with AN. The *DSM-5* (APA, 2013) identifies three criteria for the classification of the disease: (a) refusal to maintain body weight at or above a minimally normal weight for age and height, for example, weight loss leading to maintenance of body weight less than 85% of that expected or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected; (b) intense fear of gaining weight or becoming fat, even though underweight; (c) disturbance in the way one's body weight or shape is experienced, undue influence of body weight or shape on self evaluation, or denial of the seriousness of the current low body weight.

Scientific literature agrees in promoting an early detection and an effectual treatment because AN is a life-threating condition, reporting a higher incidence of cardiovascular complications, marked hematologic deficiencies, dangerous refeeding syndrome, deficits in body development, hypophosphatemia, reduced bone mineral accretion, structural and functional brain alterations respect to healthy subject (Brown, Sabel, Gaudiani, & Mehler, 2015; Katzman, 2005; Sabel, Gaudiani, Statland, & Mehler, 2013). Moreover, the literature suggests that the medical complications in adolescents with AN, as in the clinical case presented, are diverse from those reported in adults (Katzman, 2005).

Relationship Between Eating Disorders and History of Traumatic Experience in the Light of Attachment Theory

Many research studies have focused on the emerging link between EDs and a history of traumatic life events (Johnson, Cohen, Chen, Kasen, & Brook, 2006; Speranza & Alberigi, 2006; Steiger & Zankor, 1990; Vize & Cooper, 1995; Welch & Fairburn, 1994). Recent research conducted by Racine and Wildes (2015) explored how childhood abuse (i.e., emotional, sexual, physical) is related to emotion regulation difficulties and AN symptom severity. Specifically, emotional abuse, such as psychological maltreatment or neglect, was associated with more severe emotion regulation problems and ED symptomatology than either childhood physical or sexual abuse.

In general, a dysfunctional attachment relationship has a negative impact on the long-term well-being of the child and it is possible that relational traumas experienced in childhood could be a risk factor for the development of EDs (Messman-Moore, & Garrigus, 2007). It is hypothesized that individuals who experience difficulty in coping with strong, negative affects, might use food related self-destructive behaviors (such as self-starvation, overeating, and vomiting) as a way to cope with negative and overwhelming emotions related to traumatic memories (Hund & Espelage, 2005; Schwartz & Gay, 1996).

The Attachment Theory

According to Bowlby's theory (1969, 1982), the attachment behavior is an inborn system that motivates an infant to seek proximity to a caregiving adult (George & Solomon, 1996). These initial proximity-seeking attachment behaviors result in repeated interactions with a caregiver that become encoded in internal working models (IWMs) of attachment that act as schemata for future relationships (Siegel, 1999). The IWMs are the cognitive script that guides the interactions with other persons and forms the basis for the emotional regulation style of the subject. The possibility to experience a good and secure relationship in the caregiver–child interaction may develop a self-representation of being worthy of care; therefore, the secure child will develop both effective coping strategies and he or she will become aware of the possibility to count on others in case of need. In this perspective, attachment insecurity or disorganization may, in contrast, contribute to the development of maladaptive affect regulation strategies, which in turn may be a risk factor for the development of future psychopathology. Above all the attachment classification of disorganization is almost always associated with the development of externalizing problems and posttraumatic stress disorder in middle childhood (Carlson, 1998; Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010) and psychiatric disorders in adulthood (Lyons-Ruth & Jacobvitz, 2008).

Development of Ego States in Anorexia Nervosa

As suggested in the model proposed by Liotti and Farina (2011), the disorganization of attachment is central both as a mediator in emotional regulation in all situations of perceived vulnerability, and as a possible predictor of later dissociative development. Van der Hart, Nijenhuis, and Steele (2011) suggest that dissociation can also occur between dissociative parts of the personality that are not optimally integrated. The authors of this article argue that attachment relationships are foundational nuclei of such dissociated parts of the personality. It should be remembered that these are not autonomous multiple personalities but

“parts,” portions, subsystems of a single otherwise integrated system. During personal development, the simultaneous and paradoxical activation of attachment and defense/attack systems can lead to a deficit of the integrative functions of consciousness which, in turn, can lead to an increased vulnerability to dissociative reactions later in life in response to traumatic stressors (Liotti, 2004; Schore, 2001, 2002). Unresolved and disturbing affects resulting from early traumatic experiences may be fragmented into parts of the self, forming different ego states (Forgash & Copeley, 2008).

Several studies suggest the coexistence of dissociative processes and EDs (Espírito-Santo, Gonçalves, Rocha, & Cassimo, 2013; Farber, 2008; Haynos, & Fruzzetti, 2011; Waller, Ohanian, Meyer, Everill, & Rouse, 2001). Particularly, a study conducted by Farrington et al. (2002) found that, in a group of adolescent girls with a diagnosis of AN, as is for Anna, the dissociation was used to avoid processing the emotion of anger, and it appeared to be related to their use of somatization, and obsessive-compulsive features. Despite this evidence, as highlighted by Haynos and Fruzzetti (2011) research and treatment with the patients with AN have often failed to converge on the role of emotion regulation in the onset and maintenance of the ED.

The Control Part

Control is a central issue in AN (Jarman, Smith, & Walsh, 1997; Lao-Kaim et al., 2015; Lawrence, 1979; Surgenor, Horn, Plumridge, & Hudson, 2002; Zaccagnino, Civilotti, Cussino, Callerame, & Fernandez, in press). It may be implicated in the mechanism of avoidance of negative emotions, in the abuse of stereotypes in reading the surrounded reality and in the failure to recognize feasible strategies to handle stressful situations. Commonly, patients with AN have no compassion for themselves and are extremely self-critical (Dunkley & Grilo, 2007; Fennig et al., 2008). These characteristics are considered as decisive for the perpetration of the symptomatology and for the resistance to its treatment (Kelly & Tasca, 2016; Sutandar-Pinnock, Blake Woodside, Carter, Olmsted, & Kaplan, 2003). The terror to gain weight is the observable component of the psychopathology, but it hides a deeper terror and the control seems to have a protective role for the subject’s preservation (Zaccagnino, 2016).

Treatment of Eating Disorders

Given the serious nature of EDs and the effects on the individual’s health, many approaches have been proposed for the treatment of this pathology. The most effective approach is cognitive-behavioral therapy (CBT), which focuses on reducing the behavioral symptoms of the disorder (e.g., dieting, binge eating, purging) and addressing the distorted cognitions about body weight and shape. This therapy has achieved the most prolonged and lasting results as compared to any other type of therapy with this class of patients (Glasofer et al., 2013; Grilo, Masheb, Wilson, Gueorguieva, & White, 2011).

However, although the cognitive-behavioral approach has proved to be effective, it does not take into account the aspects relating to the importance of the experience of traumatic events, unsecure or disorganized attachment and the presence of a subsequent emotion dysregulation to the onset of EDs. Because today, there is a need for novel and innovative clinical approaches to the treatment for patients with AN (Haynos & Fruzzetti, 2011).

Eye Movement Desensitization and Reprocessing Therapy

Eye movement desensitization and reprocessing (EMDR) therapy is an eight-phase psychotherapy designed to address past negative experiences, current triggers of the symptoms developed from those experiences, and any future blocks to effective functioning. F. Shapiro (2001) describes EMDR as guided by the adaptive information processing (AIP) model, which posits that psychological disorders without an organic cause are caused by nonmetabolized memories stored in the brain.

The goal of EMDR procedures is to reactivate the client’s own neurologically based information processing through bilateral stimulation, which integrates the memory into the larger memory networks, and allows it to arrive at an adaptive resolution. AIP sees this process as normally functioning for most life experiences; a problem arises when normal information processing becomes “blocked” or is otherwise unable to gain a resolution for an experience. The efficacy of EMDR for the treatment of trauma has been well demonstrated in several meta-analyses (e.g., Bisson et al., 2007; Watts et al., 2013). EMDR’s efficacy as an evidence-based treatment for trauma is also supported by the recent study by Pagani and colleagues (2012) regarding the EMDR’s mechanism of action and its neurobiological substrate; findings suggest that, after bilateral ocular stimulation, traumatic events are processed at the cognitive level with a significant activation shift from limbic regions with high emotional valence to cortical regions.

The Use of EMDR Therapy for Patients With Eating Disorders

R. Shapiro (2000) suggested that the efficacy of EMDR, for difficult patients who tend toward dissociation and avoidance of disturbing emotions, occurs

first through the stabilization phase. This particular phase involves the construction of a strong therapeutic alliance that allows the patient to start the reprocessing of traumatic experiences in the context of a safe relationship. Given the highly disturbing emotions and sensations elicited by traumatic memories, the quality of patient–therapist relationship becomes extremely important (R. Shapiro, 2000).

Although preliminary evidence suggests that EMDR may be effective for the treatment of EDs (Cooke & Grand, 2006; Freedland et al., 2002; York, 2000), little research has examined experimentally the use of EMDR in this clinical population. A randomized study on 86 patients with AN conducted by Bloomgarden and Calogero (2008) regarding the perception of body image, identified the short- and long-term effects of EMDR in conjunction with standard residential treatment on subjects suffering from EDs. The evidence reported by their findings suggests that EMDR can reduce the distress about negative body image memories and reduce the body dissatisfaction at posttreatment, 3-month, and 12-month follow-up.

A single case study presented by Halvgaard (2015) regarding the effects of the of the EMDR therapy on a patient with "emotional eating" showed how the eating symptomatology and the conceptualization of the treatment was inserted in the context of the childhood traumatic experiences, which may contribute to the development of the eating disorder and in the emotional dysregulation. As in our case, the author implemented an adjusted version of the desensitization of triggers and urge reprocessing (DeTUR) protocol, including resource installation, affect management, ego state work, and the standard EMDR protocol. The subject reported an overall improvement in eating behavior, and the treatment resulted one of the ways to reduce weight over time and to ensure better results in stabilizing weight after weight loss.

Case Study

This case study presents an example of how the application of EMDR protocol is incorporated into the individual treatment of a young woman with a diagnosis of AN, and how it led to an improvement in the mental and physical well-being of the patient. Identifying details were changed to disguise the patient's identity and preserve her anonymity.

Presenting Problem

Anna was a 17-year-old female with a history of food restriction and abnormal eating behaviors. She had a younger sister who was suffering from an autoimmune disease. Her parents were separated, and she was suffering for the lack of parental care and attention because of her sister's condition. Anna was diagnosed at the age of 13 years with AN according to *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*) criteria (APA, 2000). Prior to this study, she had been hospitalized 4 times in the previous 4 years, for cycles of 2–8 months. She had been in psychodynamic therapy for 1 year and in CBT for 2 years. At the time of this study, she was an inpatient, and was 160 cm (5 ft 3 in.) tall and very underweight (28 kg, 62 lb), with a body mass index of 14.

Treatment

Her medical stabilization plan process included a first phase of refeeding (1 month), followed by the implementation of nutritional plans within the hospital context. Hospital treatment also included medical care from a physician to treat the effects of malnutrition. This treatment was very similar to that which she had received during each of her four prior hospitalizations.

The EMDR intervention was provided in hospital, twice a week (about 50-minute sessions) for 6 months at the age of 17 years. The treatment consisted of EMDR therapy, resource development installation, talk therapy, and ego state therapy.

Resource Development and Installation. Resource development and installation (RDI) is an EMDR-related procedure used to strengthen positive associations in positive memories and imagery and enhance emotional resilience and coping skills. It is often used in the preparation phase of EMDR therapy (Korn & Leeds, 2002).

Talk Therapy. The talk therapy sessions were used for debriefing and psychoeducation. These sessions are helpful to allow the patient to better understand child development, the dynamics related to attachment issues and the distorted perceptions of the world and self to change these perceptions and discover new patterns of behavior. They are also used to strengthen the challenging formation of therapeutic alliance as a collaborative relationship—an important element when working with patients with impaired attachment (Liotti, Cortina, & Farina, 2008; Liotti & Farina, 2011).

Ego State Therapy. Principally in the preparatory phase, but also during the entire therapeutic process it is important for the therapist to explain to patients the meaning of the "ego states" concept (Forgash & Copeley, 2008; Forgash, & Knipe, 2012; van der Hart, Groenendijk, Gonzalez, Mosquera, & Solomon, 2013;

van der Hart, Nijenhuis, & Solomon, 2010), and to specify that such parts play a fundamental role in their history and in the history of the eating disorder. In order for a climate of trust to be established, the therapist and patient must coconstruct together shared knowledge about the control part, as previously described. This dissociated aspect of her personality is understood to play a crucial role in maintaining the symptomatology. It is only by working with the control part in a context of coawareness, acceptance, and recognition, that open access to the elaboration of past traumatic experiences is possible (Zaccagnino, 2016).

EMDR Therapy. Dysfunctionally stored memories are considered to be the primary basis of clinical pathology. The reprocessing of these memories leads to resolution through reconsolidation and integration within the larger adaptive memory networks. The therapist helps the client identify the details of each memory/target and reprocess it (Oren & Solomon, 2012). For any target (memories, present triggers, and future situations), clients are asked to identify the most distressing part/image. They are asked to identify the words that go with this image, expressing a currently held irrational, self-limiting belief about themselves (referred to as the negative cognition [NC]), as well as a desired positive belief (positive cognition [PC]). They are asked to rate the perceived believability of the PC while focusing on the target image, using a 7-point Validity of Cognition (VOC) scale (where 1 = *completely false* and 7 = *totally true*). They are then asked to identify the current emotions related to the memory, their present level of disturbance on the Subjective Units of Disturbance (SUD) scale (where 0 = *no disturbance*; 10 = *highest disturbance*), and the location of the physical sensations related to the disturbance.

In Anna's case, the EMDR therapy followed AN protocol (Zaccagnino, 2016; Zaccagnino et al., in press). Briefly, it is based on reprocessing relational traumas and all the NCs arisen around them. A key point of the EMDR protocol in AN is the clinical work with the control part because the control itself and the tendency to perfectionism are essential parts of the onset and for the maintenance of the disorder.

Pretreatment Assessment

Anna's presentation met *DSM-IV-TR* diagnostic criteria for AN, with comorbid depressive symptoms and obsessive traits. She had a rigid and extremely restricted eating behavior, showed by a marked refusal of food, in association with a deep terror of gaining weight. She presented a denial of the seriousness of the low body weight and also her parents seemed to be unaware of their daughter's critical physical and medical conditions. Because of her recurrent hospitalizations, she had not attended school regularly since she was 15 years. Her social life was very compromised and restricted to a poor quality of relationship with peers.

Assessment of Attachment Status and Traumatic History. To assess Anna's state of mind on her past attachment experiences and to investigate possible traumatic events, she was administered the Adult Attachment Interview (AAI) before and after treatment. The AAI is a semistructured interview assessing an adult's "state of mind" regarding past attachment relationships. Subjects can be categorized as free, entangled, or dismissing. Moreover, they are also given a rating for both unresolved loss and unresolved trauma. The administration of the AAI at the beginning and at the end of therapy helps therapists to understand how the treatment may help patients to achieve a more balanced, thoughtful, and coherent vision of him or herself and his or her life.

On the AAI before treatment, Anna scored dismissing attachment style with both parents. In particular, she was classified as Ds1 (dismissing of attachment) because of strong idealization of both parents, denial of negative experiences, and feelings and high scores for insistence on lack of memory. Anna described her mother and her father as emotionally neglectful in several moments of her infancy. These behaviors were especially related to the parents' preoccupation for the other daughter's serious illness. Furthermore, Anna showed a marked discrepancy between the generalized picture of the mother as very friendly and episodes from childhood in which she described her mother as depressed: This condition often precluded contact and opportunities for interaction with her. The description of her past relationships showed that Anna was repeatedly persuaded to attempt to please her mother. In fact, she could not tell her mother her own problems because she expected a distressed or anxious reaction. The Involving Scale score, related to her mother, was high: Anna felt excessively responsible for her mother's feelings and for her defense of the relationship with her father. Moreover, she did not feel herself able to have a bond with her father because of her protection toward her mother.

The only traumatic events identified by Anna were her parents' separation, sister's disease, and mother's neglecting behaviors. The AAI scoring does not classify these experiences as traumas. These events are instead considered as Adverse Childhood Experiences (ACEs; Dube, Felitti, & Rishi, 2013). Anna's narration showed a loss of her ability to reason, loss of

organization, and coherence while describing these experiences.

Case Conceptualization

The main therapeutic objective with Anna was the achievement and then the maintenance of an appropriate body mass index in relation to her physical structure. As corollary goals, but not of secondary importance, the therapeutic work for Anna was aimed at reaching: (a) a comprehensive understanding of the meaning and the history of relational and social problems, as perceived through the lens of the attachment issues; (b) understanding, reading about, and regulating the emotional aspects and the relationship with the self; (c) learning how to trust in the relationship and seek for help and cooperation with her parents, her sister, and with peers.

Because Anna was in the acute phase of AN, it was necessary from the beginning to work on resources to actively work her motivation for treatment and to secure Anna's cooperation.

The first targets explored and processed with EMDR were the triggering event and all the episodes connected with it that elicited the onset of AN. After this, Anna's relational history was investigated to outline the mechanisms that led to the emotional dysregulation in the context of attachment. This was followed by the food-related critical core, focusing on the deepest meaning connected with it. To achieve these objectives and to process the relational traumatic adverse experiences, we employed parts' work through the use of the "dissociative table at mealtime" (Zaccagnino, 2016). This work specifically addressed the control part and to face the urgency of the meal. The therapist used the float back technique to trace back in her past life all the targets more directly connected with her vulnerability. In parallel, in accordance with the EMDR standard protocol, targets were identified and processed according to the past-present-future sequence.

The last part of the therapeutic process was based on the work on the history of the disease, on the symptomatology and on the memories connected to it, in accordance with the EMDR standard protocol.

Course of Treatment

Anna completed 5 sessions of resource development, 7 talk therapy and psychoeducation sessions, and 36 sessions of EMDR reprocessing over the course of approximately 6 months, integrated with ego state therapy. The alternance of EMDR sessions, psychoeducation, and talk therapy sessions depended on the patient's desire for debriefing.

Resource Development and Installation Sessions. Anna completed three sessions of RDI prior to, and two sessions of RDI during EMDR reprocessing. It was assumed that installing positive resources would help her with stabilization, affect regulation, and coping skills (Korn & Leeds, 2002; Leeds & Shapiro, 2000). The first resource offered was the safe place protocol. Anna visualized a "relaxing and comfortable place" and this was reinforced with bilateral stimulation. The next step was to identify needed resources, asking Anna what personal positive qualities would be helpful for her specific problems (Table 1). Her goals were becoming more effective across social situations, communicating her needs and feelings, and becoming more assertive and confident in social interactions.

During the following RDI sessions, Anna was asked to focus on specific positive autobiographical memories of experiencing that quality, or other resource experiences related to that quality that had no association with the negative memories to be treated with

TABLE 1. Summary of Goals and Resources in Resource Development and Installation Sessions

Goals	Resource
Improve communication with family members Handle distress in flawed relationship with parents Ask father if she could live with him and tell mother this	A visual memory of herself, asking for help during a previous hospital stay, feeling entitled to do that
Communicate more clearly with doctors and dieticians Lower reactivity in interactions with medical staff Face hospitalization	The model of an assertive aunt who was at ease in this type of relationships
Strengthen social ability especially in stressful relations with other hospital patients	A memory of times she solved misunderstandings and disputes with friends or when she felt self-confident with her social skills

EMDR. For her, these included memories of when she recalled "feeling worthy and loved, feeling like a person with skills." The memories of the competent and adequate adult state and the associated feelings and sensations were installed and strengthening with bilateral stimulation. Then, Anna was asked, while experiencing short sets of eye movements, to focus on using each resource in a future situation.

Talk Therapy Sessions. Through talk therapy sessions, the goal was to facilitate the regulation of emotions, particularly in relations with food behavior. Moreover, these sessions were used to enhance the results progressively achieved by promoting a better mastery and self-efficacy in stressful present situations.

Ego State Treatment. The goal of Anna's ego state treatment was to develop boundaries, cooperative goals, and a healthier attachment style. Anna was helped to describe a "home base" in which her ego states could find safety and relaxation and to create a workplace (an oval table with chairs for each part), where her parts could be accessed according to Fraser's (1991) dissociative table technique (see also Martin, 2012). Through dialogue with the therapist and an increased orientation, Anna was helped to create an internal framework of all her ego states and their roles, pain, and qualities. The treatment included the development of empathy for the system parts and an awareness and "coconsciousness" among the parts. During the therapy, the therapist formed alliances with Anna's parts and helped her to recognize her destructive, self-hating, and punitive ego states. She recognized the control part, describing its protective role from the identified overwhelming feelings. The treatment priorities were defined by working with the parts that were the most painful for Anna and EMDR was used to reprocess the associated painful memories.

EMDR Sessions. Following the three sessions of RDI and in association with the ego states work, difficult memories that surfaced during the AAI and the assessment were selected as initial targets for reprocessing. The EMDR standard protocol used all eight phases of treatment within the three-pronged approach (F. Shapiro, 2001). Most targets included NCs reflecting self-representations of unworthiness. Some recent experiences were reprocessed very quickly, allowing time for future template work within the same session (Table 2). During Anna's EMDR reprocessing sessions, the VOC would typically begin at 2 on average and reached a 7 prior to closure. Her SUD scores started at 10 on average and decreased to 0 or 1 prior to closure. SUD scores of 1 were deemed ecologically appropriate.

Initially, the EMDR reprocessing focused on targets regarding NCs of inadequacy and self-blame for her behaviors arising from family context. In fact, childhood material was quickly accessed during reprocessing, and childhood memories soon became the treatment targets. Anna gradually gained insight into how her present responses were rooted in her past.

After completing work on the first targets, subsequent targets were selected by using an affect bridge (Watkins, 1971) or "float back" (F. Shapiro, 2001): The therapist asked Anna to notice the negative beliefs, emotions, and sensations associated with the recent triggering events and then to allow her mind to float back to childhood, thus identifying an early related incident. An increase in self-acceptance and self-worth and a significant reduction of dysfunctional eating behaviors followed reprocessing sessions. In Table 2 is presented a summary of Anna's 10 reprocessing targets and cognitions.

Other sessions included EMDR work with the recent past and the present template in which Anna rehearsed (a) coping with a peer who told her that she was fat, (b) handling disturbing emotions while other patients looked at her while she was eating, (c) better communicating with the dietitian who was afraid of her weight gain, and (d) facing her mother when she had to tell her that she went to her father. During reprocessing, Anna became aware that she was able to express her feelings and she had a consequent sense of adequacy. She recognized that before treatment, she habitually had used dysfunctional eating behaviors to manage her emotions; instead, now she could express her feelings and needs in a satisfactory manner during moments of difficulty. She also became aware of her ability to make choices and choose more functional behaviors.

Anna was able to remember these scenes with no emotional disturbance and high confidence in her PC of "I'm worthy." She no longer had feelings of loneliness and inadequacy.

Posttreatment Results

Changes in the Eating Behaviors. At the end of the treatment Anna demonstrated improvements in body weight and no longer met diagnostic criteria for AN. She also showed an increased motivation to change, and she was able to find benefits of new improvements in her eating behavior, "When I feel hungry and I eat, then I feel better. I'm glad that I no longer think about this 24 hours a day. Now I have other things to think about."

At follow-up, after 12 and 24 months, Anna's weight was stable (55 kg, 121 lb), and her BMI was within normal limits (21.5).

TABLE 2. The 10 EMDR Targets and Cognitions

	Target	Memory Image	Cognitions
1	Eating disorder onset (age 13 years)	The pediatrician told her to lose weight because no one would have wanted her so fat.	NC: "I am wrong." PC: "I'm fine as I am."
2	Parents' separation (age 4 years)	Mother telling her father had left family	NC: "I'm not worthy." PC: "I'm worthy."
3	Autoimmune disease of her sister (at age 8 years)	Sister was particularly sick and Anna felt guilty for not being sick.	NC: "I'm not worthy." PC: "I'm worthy."
4	Autoimmune disease of her sister (at age 8 or 9 years)	Anna's mother neglecting her during the sister's illness	NC: "I'm worthless of care." PC: "I'm worthy of care."
5	Parents' separation (age 9 years)	Mother assumes the role of the victim toward the father.	NC: "I'm constrained." PC: "I'm not constrained."
6	Mother's neglect (age 7 years)	Image of depressed mother	NC: "I'm helpless." PC: "I'm able to manage the situation."
7	Parents' separation (age 10 years)	She sees her father who asks her not to go with him.	NC: "I'm wrong." PC: "I'm right."
8	Eating disorder (age 15 years)	She was very ill, had lost a lot of weight, so she was hospitalized.	NC: "I'm not important." PC: "I'm important."
9	Eating disorder (age 15 years)	She had to stay at home instead of going to school.	NC: "I'm not able." PC: "I'm able."
10	Eating disorder (age 15 years)	Other people forced her to eat.	NC: "I have no control." PC: "I can control myself."

Note. NC = negative cognition; PC = positive cognition.

Change in Attachment Status. After EMDR therapy, we observed the loss of dismissing status with an increase of attachment security. So, while Anna had previously attempted to avoid vulnerability and anxiety by denying painful truths and minimizing upsetting memories, posttreatment she became more comfortable in conversation and able to discuss the traumatic experiences. Her attachment status became earned secure (F1/2; Saunders, Jacobvitz, Zaccagnino, Beverung, & Hazen, 2011), although her narration tended to be slightly unemotional, she showed more coherence and balance in the description of her relationships.

Relationship With Self. The goal was to change the NC about her inadequacy and the consequent feeling of being excluded and wrong. She showed greater acceptance of herself and her personal value. For example, she said, "I can feel comfortable to stay with my friends and now I can have fun with them."

Emotional Regulation. The goal was to increase Anna's ability to maintain psychological control in demanding or stressful situations, to reduce exaggerated control, and to increase accessibility to more useful and functional regulatory behaviors. Anna showed good emotional recognition, expression, and regulation related to eating. She provided many statements supporting these changes, such as when she reported, ". . . With regard to eating, I feel calm, I manage it as a normal thing. Indeed, it seems to me I don't vent on food. If I get angry, I shout and this is enough."

Change in Life

Anna built better relationships with her parents and her sister, reducing the general stress level in her life. She continued to live with her mother, but she began to see his father more often.

Anna has returned to school. She improved her social skills with a better quality of interactions with peers, with an increased confidence in interacting with others and without avoiding social situations anymore.

Discussion

Anna's case is suggestive in a clinical perspective because it allows to propose the actual change factor.

Our approach was different from those that focus on the symptoms. We used our treatment conceptualization to develop an intervention strategy that included addressing the past history, the maintenance mechanisms, and the subjective resources. In particularly, this case study showed that addressing the relational traumas with EMDR therapy appeared to remedy Anna's eating disorder.

Treatment Implications

It may be useful to incorporate EMDR into treatment of the symptoms linked to specific relational traumatic experiences such as illustrated in this case study of an eating disorder. It appears that selecting negative memories related to both the attachment history and the eating disorder history, as the treatment targets for EMDR was appropriate in our single case of AN. Although at the present, time there are only a few studies about the efficacy of EMDR for treatment of EDs, this case report may be an example of a successful approach to the regulation of patients' affect and distressing thoughts and feelings in the presence of food or during the act of eating. Moreover, the data show the potential of a treatment in a short-time with significant and long-term improvements in body weight, as the follow-ups showed. In this case study, the efficacy of EMDR protocol is well demonstrated also by the presence of the previous 3 years of therapy (psychodynamic and CBT) that were unsuccessful.

The article also shows how the assessment of attachment status can be integrated with the EMDR approach both in the assessment and in developing a treatment plan. Assessing attachment representations through the AAI administration includes more than determining a patient's attachment classification status, which in Anna's case was dismissing. In a multimethod perspective, this assessment is particularly useful to detect the early relational traumas and their related unresolved status as targets for reprocessing.

Conclusion

Several limitations of this study should be considered. We presented only one case, so the results obtained may not be representative of those that would be obtained in other similar cases or in a larger sample. Anna was a hospital inpatient during this intervention, and it is not possible to determine how much of the outcome can be attributed to the inpatient treatment. Nevertheless this was Anna's fifth lengthy hospitalization and any benefits from prior hospital treatment were not maintained. In this case, treatment effects were maintained at 24-month follow-up.

Furthermore, the effectiveness of EMDR therapy for other EDs, such as BN or binge eating, is yet unclear. To conclude, the intent of this study was to test the effectiveness of EMDR therapy for treatment with a single case of AN. Randomized experimental studies with long-term follow-up are needed to determine its effectiveness on broader EDs pathology.

References

Abbate Daga, G., Quaranta, M., Notaro, G., Urani, C., Amianto, F., & Fassino, S. (2011). Family therapy and eating disorders in young female patients: State of the art. *Journal of Psychopathology*, *17*(1), 40–47.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.

Bailey, A. P., Parker, A. G., Colautti, L. A., Hart, L. M., Liu, P., & Hetrick, S. E. (2014). Mapping the evidence for the prevention and treatment of eating disorders in young people. *Journal of Eating Disorders*, *2*(1), 1.

Bisson, J. I., Ehlers, A., Matthews, R., Pilling, S., Richards, D., & Turner, S. (2007). Psychological treatments for chronic post-traumatic stress disorder: Systematic review and meta-analysis. *British Journal of Pharmacology*, *190*, 97–104.

Bloomgarden, A., & Calogero, R. M. (2008). A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. *Eating Disorders*, *16*, 418–427.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York, NY: Basic Books.

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *The American Journal of Orthopsychiatry*, *52*(4), 664–678.

Brown, C. A., Sabel, A. L., Gaudiani, J. L., & Mehler, P. S. (2015). Predictors of hypophosphatemia during refeeding of patients with severe anorexia nervosa. *International Journal of Eating Disorders*, *48*(7), 898–904.

Carlson, E. A. (1998). A prospective longitudinal study of attachment disorganization/disorientation. *Child Development*, *69*, 1107–1128.

Cooke, L., & Grand, C. (2006, September). *Treating eating disorders using EMDR and its variations*. Paper presented at the Annual EMDR International Association Conference, Philadelphia, PA.

Dube, S. R., Felitti, V. J., & Rishi, S. (2013). Moving beyond childhood adversity: Associations between salutogenic factors and subjective well-being among adult survivors of trauma. In M. Linde & K. Rutkowski (Eds.), *Hurting memories and beneficial forgetting: Posttraumatic stress disorders, biographical developments and social conflicts* (pp. 139–153). Waltham, MA: Elsevier.

Dunkley, D. M., & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation

of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy*, *45*(1), 139–149.

Espírito-Santo, H., Gonçalves, L., Rocha, P., & Cassimo, S. (2013). Psychoform and somatoform dissociation severity in eating disorders. *European Psychiatry*, *28*, 1547.

Farber, S. K. (2008). Dissociation, traumatic attachments, and self-harm: Eating disorders and self-mutilation. *Clinical Social Work Journal*, *36*(1), 63–72.

Farrington, A., Waller, G., Neiderman, M., Sutton, V., Chopping, J., & Lask, B. (2002). Dissociation in adolescent girls with anorexia: Relationship to comorbid psychopathology. *The Journal of Nervous and Mental Disease*, *190*(11), 746–751.

Fearon, R. M. P., Bakermans-Kranenburg, M. J., Van IJzendoorn, M. H., Lapsley, A., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, *81*, 435–456.

Fennig, S., Hadas, A., Itzhaky, L., Roe, D., Apter, A., & Shahar, G. (2008). Self-criticism is a key predictor of eating disorder dimensions among inpatient adolescent females. *International Journal of Eating Disorders*, *41*(8), 762–765.

Forgash, C., & Copeley, M. (2008). *Healing the heart of trauma and dissociation with EMDR and ego state therapy*. New York, NY: Springer Publishing.

Forgash, C., & Knipe, J. (2012). Integrating EMDR and ego state treatment for clients with trauma disorders. *Journal of EMDR Practice and Research*, *6*, 120–128.

Fraser, G. A. (1991). The dissociative table technique. *Dissociation*, *4*, 205–213.

Freedland, K. E., Skala, J. A., Carney, R. M., Raczynski, J. M., Taylor, C. B., Mendes de Leon, C. F., . . . Veith, R. C. (2002). The Depression Interview and Structured Hamilton (DISH): Rationale, development, characteristics and clinical validity. *Psychosomatic Medicine*, *64*, 897–905.

George, C., & Solomon, J. (1996). Representational models of relationships: Links between caregiving and attachment. *Infant Mental Health Journal*, *17*, 198–216.

Glasofer, D. R., Haaga, D. A., Hannallah, L., Field, S. E., Kozlosky, M., Reynolds, J., . . . Tanofsky-Kraff, M. (2013). Self-efficacy beliefs and eating behavior in adolescent girls at-risk for excess weight gain and binge eating disorder. *The International Journal of Eating Disorders*, *4*, 663–668.

Grilo, C. M., Masheb, R. M., Wilson G. T., Gueorguieva R., & White, M. A. (2011). Cognitive-behavioral therapy, behavioral weight loss, and sequential treatment for obese patients with binge-eating disorder. *Journal of Consulting and Clinical Psychology*, *79*, 675–685.

Halvgaard, K. (2015). Single case study: Does EMDR psychotherapy work on emotional eating? *Journal of EMDR Practice and Research*, *9*(4), 188–197.

Haynos, A. F., & Fruzzetti, A. E. (2011). Anorexia nervosa as a disorder of emotion dysregulation: Evidence and treatment implications. *Clinical Psychology: Science and Practice*, *18*(3), 183–202.

Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, *61*(3), 348–358.

Hund, A. R., & Espelage, D. L. (2005). Childhood sexual abuse, disordered eating, alexithymia, and general distress: A mediation model. *Journal of Counseling Psychology*, *52*, 559–573.

Jarman, M., Smith, J. A., & Walsh, S. (1997). The psychological battle for control: A qualitative study of healthcare professionals' understandings of the treatment of anorexia nervosa. *Journal of Community & Applied Social Psychology*, *7*(2), 137–152.

Johnson, J. G., Cohen, P., Chen, H., Kasen, S., & Brook, J. S. (2006). Parenting behaviors associated with risk for offspring personality disorder during adulthood. *Archives of General Psychiatry*, *63*(5), 579–587.

Katzman, D. K. (2005). Medical complications in adolescents with anorexia nervosa: A review of the literature. *International Journal of Eating Disorders*, *37*(Suppl. 1), S52–S59.

Kelly, A. C., & Tasca, G. A. (2016). Within-persons predictors of change during eating disorders treatment: An examination of self-compassion, self-criticism, shame, and eating disorder symptoms. *International Journal of Eating Disorders*, *49*, 716–722.

Korn, D. L., & Leeds, A. M. (2002). Preliminary evidence of efficacy for EMDR resource development and installation in the stabilization phase of treatment of complex posttraumatic stress disorder. *Journal of Clinical Psychology*, *58*, 1465–1487.

Lao-Kaim, N. P., Fonville, L., Giampietro, V. P., Williams, S. C., Simmons, A., & Tchanturia, K. (2015). Aberrant function of learning and cognitive control networks underlie inefficient cognitive flexibility in anorexia nervosa: A cross-sectional fMRI study. *PLoS One*, *10*(5), e0124027.

Lawrence, M. (1979). Anorexia nervosa: The control paradox. *Women's Studies International Quarterly*, *2*(1), 93–101.

Leeds, A. M., & Shapiro, F. (2000). EMDR and resource installation: Principles and procedures for enhancing current functioning and resolving traumatic experiences. In J. Carlson & L. Sperry (Eds.), *Brief therapy strategies with individuals and couples* (pp. 469–534). Phoenix, AZ: Zeig/Tucker.

Liotti, G. (2004). Trauma, dissociation and disorganized attachment: Three strands of a single braid. *Psychotherapy: Theory, Research, Practice, Training*, *4*, 472–486.

Liotti, G., Cortina, M., & Farina, B. (2008). Attachment theory and multiple integrated treatments of borderline patients. *Journal of the American Academy of Psychoanalysis*, *36*, 295–316.

Liotti, G., & Farina, B. (2011). *Sviluppi traumatici. Eziopatogenesi, clinica e terapia della dimensione dissociativa* [Traumatic developments. Etiology, clinical issues and treatment of dissociative dimension]. Milan, Italy: Raffaello Cortina.

Lyons-Ruth, K., & Jacobvitz, D. (2008). Attachment disorganization: Genetic factors, parenting contexts, and developmental transformation from infancy to adulthood. In

J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research and clinical applications* (pp. 666–697). New York, NY: Guilford Press.

Martin, K. M. (2012). How to use Fraser's dissociative table technique to access and work with emotional parts of the personality. *Journal of EMDR Practice and Research*, *6*(4), 179–186.

Messman-Moore, T. L., & Garrigus, A. S. (2007). The association of child abuse and eating disorder symptomatology: The importance of multiple forms of abuse and revictimization. *Journal of Aggression Maltreatment and Trauma*, *14*, 51–72.

Oren, E., & Solomon, R. (2012). *La thérapie EMDR : Un aperc¸ u de ses développements et mécanismes d'action* [EMDR Therapy: An overview of its developments and mechanisms of action]. *Revue Européenne de Psychologie Appliquée*, *62*, 197–203.

Pagani, M., Di Lorenzo, G., Verardo, A. R., Nicolais, G., Monaco, L., Lauretti, G., . . . Siracusano, A. (2012). Neurobiological correlates of EMDR monitoring—an EEG study. *PLoS One*, *7*(9), e45753.

Racine, S. E., & Wildes, J. E. (2015). Emotion dysregulation and anorexia nervosa: An exploration of the role of childhood abuse. *International Journal of Eating Disorders*, *48*(1), 55–58.

Sabel, A. L., Gaudiani, J. L., Statland, B., & Mehler, P. S. (2013). Hematological abnormalities in severe anorexia nervosa. *Annals of Hematology*, *92*(5), 605–613.

Saunders, R., Jacobvitz, D., Zaccagnino, M., Beverung, L. M., & Hazen, N. (2011). Pathways to earned-security: The role of alternative support figures. *Attachment & Human Development*, *13*(4), 403–420.

Schore, A. (2001). The effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, *22*, 7–66.

Schore, A. (2002), Dysregulation of the right brain: A fundamental mechanism of traumatic attachment and the psychopathogenesis of posttraumatic stress disorder. *The Australian and New Zealand Journal of Psychiatry*, *36*, 9–30.

Schwartz, M., & Gay, P. (1996). Physical and sexual abuse, neglect and early disorder symptoms. In M. F. Schwartz & L. Cohn (Eds.), *Sexual abuse and eating disorders* (pp. 15–30). New York, NY: Brunner/Mazel.

Shapiro, F. (2001). Eye movement desensitization and reprocessing (EMDR) and the anxiety disorders: Clinical and research implications of an integrated psychotherapy treatment. *Psicoterapia Cognitiva e Comportamentale*, *7*, 43–75.

Shapiro, R. (2000, September). *An EMDR two-hand interweave*. Paper presented at the 5th EMDR International Association Conference, Toronto, ON.

Siegel, D. J. (1999). *The developing mind: Toward a neurobiology of interpersonal experience*. NewYork, NY: Guilford Press.

Speranza, A. M., & Alberigi, E. (2006). *La relazione tra abuso e disturbi alimentari: Il ruolo della dissociazione* [The relationship between abuse and eating disorders: the role of dissociation]. *Maltrattamento e Abuso all'Infanzia*, *8*(1), 23–47.

Steiger, H., & Zankor, M. (1990). Sexual Traumata among eating-disordered, psychiatric, and normal female groups: Comparison of prevalences and defense styles. *Journal of Interpersonal Violence*, *5*, 74–86.

Surgenor, L. J., Horn, J., Plumridge, E. W., & Hudson, S. M. (2002). Anorexia nervosa and psychological control: A reexamination of selected theoretical accounts. *European Eating Disorders Review*, *10*(2), 85–101.

Sutandar-Pinnock, K., Blake Woodside, D., Carter, J. C., Olmsted, M. P., & Kaplan, A. S. (2003). Perfectionism in anorexia nervosa: A 6–24-month follow-up study. *International Journal of Eating Disorders*, *33*(2), 225–229.

van der Hart, O., Groenendijk, M., Gonzalez, A., Mosquera, D., & Solomon, R. (2013). Dissociation of the personality and EMDR therapy in complex trauma-related disorders: Applications in the stabilization phase. *Journal of EMDR Practice and Research*, *7*(2), 81–94.

van der Hart, O., Nijenhuis, E. R. S., & Solomon, R. (2010). Dissociation of the personality in complex trauma-related disorders and EMDR: Theoretical considerations. *Journal of EMDR Practice and Research*, *4*(2), 76–92.

van der Hart, O., Nijenhuis, E. R. S., & Steele, K. (2011). *Fantasmi nel sé. Trauma e trattamento della dissociazione strutturale* [The haunted self. Structural dissociation and the treatment of chronic traumatization]. New York, NY: Norton.

Vize, C. M., & Cooper, P. J. (1995). Sexual abuse in patients with eating disorder, patients with depression, and normal controls: A comparative study. *British Journal of Psychiatry*, *167*, 80–85.

Waller, G., Ohanian, V., Meyer, C., Everill, J., & Rouse, H. (2001). The utility of dimensional and categorical approaches to understanding dissociation in the eating disorders. *British Journal of Clinical Psychology*, *40*(4), 387–397.

Watkins, J. G. (1971). The affect bridge: A hypnoanalytic technique. *International Journal of Clinical and Experimental Hypnosis*, *19*, 21–27.

Watts, B. V., Schnurr, P. P., Mayo, L., Young-Xu, Y., Weeks, W. B., & Friedman, M. J. (2013). Meta-analysis of the efficacy of treatments for posttraumatic stress disorder. *Journal of Clinical Psychiatry*, *74*, 541–550.

Welch, S., & Fairburn, C. (1994). Sexual abuse and bulimia nervosa: Three integrated case control comparisons. *American Journal of Psychiatry*, *151*, 402–407.

York, C. (2000, November). *The use of EMDR in the treatment of eating disorders*. Paper presented at the annual Renfrew Center Foundation Conference for Professionals, Philadelphia, PA.

Zaccagnino, M. (2016). *EMDR protocol for the management of dysfunctional eating behaviors in anorexia nervosa*. Paper presented at the 17th EMDR Europe Conference, The Hague, The Netherlands.

Zaccagnino, M., Civilotti, C., Cussino, M., Callerame, C., & Fernandez, I. (in press). *EMDR in anorexia nervosa: From theoretical framework to treatment guidelines*. Manuscript submitted for publication.

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