Single Case Study: Does EMDR Psychotherapy Work on Emotional Eating?

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This article presents the methods and results of a single case study treating the effects of "emotional eating" (EE). It provides a comprehensive review of the literature related to obesity and emotional eating; explains childhood experiences, which may contribute to its development; and describes how emotional eating can become a default behavior for affect regulation. The background for the research is the worldwide epidemic of overeating and obesity. The study was designed to examine whether treating the symptoms of EE with selected protocols and methods within eye movement desensitization and reprocessing (EMDR) psychotherapy would have a positive effect, and the participant, a 55-year-old woman, was treated with 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 treatment consisted of 6 weekly meetings, each lasting 1.5 hours, and 2 follow-up meetings after 3 and 6 months. The measures, which were self-reported on a qualitative scale (0–10), included the experienced feeling of control in general (affect regulation) in specific eating behavior before and after the treatment, reduction of urge in triggering situations, number of situations with emotional eating per week, and body image before and after the treatment. The participant experienced an overall positive change in eating behavior, and the treatment could be one of the ways to reduce weight over time and to ensure better results in stabilizing weight after weight loss.

Keywords: eating disorders (EDs); emotional eating; affect regulation; trauma; eye movement desensitization and reprocessing (EMDR)

Obesity has become a growing problem in developed countries, and according to the World Health Organization (WHO, 2015), overweight and obesity are linked to more deaths worldwide than underweight. According to the WHO, in 2014, more than 1.9 billion adults aged 18 years and older were overweight. Of these, more than 600 million were obese. In 2014, 39% of adults aged 18 years and older were overweight, and 13% were obese. In 2013, 42 million children younger than the age of 5 years were overweight or obese. The incidence of obesity nearly doubled between 1980 and 2008. Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2). The WHO defines overweight as a BMI greater than or equal to 25 and obesity as a BMI greater than or equal to 30. The obesity epidemic is one of the most serious health problems facing the Western countries. Despite a wide range of efforts, and a common understanding that overweight is reduced by increase of physical activity and eating less, an increasing number of people are struggling with overweight and obesity, and new approaches to prevention and treatment therefore need to be examined. This case study considers how emotional factors contribute to the problem and whether eye movement desensitization and reprocessing (EMDR) psychotherapy has a positive effect in treating emotional eating (EE).

Research Question

Can you demonstrate positive effects of selected protocols and methods within the EMDR psychotherapy on emotional eating and as a result recommend this

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approach in treating the emotional aspects of disturbed eating behavior and development of obesity?

Literature Review

Eating Disorders

Eating disorders (EDs) are complex chronic illnesses with physical, social, and psychological ramifications. The thread of obsessive concern with food, weight and appearance, inappropriate eating behavior, and body image distortions runs through anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED). The same thread runs through disordered eating—that is, problematic eating, where one eats "not out of physical hunger, but to soothe, numb, comfort, or avoid" (R. Shapiro, 2009), which is called emotional eating in this article. The National Institute for Health and Care Excellence (NICE, 2004) states that individuals who have EDs not otherwise specified should be treated in line with the treatment for the ED their symptoms most closely resemble. The ED most like EE is BED. Interestingly, the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., *DSM-5*) does not list EE among any of the criteria for EDs, taking into consideration the increasing scale and serious consequences of this phenomenon, as pointed out earlier.

Psychogenic Overweight

According to Hart (2006), EDs can be divided into AN, bulimia, and psychogenic overweight, also known as *comfort eating* or *emotional eating*. Psychogenic overweight is here seen as a limbic disturbance, initiated as a sort of self-soothing to meet emotional uneasiness that cannot be integrated into the mentalizing functions of the prefrontal cortex. Instead, it will be expressed on a limbic level, that is, through somatization. This dissociation results in an inner feeling of emptiness, and this diffuse emotionality is replaced among other things by the consumption of food. The physiological and psychological needs are temporarily, although never entirely, satisfied. Eating gives a feeling of satisfaction because it activates the same structures as if you had social contact. According to Hart, sugar stimulates the release of opioids that again reduce both psychical and psychological pain. Research shows that mice, when separated from their mothers, cry less from separation if they drink water with sugar.

Emotional Eating

The reasons for the development of obesity are complex and caused by multiple factors such as neurobiological, genetic, cultural, psychological, social, and physical perspectives (R. Shapiro, 2009). This case study considers how emotional factors contribute to the problem and how the eating behavior is activated not by physical hunger but by an experience of a sudden hunger and craving for certain, typically high-fat and high-sugar "comfort"-food items (Campbell, 2011). The hunger is connected with upsetting emotions, and food is used as a primary source of comfort, coping, and emotional fulfillment, also called *emotional eating*.

Emotional Processes and Obesity

In their article entitled "Emotions and Eating Behaviour: Implications for the Current Obesity Epidemic," Levitan and Davis (2010) consider the role of emotions in eating behavior and in the current obesity epidemic, focusing on two phenomena: the stress-related/emotional eating, which describes the use of high-caloric, highly palatable foods to deal with negative emotions, and overeating as a form of addiction. As a result of their review of several studies, they conclude that there is substantial evidence that emotional regulation plays a critical role in food consumption, and focus on emotional processes will be necessary if significant progress is to be made in addressing the obesity epidemic. They consider attachment theory, which focuses on normal and abnormal emotional regulation, to be an important approach. Of particular concern, too, is the fact that high-caloric, highly palatable foods, which are the most problematic in terms of weight gain and obesity, also have the strongest effect on alleviating negative mood states in most contexts and therefore have a critical influence on the EE behavior. Stress and anxiety are also strong contributors to EE, suggesting that multiple treatment approaches used in combination may be necessary for major progress to occur.

Avoidance of Feelings

Roth (1992) was among the first to link compulsive eating and perpetual dieting with deeply personal and spiritual issues that go far beyond food, weight, and body image. She shows how dieting and compulsive eating often become a substitute for intimacy. She shows why many people overeat in an attempt to satisfy their emotional hunger and why weight loss frequently just uncovers a new set of problems.

Maine (2000) addresses the issue and explains the impact of a cultural and economic system that undermines self-worth, self-acceptance, and self-control. EE is often approached in terms of how to avoid or get rid of the feelings. In the literature and in lifestyle

programs, people are often advised to engage in distracting activities, such as taking a walk or a bubble bath, as a way to avoid EE, without the understanding of the self-regulatory function of the reach for food. Instead, the individual needs to develop the ability to tolerate uncomfortable feelings and to regulate the intensity of feelings (Matz & Frankel, 2004).

Albers (2009) introduces a collection of mindful skills and practices that help individuals to cope with these difficult feelings. This concept of mindful eating is probably helpful. However, mindful eating, distraction, or avoiding feeling do not address deeper emotional or traumatic experiences from the past, which in this study is considered to be the new and crucial approach for dealing with EE; this is essential in understanding the aim of this case study's application of EMDR to EE. Whether EE stems from early traumatic material dysfunctionally stored in the memory system in the brain, to be explained later, or from a bad habit and unfortunate choice of soothing strategy, the hypothesis is that treatment has to be focused both on the past history (trauma), present triggering eating situations, and future affect regulation.

Affect Regulation

Disturbed eating patterns can in part be conceptualized as an affect management problem with roots in early attachment relationships. The style of our early attachments to primary caregivers is crucial in determining personality development, and affect regulation develops out of these early attachment experiences (Ainsworth & Bell, 1970; Bowlby, 1969, 1973, 1980; R. Shapiro, 2009).

Strategies for affect regulation are encoded, unconscious to unconscious, mother to infant, through psychoneurobiological mechanisms for coping with stress. A secure, healthy attachment facilitated by emotional attunement is critical to the development of affect regulation, and for people with EDs, ". . . food symbolizes the time when merger of mother with baby was or should have been a soothing experience" (Scholom, 2009, p. 116). The binge eater and the person suffering from EE lack an internal soothing presence to manage anxiety and turn to food, symbolic of the good mother. Affect regulation is expressed via the EE behavior, and defense mechanisms are forms of emotional regulation strategies for avoiding, minimizing, or converting affects that are too difficult to tolerate.

Trauma

According to a Danish study by Elklit and Ilfeldt (2005), more than 40% of a group of 286 obese people—27 male and 259 female participants aged 15–74 years—had experienced one or more traumatizing life experiences, such as sexual abuse, mental and physical abuse, violence, neglect, or the loss of a close relative. According to the survey, 47.9% of the group experienced one or more intrusive symptoms, which is one of the criteria for a diagnosis of posttraumatic stress disorder (PTSD). Meanwhile, 80% of the group stated that they had felt helpless and that the traumatizing experiences had triggered the need for comfort food and marked the day when food became a soothing strategy and the overweight had begun. The study sees obesity as psychologically determined, often but not always with a traumatic etiology, and consequently one of the recommendations for treatment in the study is trauma treatment.

Traumatic Life Experiences and Obesity

These findings correspond to the Adverse Childhood Experiences (ACE) study (http://www.cdc.gov/violenceprevention/acestudy/), which is one of the largest investigations ever conducted to assess associations between childhood maltreatment and later-life health and well-being. The study is a collaboration between the Centers for Disease Control and Prevention and Kaiser Permanente's Health Appraisal Clinic in San Diego. More than 17,000 health maintenance organization (HMO) members undergoing a comprehensive physical examination chose to provide detailed information about their childhood experience of abuse, neglect, and family dysfunction.

The ACE study revealed that traumatic life experiences during childhood and adolescence are far more common than expected and that the impact of the trauma pervades the adult's life, correlating with a wide range of problems, obesity being one of them (van der Kolk, 2014). According to van der Kolk (2014), trauma produces actual physiological changes, including a recalibration of the brain's alarm system, an increase in stress hormone activity, and alterations in the system that filters relevant information from irrelevant information. Furthermore, trauma compromises the brain area that communicates the physical, embodied feeling of being alive. These changes explain why traumatized individuals become hypervigilant to threat and so often keep repeating the same problems and have trouble learning from experience; this is not a result of moral failings or a sign of a lack of willpower or bad character but is caused by actual changes in the brain.

Treatment of Trauma

According to van der Kolk (2014), one of the most important findings from treating trauma is the fact that

"remembering the trauma with all its associated affect, does not, as Breuer and Freud claimed back in 1893, necessarily resolve it" (p. 194) and "research in contemporary exposure treatment, a staple of cognitive behavioral therapy, has similarly disappointing results" (p. 194). Fundamentally, there are three avenues of treatment to help reverse the damage, according to van der Kolk: "1) top down, by talking, (re-)connecting with others, and allowing ourselves to know and understand what is going on with us, while processing the memories of the trauma; 2) by taking medicines that shut down inappropriate alarm reaction, or by utilizing other technologies that change the way the brain organizes information; and 3) bottom up: by allowing the body to have experiences that deeply and viscerally contradict the helplessness, rage, or collapse that result from trauma" (p. 3).

One of the recommended approaches is EMDR psychotherapy, which is a way to help people revisit their traumatic past without becoming retraumatized and to allow effective memory processing and trauma solution. According to van der Kolk (2014), "clinical practice has always been a hotbed for experimentation. Some experiments fail, some succeed, and some, like EMDR, dialectical behavior therapy, and internal family systems therapy, go on to change the way therapy is practiced" (p. 262). These findings and considerations are the basis for the focus and selection of the method in this case study, which will be presented in the following section.

EMDR Psychotherapy

EMDR is recognized as a scientifically supported and effective treatment for trauma that over the years has been shown to be an efficient approach to address psychological and physiological symptoms with remarkable results (F. Shapiro, 2014). EMDR was developed by Dr. Francine Shapiro. The therapy was introduced in 1989 with the publication of a randomized controlled trial evaluating its effects with trauma victims (F. Shapiro, 1989). Since then, substantial research has been conducted, which supports the positive effect of EMDR therapy and documents that EMDR therapy provides relief from various psychological and somatic complaints (F. Shapiro, 2014; based on the adaptive information processing (AIP) model of Solomon & Shapiro, 2008).

The Adaptive Information Processing Model

This model posits that the primary foundations of mental health disorders are unprocessed memories of earlier life experiences. It appears that the high level of arousal engendered by distressing life events causes them to be stored in memory in the limbic, nonverbal part of the brain with the original emotions, physical sensations, and beliefs. When these dysfunctionally stored memories are triggered, this unprocessed material often results in pathological or maladaptive responses to what might be an ordinary event. The flashbacks and intrusive thoughts of PTSD are examples of symptoms resulting from the triggering of these memories. Besides severe symptoms of PTSD, named *big T* traumas, a wide range of life experiences can be stored in a dysfunctional way, providing the basis for diverse symptoms that include negative affective, somatic, and cognitive responses in the present, which will be referred to as *small t* traumas (Solomon & Shapiro, 2008). The goal of EMDR psychotherapy is to access and process these memories and targeted experiences and transfer them from implicit and episodic memory to explicit and semantic memory systems. The originally experienced negative emotions, physical sensations, and beliefs are desensitized as the targeted memory is integrated with more adaptive information.

Eight-Phase Treatment Approach

EMDR therapy is an eight-phase treatment approach (F. Shapiro, 2001) composed of standardized protocols and procedures that facilitate a comprehensive evaluation of the clinical picture, client preparation, and processing of past events that caused the pathology, current disturbing situations, and future challenges. One of the components used during the reprocessing phases is composed of dual attention stimuli in the form of bilateral eye movements, taps, or tones.

The processing occurs in a systematic manner, including (a) client history and treatment planning; (b) preparation to include resourcing as needed; (c) assessment of the EMDR target memory; (d) desensitization using bilateral stimulation (BLS); (e) installation of the positive cognition (PC); (f) body scan; (g) closure of incomplete sessions, and preparation for session to end; and (h) reevaluation of the target at the subsequent session.

A justified hypothesis then is that EE and the eventual following obesity can be treated with an EMDR approach focusing on past trauma history, the deeper current emotional triggers that activate the disturbed eating behavior, and the future affect regulation.

Review of EMDR and the Treatment of EE

A growing body of literature indicates that EMDR can be useful in the treatment of a wide range of disorders

(F. Shapiro, 2014). However, the research literature is relatively sparse in documenting the uses of EMDR for clients with addictions, and even less information is available to document the use of EMDR with behavioral addictions such as EE (O'Brien & Abel, 2011). However, EMDR psychotherapy and successful treatment of different EDs is presented and discussed by R. Shapiro (2009). Scholom (2009) sees binge eating and EE, in part, as an affect management problem with roots in early attachment relationships and describe how EMDR gets at the early nonverbal internal object relations visually imprinted and stored in the right hemisphere: "EMDR treatment of early negative experiences fostering adaptive information processing paired with emotional, empathic attunement within the therapeutic relationship gives the ED person opportunities to reparent and rectify attachment problems" (p. 117). During treatment, special attention is paid to the attachment history, psychosocial development, trauma, and history of the emotional disorder. Identification of resources and building of positive networks are crucial for EMDR processing to forge new connections between the targeted dysfunctional memory network and those holding more adaptive information: "The focus is to foster the client's ability to identify the feelings that they so tenaciously defend against" (Scholom, 2009, p. 122). Furthermore, different affect management techniques, psychoeducation in general, and a model for attuned eating are recommended in the treatment of binge eating and EE.

Neurobiological Perspective

Cooke and Grand (2009) see EDs from a neurobiological perspective, which includes a basic understanding of appetite mechanisms and the effect of prolonged stress. EDs are usually preceded by a stressful life event or challenge that strains the individual's coping resources, which again alters physiological and psychological systems. Through advances in neurobiology, a more dynamic understanding of how stress impacts ED symptoms is available. The hypothalamus controls many important functions, including appetite and the stress response, and is the main center for satiety and thermogenesis. This center reads the genetically predetermined set point for normal body composition and ensures that the body keeps in balance by effecting appropriate feedback mechanisms such as appetite and thermogenesis. One hypothesis is that EDs stem not only from a missetting or misreading of the set-point reference but also from problems in the malfunctioning of the feedback corrective mechanisms: "This results in an overshooting in obesity" (Cooke & Grand, 2009, p. 130). The limbic system—the emotional control center—controls the hypothalamus, and under stress, the limbic system sounds an alarm, which stimulates the hypothalamus to release corticotrophin-releasing hormone (CRH). CRH stimulates the pituitary gland to release adrenocorticotropic hormone (ACTH). In response, the sympathetic nervous system releases norepinephrine and epinephrine, which increase heart rate, respiration, and blood flow, to prepare for danger, igniting our fight-or-flight response. The symptoms are often dissociation, impairment in the ability of self-regulation and interactive regulation, little body awareness, little affect tolerance, and a general chronic emotional dysfunction. The limbic systems are activated and constantly alarming, making connections intolerable and hindering the capacity to learn new information. BED helps clients avoid distressing emotions, decreasing activation of schemata related to threats of safety, well-being, and self-esteem. EMDR can, according to Cooke and Grand, counteract the effect of prolonged emotional stress by decreasing activation of these perceived threats and thereby improve neurobiological functioning. Treatment needs to focus on stabilizing the limbic activation and teaching the client to regulate the affect in the triggering situations, and to develop self-regulatory abilities in the activities of daily life. The treatment consists of three steps: stabilization, processing trauma, and reintegration. With a better regulation of the overactivated limbic physiology caused by many interventions, and with the affect management protocol (York & Leeds, 2001) being one of the methods, the client can begin to deal with underlying traumas, losses, or wounds that are activating the EE behavior, thereby increasing frontal lobe activity.

Ego States and Dissociation

R. Shapiro (2009) presents interesting work treating AN and BED and has discovered the need to work with ego states and dissociation in bringing about change with this difficult population. Ego states refer to the fact that the personality is not

> a fixed, monolithic entity. Rather it appears to be made of parts or states, some of which mature with the organism, others that become fixed or frozen in time at an earlier developmental stage. These arrested states typically form at the time of a traumatic experience. (p. 194)

Dissociative strategies help the client to disconnect from painful feelings, body sensations, and self-experience generated by trauma and, by doing so, to form a new ego state holding the pain. EDs seem

to mask underlying dissociative ego states that need to be integrated into the self. Within EMDR psychotherapy, these parts are conceptualized as dysfunctionally stored experiences unavailable to the corrective and healing powers of the prefrontal cortex (F. Shapiro, 2001). The purpose is to develop inner resources and to integrate fragmented parts of the self and thereby get to know the different emotional parts that fuel the dysfunctional eating behavior. It might be difficult, especially when the state is so dissociated that it does not experience the bodily consequences of its behavior. Ego state work is described by Watkins and Watkins (1998), Knipe (2012), and Schwartz (2001), and useful EMDR protocols are presented by Forgash (Luber et al., pp. 209–233).

Case Study

Method

In the literature, two different protocols are recommended for the treatment of addictions: the craving extinguished (CravEx) protocol, an EMDR approach to treat substance abuse and addiction developed by M. Hase (Luber et al., 2010), and the desensitization of triggers and urge reprocessing (DeTUR) protocol, developed by Popky (Luber et al., 2010). However, neither of these protocols was explicitly designed to treat EE. Based on a review of EMDR and the treatment of EE and a conversation with Dr. Michael Hase (workshop June 1 and 2, 2015, Copenhagen), the DeTUR protocol was chosen as the one to apply in this case study. This protocol was developed to help clients reinforce positive coping by focusing on both treatment goals and relapse triggers. In the first part of the DeTUR protocol, the client focuses on the positive treatment goal. The client develops an image of what life would be like when changes are made. After enhancing this goal through the use of visual imagery reinforced by BLS, the treatment focuses on developing both internal and external resources to support change. Finally, each of the situations in the client's life that trigger the unwanted behavior is treated. This protocol, combining a future positive treatment goal with systematic desensitization of triggers, has been recommended by Dr. Michael Hase when the issue has more to do with a behavioral addiction (EE) than substance abuse, where focus is on the addiction memory.

The DeTUR protocol had to be adjusted with some of the findings presented earlier in this article:

- Resource installation throughout the treatment
- Focus on the initial stabilization phase before trauma treatment
- Affect management skills, that is, the affect tolerance protocol (York & Leeds, 2001)
- Attachment history, psychosocial development, trauma and history of the emotional disorder, and identification of resources
- Ego state work
- The standard EMDR protocol

Design. The case study included an EMDR therapeutic treatment comprising an adjusted version of the DeTUR protocol and consisted of six weekly meetings, each lasting 1.5 hours, and two follow-up meetings after 3 and 6 months.

Participant. The client was a 55-year-old woman who has struggled with weight problems for most of her adult life, with a BMI that has fluctuated between 23 and 29. She needs help to handle the emotional element in her eating behavior and reduce the number of situations during the day where she experiences loss of control in relation to food. The client stated the following goal for her treatment: "I sometimes eat as a result of emotional arousal, and I eat when I actually don't want to. I would like to increase my awareness in these specific situations and find ways to act differently, to make other choices." Notice that the client's goal is not to lose weight, but to regain a better affect regulation and reduce the emotional arousal in triggering situations. The client contacted the clinic by herself.

Treatment. The following section presents the adjusted DeTUR protocol and the 10 phases of treatment, with a summary of the essential approaches and considerations.

Phase 1: History Intake and Evaluation of the Client. High and low points in her life and her ED history/trauma history were explored, as inspired by Hoffman and Luber (Luber, 2009, p. 5). It turned out that she had had a baby sister at the age of 7 years, which significantly changed her role in the family. She got less attention and was appraised by parents and grandparents whenever she finished a plate of food and when she was kind and made no noise. From her history intake, it became clear that the client did not suffer from "big T" trauma, as mentioned earlier (p. 6), but rather early life experiences that could be referred to as "small t" traumas. The client's attachment style and core beliefs were evaluated to know more about the client's strengths, needs and deficits, and internal and external resources. Her parents were both tall and slim, and they did not speak nicely about people being obese, so being slim was important in the family and one of the underlying beliefs. Her motivation to change approach and eating behavior was rated high and

the treatment plan was introduced. The treatment plan was organized according to the following:

Present: the current situation and the relationship with food today and treatment goal, focus on present triggers
Past: focusing on the trauma history when food became the strategy to cope with emotions
Future: triggering situations and affect management

Phase 2: Resource Installation and Development of a Safe Place. The client was asked to think of different situations in which she experiences herself as being in control, mastering the situation, and using her competencies, and she was asked to define what specific personal resources made that possible. The resources that were most important to reach the treatment goal were defined, and finally, the client developed a safe place. The client's resourceful thinking throughout treatment was "I am serious about myself and my feelings, I am good enough," and the core resources were "serenity and power," leaving her with a bodily sensation of being calm and in contact with inner strength located in her heart. Resource installation and safe place exercises were used throughout treatment and always at the beginning and at the end of each session.

Phase 3: Ego State Work and Standard EMDR Protocol. The ego state that held the "disordered eating behavior" according to the client's trauma history, when food became the self-soothing strategy, was revealed and understood. It turned out to be "the 7-year-old girl, wearing a yellow dress, ready to leave for her dancing school's end-of-season dance but without any attention from the adults around her." The ego state work consisted of getting to know the sad and lonely 7-year-old girl, encouraging her to collaborate with the adult state, and with the belief that "I am serious about myself and my feelings, I am good enough," developed in Phase 2. The encounter between the 7-year-old state and the adult state was very emotional and a deep psychological experience and was evaluated by the client to be crucial for the progress in treatment.

Other traumatic childhood experiences were treated with the standard EMDR protocol.

Phase 4: Positive Treatment Goal and Associated Positive State. The client was asked to elaborate on the treatment goal first defined in Phase 1 and describe an image of how she would look being successful and fully functional having attained her goal of better control in triggering eating situations. The goal was stated in positive terms and was time related, so it could be achievable in the near future. The goal described how she sees herself coping and functioning in the situations. The client chose an image of herself on a beach, wearing her favorite dress.

The next step was to let the client associate with the goal—that is, to let the client experience how it would *feel* to successfully achieve the treatment goal, using associative representation to anchor the experience into the physiology. When holding the image, she felt "relieved, happy, calm, and feeling good." Physical anchoring is a process of being able to replicate the physiological experience associated with an emotion or state by linking it to a physical experience such as a slight pressure on a part of the body, for example, a knuckle of the little finger, supported by BLS. This anchoring exercise is described in the DeTUR protocol but is a technique originally presented within the system of neurolinguistic programming (NLP; Dahl, 1993).

Anchoring—which in her case involved holding hands and putting pressure on the little finger whenever she was in a triggering situation—proved to be very helpful to the client. It gave her a good feeling and was an exercise that could be done discreetly.

Phase 5: Identify Urge Triggers. In this phase, the client made a list of situations, events, and stimuli that triggered the urge to eat in present situations. The idea was to help the client to understand that the eating behavior was learned and to reduce the negative affect that was connected with the early trauma events. Even after past events and traumatic experiences have been desensitized, present triggers can still have a charge of their own. The triggers represent those times when the client eats larger portions, the wrong types of food, unnecessary snacks, and so forth. The list of triggering situations was prioritized in the order of what seemed to be important, from weakest to strongest. The client's triggers were typically normal life situations, that is, late at night before bedtime and when arriving home from work.

Phase 6: Desensitize Triggers. Each triggering situation was desensitized through BLS, where the urge to eat in the specific situation was the target. Traumatic material that might show up in the process was treated with the standard EMDR protocol.

Phase 7: Install the Positive State. In this phase, because of the DeTUR protocol, the positive state developed in Phase 4 is connected with the situation, event, or stimulus that triggers the urge to eat. Whenever one of the triggering situations occurs, the usual response is replaced with the

positive state that the client has anchored. The effect is that the new response begins to occur automatically.

So, whenever the client experienced the urge to eat in one of the described triggering situations, she used the anchoring technique; held the positive treatment goal and associated positive state, which was the image of herself on the beach wearing her favorite dress and feeling "relieved, happy, calm, and feeling good," combined with the belief "I am serious about myself and my feelings, I am good enough"; and applied pressure to the anchor.

Each of the previous triggering situations was treated, with the client applying pressure to the anchor combined with BLS. Positive affect or thoughts were reinforced by another set of BLS. When negative responses occurred, more dysfunctional material could be addressed by the standard EMDR protocol.

Phase 8: Test and Future Check. The client was asked to bring up the triggers, checking the level of urge (LOU) to see if there was any remaining urge. If not, the success was reinforced by BLS; if there was any remaining urge, the desensitizing phase was repeated.

Phase 9: Closure and Self-Work. The process was evaluated. Throughout the treatment and at the end of treatment, different affect management techniques and exercises to overcome urges were introduced (R. Shapiro, 2009, pp. 125, 139).

Phase 10: Follow-up Sessions. The follow-up sessions were used to reinforce the gains the client had made; target any new situation, event, or stimuli that had been triggered between sessions; and teach new skills if needed.

Measures. The effect of the treatment was measured according to the following qualitative parameters, based on the client's self-reporting.

Findings Applying EMDR in the Treatment of EE. The effect of the treatment was measured according to the following qualitative parameters:

- Experience of the feeling of control (affect regulation) in eating behavior before and after the treatment (on a scale of 0–10, where 10 represents an experience of a high feeling of control and 0 represents no experience of control)
  The client reported that her experience of control in these specific situations was 3 before the treatment and 10 after the treatment.
- Eating triggers
  The situations that triggered the EE and the experienced reduction of urge were self-reported on a scale of 0–10, where 10 represents an experience of a very high urge to eat and 0 represents no urge (Table 1):

TABLE 1. Urge Before and After Treatment

Triggering Situation	Urge Before Treatment	Urge After Treatment
16:00–17:00 pm when arriving home from work	9	2
Late night before bedtime	7	0
At a restaurant, eating bread	8	1
Chips on a table	10	2
Guests serving candy	3	1

- Number of situations with EE per week
  Before treatment 1–2 times per week, after treatment less than once per week
- Body image—satisfaction with own body before and after the treatment
  Before treatment 8, after treatment 10, meaning very satisfied
  Interviewing the client about the experience after treatment, the following were reported:

How was the urge in triggering situations reduced?

- "The feeling of urge was reduced using the techniques that I was taught, especially holding the positive picture of myself being in control, registering the positive feeling, combined with the pressure on the knuckle of my little finger."

The client referred to Phase 4, "Positive treatment goal and associated positive state," where the client was asked to describe an image of how she would look being successful and fully functional having attained her goal, noticing the positive feeling, and, through associative representation, anchoring the experience into the physiology by putting a slight pressure on her little finger.

How do you explain the effect in general?

- "It was helpful to look back on little Lise and the time when food became an issue. To understand the little girl and how hard it was to have a sibling, a baby sister, at the age of 7. The only way I could get attention was to be brave and eat up."

Here, the client refers to the ego state work, where we looked back at the time when food became a self-soothing strategy to reduce emotional uneasiness. The purpose of this work was to integrate the dissociated parts—the ego states holding the old traumatic material from the time when her relationship with her mother changed as well as her role as an only child in

the family. The ego state work was combined with the standard EMDR protocol.

- "I have in general been more conscious of what it is all about—the link between emotions, eating behavior, old memories, and so on . . ."
  This statement is because of the overall intervention and psychoeducational approach throughout the treatment.

What was the most effective part of treatment?

- "The combination of the techniques and getting to know myself on a deeper level, to have my issues out in the open."
- "The practice of a very simple and easy technique that can be used anywhere and in all situations."

Anything you missed during treatment?

- "Maybe more follow-up sessions."

How was the effect after 3 months?

- "After 3 months, I had to think about the techniques to concentrate on holding my hands, putting pressure on my little finger, taking a deep breath, and focusing on the positive image of myself as the little 7-year-old girl dressed in a yellow dancing dress, and holding the image of myself as an adult, at the beach, wearing my favorite dress. Doing so, I felt warmth in my heart and a deep calm feeling, and my urge disappeared."

How was the effect after 6 months?

- "I do not think that much about it. When I experience the urge, which is seldom, I think, 'Why now?' Most often, it is because I am tired, a bit frozen, or feeling vulnerable in the situation. Then I hold my hands, apply the pressure, and bring up the positive image."

Discussion

The hypothesis is that by applying the adjusted DeTUR protocol, the limbic arousal and the need for self-soothing through consumption of food are reduced and replaced by a better affect regulation. The dissociated "ego state" holding the need for comfort eating is then better integrated into the mentalizing functions of the prefrontal cortex, giving the client the possibility for more conscious and thoughtful decisions in triggering eating situations. The resulting reduced intake of sugar and other comfort or junk foods again has a supposed positive impact on the complex neurobiological functions regulating appetite and the main center for satiety and thermogenesis. This study shows that treating EE with EMDR psychotherapy can have a positive effect; however, the results stem from treating one individual, and therefore generalizations to a larger population cannot be made. The client in this study though could be a typical example of the many millions of people in the world struggling with affect regulation and weight outside the psychiatric system. She is a hardworking woman with a so-called normal lifestyle in a modern world with high standards and complexity. She functions well with good internal resources, is motivated to have a healthy life, and had a safe upbringing, except for early life experiences that could be referred to as small t traumas. Her background history appears to be representative of many people in modern countries, which makes the need for new approaches to prevention and treatment even more important. The treatment of EE is complex, among other things because each person is a unique individual who deserves a personal assessment and an individual treatment plan. There is no approach that will work for all clients, and the future challenge is to adjust the treatment to the specific needs of the individual and at the same time examine more general approaches to treating EE and other EDs.

Conclusion

The findings and the evaluation of the treatment by the client indicate that there is a positive effect on the eating behavior and the affect regulation in the defined triggering situations. This effect is also experienced over time, at least after 3 and 6 months.

The most effective part of the treatment seems to be the combination of the techniques of anchoring the feeling into the physiology and working on a deeper therapeutic level, offering an understanding of the underlying issues highlighted by the ego state work.

The conclusion is that it is possible to demonstrate a positive effect by applying EMDR, and more specifically, the adjusted DeTUR protocol, in the treatment of EE. The treatment was helpful in this case, and given that the client is typical of the population of individuals suffering from EE, it also seems reasonable to conclude that the development of obesity when driven by emotional avoidance could be reduced.

Further Research

This single case study provides evidence for the effect of treating EE, but first of all, more research is needed to clarify the effects of the adjusted DeTUR protocol on a larger number of people suffering from EE. Research could also focus on other relevant protocols, for example, the CravEx protocol, and combinations of these to examine possible effects. It would be especially interesting to work more systematically to see what EMDR interventions could be relevant when

focusing on the present situation, addressing the current relationship with food and the present triggers; the past, focusing on the trauma history; and the future, enhancing affect regulation and coping strategies. In general, there is an urgent need for more research to address the consequences of the obesity epidemic as well as the increasing number of people suffering from other serious EDs.

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