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Effectiveness of Eye Movement Desensitization and Reprocessing Therapy on Dissociative Experiences and Behavioral Brain Systems in Women with Binge Eating Disorder

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A B S T R A C T

Purpose: This study aimed to evaluate the effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) therapy on dissociative experiences and behavioral brain systems in women diagnosed with Binge Eating Disorder (BED).
Methodology: The research employed a quasi-experimental design with pretest, posttest, and follow-up assessments in a control group format. The statistical population included women with BED referred to the Mastaneh Psychology Clinic in 2023. A total of 30 participants were selected through convenience sampling and randomly assigned into experimental and control groups (15 in each). The experimental group received five sessions of EMDR therapy across eight structured phases based on Luber's (2019) protocol. Both groups completed the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) and the Behavioral Inhibition System/Behavioral Activation System Scale (BIS/BAS; Carver & White, 1994) at three time points. Data were analyzed using repeated measures ANOVA and Bonferroni post hoc tests in SPSS-26 after verifying statistical assumptions.
Findings: The results showed that EMDR therapy significantly reduced dissociative experiences in the experimental group compared to the control group ($p = .002$, $\eta^2 = .162$). In addition, a significant decrease in behavioral inhibition ($p = .006$, $\eta^2 = .140$) and a significant increase in behavioral activation ($p = .001$, $\eta^2 = .181$) were observed in the experimental group over time. Bonferroni post hoc tests confirmed that these improvements were sustained during the follow-up phase.
Conclusion: EMDR therapy is an effective intervention for reducing dissociative experiences and improving the regulation of behavioral brain systems in women with Binge Eating Disorder. These findings support the use of trauma-informed approaches in the treatment of BED and highlight EMDR as a promising modality for addressing underlying emotional and neurobiological dysregulation.

Keywords: *Dissociative experiences, Eye Movement Desensitization and Reprocessing (EMDR) therapy, behavioral/brain systems, women, binge eating.*

1. Introduction

Binge Eating Disorder (BED) is characterized by recurrent episodes of consuming large quantities of food, often rapidly and to the point of discomfort, accompanied by feelings of loss of control and marked psychological distress. Beyond its physical consequences, BED is frequently intertwined with underlying psychological dynamics such as trauma, dissociative experiences, and disturbances in affect regulation and behavioral reactivity. These complexities necessitate therapeutic approaches that address not only eating behaviors but also the deeper neuropsychological and emotional dysregulations often present in affected individuals (Babakhanlou, 2023; Badaqi et al., 2016).

Recent studies have pointed to dissociative phenomena as a core component of many psychopathologies, including BED. Dissociation can manifest in various forms such as depersonalization, derealization, and identity fragmentation, often stemming from traumatic experiences or emotional neglect (Rezaiti Zadeh & Gholipour, 2021; Sajjadpour et al., 2020). Clinical research has consistently shown that individuals with BED demonstrate elevated levels of dissociative experiences, which may serve both as a defensive coping mechanism and a marker of unresolved trauma (Firoozabadi et al., 2016; Leeds et al., 2022). Moreover, the literature has emphasized that trauma-related dissociation disrupts one's ability to regulate emotions and behaviors effectively, exacerbating maladaptive eating patterns (Hart et al., 2010; Solomon, 2024).

One neuropsychological model that has garnered attention in explaining the behavioral patterns of individuals with BED is Gray's Reinforcement Sensitivity Theory, particularly the Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS). These brain-behavior systems regulate avoidance and approach behaviors in response to punishment and reward cues, respectively (Howard, 2023). Dysregulation in BIS and BAS has been implicated in impulsive eating behaviors, emotional reactivity, and a heightened vulnerability to psychopathology (Sanatjou et al., 2023; Shabtari et al., 2023). Research indicates that individuals with BED may exhibit elevated BAS sensitivity, leading to reward-seeking eating behaviors, as well as heightened BIS sensitivity, which is associated with anxiety, negative affect, and self-regulatory impairments (Mozafari et al., 2022; Subramanian et al., 2020).

Given these psychological and neurobiological underpinnings, psychotherapeutic modalities targeting trauma, emotional dysregulation, and maladaptive behavioral tendencies have become essential. Eye Movement Desensitization and Reprocessing (EMDR) therapy has emerged as a highly effective intervention in addressing trauma and its associated symptoms, including dissociation and behavioral dysregulation (Ecker et al., 2024; Palade & Goga, 2024). Developed by Francine Shapiro in the late 1980s and continually refined since, EMDR is a structured, evidence-based therapy that facilitates the reprocessing of traumatic memories through bilateral stimulation, most commonly in the form of guided eye movements (Matten & Pausch, 2024; Walker, 2024).

EMDR's efficacy in treating a wide range of trauma-related conditions has been robustly demonstrated in both clinical and experimental settings. For instance, EMDR has been effective in reducing dissociative symptoms in individuals with complex trauma (González, 2018; Hart et al., 2013). González-Vázquez and colleagues provided empirical support for EMDR's role in reducing trauma-induced dissociation through structured group therapy (González-Vázquez et al., 2018). The therapeutic mechanisms of EMDR are believed to be neurobiological in nature, promoting adaptive information processing and integrating previously fragmented memory networks (Poli et al., 2023). Neuroimaging studies suggest that EMDR can induce changes in limbic and cortical regions associated with emotional regulation, memory consolidation, and behavioral control (Pierce & Mayeaux, 2024).

The theoretical foundation of EMDR aligns with the understanding of dissociation as a disruption in the integration of affective, cognitive, and somatosensory experiences (Steele & Mosquera, 2024). EMDR protocols often incorporate specific strategies to safely navigate dissociative defenses, stabilize clients, and support reintegration, especially when working with individuals presenting with complex dissociative disorders (Fine & Berkowitz, 2001; Shebini, 2019; Twombly, 2001). These adaptations are particularly relevant in BED, where trauma and dissociation are prominent, and where emotional safety is a prerequisite for therapeutic engagement.

From a phase-oriented treatment perspective, EMDR has proven to be effective not only in the resolution of traumatic memories but also during stabilization phases through the use of resourcing techniques such as safe place imagery and containment (Hart et al., 2013, 2014). Furthermore, the incorporation of dissociation-sensitive strategies within

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EMDR treatment plans enables clinicians to reduce the risk of re-traumatization and dissociative flooding during processing (Solomon, 2024; Steele & Mosquera, 2024). This therapeutic precision is crucial when working with individuals with BED, as their clinical presentations often include trauma-related dissociative patterns that contribute to emotional disconnection and self-destructive behaviors, including binge eating.

International applications of EMDR across diverse populations also demonstrate its versatility and safety. Milićević highlighted its successful application among children exposed to war-related trauma (Milićević, 2024), while Nicholas underscored its potential in working with older adults, adapting protocols to accommodate cognitive and somatic sensitivities (Nicholas, 2024). In the context of acute health crises, EMDR has been utilized effectively to reduce anxiety in intensive care patients during the COVID-19 pandemic (Jelveh, 2021). Such findings underscore EMDR's applicability across age groups, cultural contexts, and clinical settings.

In addition to its therapeutic relevance, EMDR has been tested in combination with other neurobiological interventions, including multifocal transcranial current stimulation, as seen in the work of Gardoki-Souto et al. (Gardoki-Souto et al., 2024). These experimental augmentations seek to amplify EMDR's impact on trauma-related symptomatology, including dissociation, by targeting specific brain circuits involved in pain, emotion regulation, and memory. The convergence of psychotherapeutic and neurotechnological methods reinforces EMDR's standing as an innovative approach to trauma recovery.

Despite the growing body of international evidence, there remains a paucity of research examining the application of EMDR in populations with BED, particularly in culturally specific contexts such as Iran. Preliminary research in Iranian settings has shown that EMDR can effectively reduce generalized anxiety, dissociation, and stress-related symptoms (Pournasir & Karimkhani, 2021). Moreover, cultural adaptations of EMDR have been successfully implemented in local clinical settings, supporting its acceptance and integration within Iranian therapeutic paradigms (Jelveh, 2021; Rezaiti Zadeh & Gholipour, 2021).

Building on this foundation, the current study investigates the effectiveness of EMDR therapy in reducing dissociative experiences and modifying behavioral brain system activity—specifically behavioral inhibition and behavioral activation—in women diagnosed with Binge Eating Disorder.

2. Methods and Materials

2.1. Study Design and Participants

In this quasi-experimental study, a pretest-posttest-follow-up design with a control group was employed. The statistical population of this study included all women with binge eating disorder who referred to Mastaneh Psychology Clinic in 2023. The study sample consisted of 30 participants who were selected through convenience sampling. After homogenization, they were randomly assigned into two groups: experimental and control.

In this study, 30 women with binge eating disorder who had referred to the center were selected using a convenience sampling method. They were then asked to respond to the research questionnaires. After that, they were randomly assigned into two groups of 15 (experimental and control). Eye Movement Desensitization and Reprocessing (EMDR) therapy was administered to the experimental group in five sessions across eight stages. Following the intervention, the posttest and follow-up assessments using the research instruments were conducted with both groups.

2.2. Measures

2.2.1. Dissociative Experiences

The Dissociative Experiences Scale (DES) was developed by Bernstein and Putnam in 1986 to assess a wide range of dissociative experiences in both clinical and non-clinical populations. The scale includes 28 items, each rated on an 11-point scale ranging from 0% (never) to 100% (always), indicating the percentage of time the respondent experiences a particular dissociative phenomenon. The DES consists of three subscales: amnesia (e.g., forgetting events or losing time), depersonalization/derealization (e.g., feeling detached from one's body or surroundings), and absorption (e.g., becoming fully absorbed in fantasy or imagination). The final score is calculated by averaging the item scores, resulting in a total score between 0 and 100, with higher scores indicating greater levels of dissociation. The scale has demonstrated strong psychometric properties, including good internal consistency and test-retest reliability. Several studies have confirmed the validity and reliability of the DES in different cultures, including in Iranian populations, where it has been widely used in psychological research with acceptable psychometric indices (Firoozabadi et al., 2016; Sajjadpour et al., 2020).

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2.2.2. *Behavioral Inhibition System/Behavioral Activation System*

The Behavioral Inhibition System/Behavioral Activation System Scale (BIS/BAS), created by Carver and White in 1994, is designed to measure individual differences in the sensitivity of the brain's behavioral inhibition and behavioral activation systems, based on Gray's reinforcement sensitivity theory. The scale consists of 24 items (including four filler items) rated on a 4-point Likert scale from 1 (strongly agree) to 4 (strongly disagree). It contains four subscales: BIS (behavioral inhibition system), BAS-Drive (persistent pursuit of desired goals), BAS-Fun Seeking (desire for new rewards and willingness to approach them), and BAS-Reward Responsiveness (positive responses to anticipated reward). Higher scores on each subscale reflect greater sensitivity of that particular system. The BIS/BAS scale has been validated extensively, showing good internal consistency and factorial validity. Its reliability and validity have also been confirmed in Iranian samples in multiple psychological studies, making it a standard and appropriate tool for assessing the functioning of behavioral brain systems in diverse populations (Mozafari et al., 2022; Shabtari et al., 2023).

2.3. *Intervention*

Eye Movement Desensitization and Reprocessing (EMDR) therapy begins with an initial conversation, attention to the therapeutic relationship, and identifying key issues that led the client to seek psychotherapy. The protocol is then followed according to the specified stages. These stages are implemented over five sessions as follows:

Stage One: Creating a Safe Place: In the first stage, a positive memory is selected to construct a safe place. Considering the associated thought, emotion, and bodily sensation, 4 to 6 rounds of bilateral stimulation are conducted. Each round lasts 15 seconds.

Stage Two: Focusing on the Client's Presenting Problem: The focus shifts to a current problem the client is facing, along with the negative belief the client holds about themselves. After identifying the negative belief, the most distressing part of the problem is identified, followed by the selection of a corresponding positive belief.

Stage Three: Identifying a Related Past Memory: A past memory that resembles the current situation is identified. Ideally, this should be the first or the most intense experience related to the identified negative belief. In this stage, the negative belief, the disturbing part, and the corresponding positive belief are identified. The client is then asked to rate the validity of the positive belief from 1 to 7.

Stage Four: Desensitization: The client is asked to focus on the previously identified negative thought and bodily sensations while bilateral stimulation is performed for 25 to 35 seconds. After each round, deep breathing is recommended. In the second part of this stage, the client imagines the negative image moving away from them, and bilateral stimulation is repeated. In the third part, the client imagines the negative image fading, followed by additional bilateral stimulation. The level of distress caused by the memory is then rated on a scale from 0.

Stage Five: Installation: The client is asked to hold the original memory in their mind and place it next to the safe place memory. Bilateral stimulation is continued until the credibility of the selected positive belief reaches 7.

Stage Six: Body Scan: The client is asked to mentally hold the original negative belief and the safe place feeling simultaneously while scanning their body from head to toe. If any tension or discomfort is noticed, it is addressed with 30 seconds of bilateral stimulation.

Stage Seven: Closure: The therapist thanks the client for their cooperation up to this point and provides a work contact number and email address in case of emergencies. The therapist also explains that it is natural if the client experiences dreams or memories from the past that may be distressing.

Stage Eight: Reevaluation: In the second session, situations that may have triggered the negative belief addressed in the previous session are discussed. If such triggers are present, stages three through seven are repeated.

2.4. *Data Analysis*

For data analysis, both descriptive and inferential statistical methods were employed. Descriptive statistics, including means and standard deviations, were used to summarize the demographic characteristics and scores of the study variables across the pretest, posttest, and follow-up phases. To evaluate the effectiveness of the EMDR intervention, repeated measures analysis of variance (ANOVA) was conducted to examine within-group and between-group differences over time for dissociative experiences and behavioral brain systems. The assumptions of normality, homogeneity of variances, and sphericity were checked and met using the Shapiro-Wilk test, Levene's test, and Mauchly's test, respectively. Where significant

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interaction effects were found, Bonferroni post hoc tests were applied to identify specific differences between time points. All analyses were conducted using SPSS version 26, with a significance level set at $p < .05$.

3. Findings and Results

The mean and standard deviation of participants' age in the experimental group were 25.76 and 5.54 years, respectively, while in the control group, they were 26.68 and 4.91 years. Additionally, the results showed that in the experimental group, 4 participants were single and 3 were married, whereas in the control group, 14 participants were single and 5 were married. Pearson's Chi-square test indicated that there was no significant difference between the two groups in terms of marital status ($\chi^2 = 2.68$, $p = .102$). Furthermore, in terms of educational attainment, in the experimental group, 4 participants had a high school diploma or associate degree, 7 had a bachelor's degree, and 6 held a master's degree. In the control group, 5 participants had a high school diploma or associate degree, 9 held a bachelor's degree, and 5 held a master's degree or higher. Pearson's Chi-square test results showed no significant difference between the two groups in terms of education level ($\chi^2 = 0.73$, $p = .694$). Also, the results showed that the mean and standard deviation of Body Mass Index (BMI) in the experimental group were 31.40 and 1.33, respectively, and in the control group, they were 30.84 and 1.39.

The results related to the mean and standard deviation of the components of behavioral brain systems and dissociative experiences in three stages—pretest, posttest, and follow-up—are presented in Table 1.

Table 1

Mean and standard deviation of behavioral brain systems and dissociative experiences in pretest, posttest, and follow-up stages

Variable	Component	Group	Pretest (M ± SD)	Posttest (M ± SD)	Follow-up (M ± SD)
Behavioral Brain Systems	Behavioral Inhibition	Experimental	19.41 ± 3.45	13.71 ± 2.47	14.00 ± 3.04
		Control	18.68 ± 3.72	17.42 ± 3.11	17.11 ± 3.33
	Behavioral Activation	Experimental	23.53 ± 4.40	31.18 ± 5.26	29.53 ± 5.61
		Control	23.21 ± 5.94	22.84 ± 4.87	23.47 ± 5.09
Dissociative Experiences		Experimental	46.68 ± 7.82	35.97 ± 5.87	38.86 ± 5.92
		Control	48.10 ± 8.21	46.41 ± 7.32	47.50 ± 6.72

Before performing repeated measures ANOVA, the assumptions of normality, sphericity, and homogeneity of variances were examined and confirmed. The Shapiro-Wilk test showed that the distribution of scores in all dependent variables was normal ($p > .05$ for all comparisons). Levene's test indicated that the assumption of homogeneity of variances between groups was met for all variables ($p > .05$). Mauchly's test confirmed the sphericity assumption for repeated measures for all dependent variables ($W > .87$, $p > .05$).

Table 2

Repeated measures ANOVA results for behavioral brain systems and dissociative experiences

Variable	Effect	SS (Effect)	SS (Error)	F	p	η^2
Behavioral Inhibition	Group	111.03	422.31	8.94	.005	.208
	Time	219.24	379.38	19.65	.001	.366
	Group × Time	104.08	637.87	5.56	.006	.140
Behavioral Activation	Group	647.06	1403.27	15.68	.001	.316
	Time	175.98	695.84	8.60	.006	.202
	Group × Time	306.11	1382.10	7.53	.001	.181
Dissociative Experiences	Group	1256.18	2955.21	14.45	.001	.298
	Time	318.11	1319.27	8.20	.007	.194
	Group × Time	409.29	2123.45	6.55	.002	.162

As shown in Table 2, significant group × time interaction effects were found for behavioral inhibition ($F = 5.56$, $p = .006$, $\eta^2 = .140$), behavioral activation ($F = 7.53$, $p = .001$, $\eta^2 = .181$), and dissociative experiences ($F = 6.55$, $p = .002$, $\eta^2 = .162$), indicating the effectiveness of the intervention across time.

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Table 3

Bonferroni post hoc test results for all variables across groups and time points

Variable	Comparison	Mean Difference	SE	p-value
Behavioral Inhibition	Pretest – Posttest	3.49	0.75	.001
	Pretest – Follow-up	3.51	0.79	.001
	Posttest – Follow-up	0.02	0.62	1.000
	Experimental – Control	-2.03	0.68	.005
Behavioral Activation	Pretest – Posttest	-3.64	0.92	.001
	Pretest – Follow-up	-3.13	1.07	.018
	Posttest – Follow-up	0.51	1.19	1.000
	Experimental – Control	4.90	1.24	.001
Dissociative Experiences	Pretest – Posttest	6.21	1.36	.001
	Pretest – Follow-up	4.21	1.47	.021
	Posttest – Follow-up	-2.00	1.11	.239
	Experimental – Control	6.83	1.80	.001

The Bonferroni post hoc analysis in Table 3 further confirmed that significant changes occurred from pretest to posttest and pretest to follow-up in all three variables for the experimental group, while no such significant changes were observed in the control group. These findings suggest that Eye Movement Desensitization and Reprocessing (EMDR) therapy was effective in reducing dissociative experiences and behavioral inhibition, and in enhancing behavioral activation among women with binge eating disorder.

4. Discussion and Conclusion

The present study aimed to investigate the effectiveness of Eye Movement Desensitization and Reprocessing (EMDR) therapy on dissociative experiences and the functioning of behavioral brain systems in women diagnosed with Binge Eating Disorder (BED). The results revealed that EMDR significantly reduced dissociative experiences and behavioral inhibition, while significantly increasing behavioral activation in the experimental group compared to the control group. These effects were sustained in the follow-up phase, indicating the durability of the intervention.

In particular, the significant interaction effect of group × time on dissociative experiences suggests that EMDR effectively targeted the core dissociative mechanisms associated with BED. This aligns with prior research demonstrating that dissociative symptoms—such as depersonalization, emotional numbing, and memory fragmentation—are often rooted in unresolved trauma and can be alleviated through trauma-focused interventions like EMDR (Hart et al., 2010; Rezaiti Zadeh & Gholipour, 2021). The structured and phased nature of EMDR, which includes resource development, trauma processing, and body scan techniques, appears to enable the integration of fragmented memories, thereby reducing dissociative defenses (Fine & Berkowitz, 2001; Steele & Mosquera, 2024). These findings are also consistent with the case-control study conducted by González-Vázquez and colleagues, who reported significant reductions in dissociative experiences following EMDR group therapy among individuals with complex trauma (González-Vázquez et al., 2018).

Furthermore, the decrease in behavioral inhibition and the increase in behavioral activation observed in this study underscore the neurobiological and affective benefits of EMDR. According to Gray's Reinforcement Sensitivity Theory, individuals with heightened behavioral inhibition are more prone to anxiety, avoidance behaviors, and internalizing symptoms, which can contribute to maladaptive eating patterns like bingeing (Howard, 2023; Subramanian et al., 2020). By reprocessing traumatic memories and fostering adaptive coping strategies, EMDR may reduce the overactivation of the behavioral inhibition system (BIS), which in turn alleviates anxiety-related responses that fuel disordered eating. These results are in line with the work of Mozafari and colleagues, who found that emotional regulation difficulties and dysfunctional BIS/BAS responses are prominent in individuals with self-injurious and disordered eating behaviors (Mozafari et al., 2022).

The observed increase in behavioral activation is equally notable. A more responsive behavioral activation system (BAS) is associated with greater engagement in rewarding activities, improved mood, and more adaptive goal-directed behavior. EMDR may enhance BAS sensitivity by reducing avoidance behaviors and emotional withdrawal, allowing for increased motivation and engagement with positive

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reinforcers. This interpretation is supported by previous studies showing that trauma-focused therapies can promote approach-oriented behavior and emotional vitality through reprocessing of aversive experiences (Hart et al., 2013; Poli et al., 2023).

From a theoretical perspective, the findings of this study support the notion that dissociation in BED is not a standalone symptom but rather an indicator of deeper emotional and neurobiological dysregulation rooted in early trauma and neglect. EMDR directly engages these underlying processes by helping clients safely access and reprocess traumatic material. As described by Hart and colleagues, EMDR is particularly effective in addressing structural dissociation of the personality, a phenomenon frequently observed in individuals with complex trauma and dissociative disorders (Hart et al., 2014; Solomon, 2024). By guiding clients through a carefully sequenced intervention protocol that includes bilateral stimulation and cognitive restructuring, EMDR enables the reintegration of dissociated parts of the self and enhances emotional coherence.

The present results also align with neurobiological explanations of EMDR's efficacy. Recent meta-analyses of neuroimaging studies have shown that EMDR can modulate activity in the amygdala, hippocampus, and prefrontal cortex—regions involved in emotion regulation, memory, and executive function (Pierce & Mayeaux, 2024). These neural changes are particularly relevant to BED, which has been associated with impaired prefrontal regulation of reward circuits and heightened stress reactivity. By reducing hyperactivity in limbic structures and enhancing top-down regulatory control, EMDR may help individuals with BED regain executive control over impulsive behaviors and emotional reactivity.

Moreover, the sustainability of EMDR's effects observed in the follow-up phase supports findings from longitudinal research indicating that the benefits of EMDR persist over time. For instance, in a trial involving patients with fibromyalgia—a population similarly affected by chronic emotional distress and dissociation—Gardoki-Souto et al. reported lasting symptom improvements following EMDR combined with neuromodulation (Gardoki-Souto et al., 2024). Likewise, Srivastava documented enduring reductions in dissociation and depressive symptoms in two EMDR case studies involving individuals with childhood trauma (Srivastava, 2018). Such results reinforce the idea that EMDR not only alleviates acute distress but also fosters long-term psychological resilience.

The cultural relevance of these findings must also be noted. Research conducted in Iran has supported the application of EMDR in various clinical populations, showing its adaptability to cultural contexts. Studies by Pournasir and Jelveh have confirmed EMDR's effectiveness in reducing anxiety, dissociation, and trauma-related symptoms in Iranian clients (Jelveh, 2021; Pournasir & Karimkhani, 2021). The current study extends these findings to women with BED, demonstrating that EMDR can be successfully implemented in this subgroup to address complex emotional and behavioral dysfunctions.

It is also worth noting that the treatment protocol used in this study included stabilization techniques and dissociation-specific modifications, which are essential for safely working with high-dissociation clients. The integration of techniques such as safe place construction, body scans, and cognitive interweaving aligns with best practices outlined in the EMDR literature (Shebini, 2019; Steele & Mosquera, 2024). These techniques help contain emotional dysregulation, reduce the risk of abreaction, and facilitate the smooth progression through memory processing phases (Ecker et al., 2024; Twombly, 2001).

In addition, the positive effects of EMDR on dissociative experiences in this study are consistent with earlier findings in dissociation-focused literature. Leeds and colleagues emphasized the importance of screening for dissociative disorders in EMDR practice, noting that properly tailored interventions can result in significant clinical improvements even in cases of severe dissociation (Leeds et al., 2022). The present results support this stance, showing that EMDR is not only appropriate for clients with dissociative symptoms but is, in fact, highly effective in reducing them when integrated with careful clinical formulation.

The implications of these findings also extend to clinical populations beyond BED. For example, Milićević demonstrated EMDR's utility in working with children affected by wartime trauma (Milićević, 2024), and Nicholas outlined its application with older adults experiencing trauma-related symptoms (Nicholas, 2024). The flexibility of EMDR protocols, combined with their neurobiological grounding, make them applicable to a wide range of disorders characterized by emotional dysregulation, dissociation, and maladaptive behavioral patterns.

In sum, this study adds to the growing body of research supporting the use of EMDR for trauma-related conditions, particularly in clients with dissociative tendencies and behavioral regulation difficulties. By demonstrating significant improvements in both dissociative experiences

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and behavioral brain system functioning, the findings provide empirical validation for the use of EMDR in women with BED—a population that has historically been underserved in trauma-focused research.

Despite its valuable contributions, this study has several limitations. First, the sample size was relatively small, which may limit the generalizability of the findings. Second, all participants were women, making it difficult to draw conclusions about the effectiveness of EMDR for men with BED. Third, the study relied on self-report measures, which are subject to bias and may not fully capture the complexity of dissociative and behavioral responses. Additionally, while a follow-up phase was included, a longer follow-up period could provide a more robust assessment of the intervention's long-term effectiveness. Finally, cultural factors specific to the Iranian context may have influenced the participants' experiences of trauma and therapy, suggesting caution in extrapolating these results to other populations.

Future research should include larger and more diverse samples to enhance the external validity of the findings. Studies that incorporate male participants or compare gender differences in EMDR outcomes would be particularly informative. Moreover, integrating objective physiological or neuroimaging measures could provide deeper insight into the mechanisms underlying the observed changes in dissociation and behavioral brain systems. It would also be beneficial to conduct comparative studies that evaluate EMDR against other trauma-informed approaches such as Cognitive Behavioral Therapy (CBT) or Dialectical Behavior Therapy (DBT). Finally, exploring the cultural adaptability of EMDR protocols in different settings and communities would enhance our understanding of its global applicability.

Clinicians working with individuals diagnosed with BED should consider assessing for dissociative symptoms and behavioral brain system sensitivities as part of their initial evaluations. EMDR may be particularly beneficial for clients who exhibit trauma histories, emotional disconnection, or self-regulatory challenges. Practitioners are encouraged to use stabilization strategies and adapt EMDR protocols to accommodate dissociative defenses before proceeding with memory reprocessing. Training in dissociation-specific EMDR techniques is recommended for clinicians working with complex cases. Integrating EMDR into comprehensive treatment plans for BED may significantly enhance therapeutic outcomes by addressing both surface behaviors and the deeper psychological wounds that drive them.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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