

SYSTEMATIC REVIEW

Eye movement desensitization and reprocessing (EMDR) therapy for the treatment of eating disorders: A systematic review of the literature

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Abstract

Eye movement desensitization and reprocessing (EMDR) has demonstrated promise as a treatment for eating disorders (ED). The present study aimed to systematically evaluate the current evidence regarding the use of EMDR therapy in the treatment of EDs, ED symptomatology and body image concerns. Included articles were original studies that described the use of EMDR therapy in the treatment of EDs, published in the English language in a peer-review journal. The search was conducted using four electronic databases: PsycINFO, MedLine, Embase, and Web of Science. Two independent reviewers conducted screening, selection, risk of bias assessment and data extraction. Of the initial search of 109 potential studies, eight met inclusion criteria, including six case studies, one quasi-experimental study, and one randomised control trial (RCT). The RCT indicated that including an EMDR component did not have benefits over standard treatment for core ED symptoms, whereas the quasi-experimental study demonstrated some benefits for inclusion of EMDR as a treatment adjunct for anorexia nervosa patients. Case studies indicated some promising outcomes for patients with various presentations. Despite EMDR being an available treatment for several decades now, there is limited clinical evidence regarding its efficacy in the treatment of EDs. These findings highlight a critical need for more clinical research in this area to ensure clinical practice is guided and supported by evidence-based outcomes.

KEYWORDS

body image, eating disorders, EMDR, systematic review, treatment

Despite evolving theoretical and empirical research and increasing options for treatment, the impact and prevalence of eating disorders (EDs) continues to increase globally in both the young and in adult populations (Alfalahi et al., 2022; Coffino et al., 2019; Galmiche et al., 2019; Silén & Keski-Rahkonen, 2022). EDs are complex physical and psychological conditions that require multidisciplinary care and intervention (Hurst et al., 2020; Monteleone et al., 2019). Due to this complexity and often high psychiatric comorbidity, treatment often

has limited success and relapse rates are higher (Hambleton et al., 2022; Momen et al., 2022; Sala et al., 2023). At present, there are several first-line treatments recommended for the treatment of EDs in both adolescents and adults, including cognitive behavioural therapy for EDs (CBT-E) and family-based therapy (FBT; Monteleone et al., 2022). However, there have also been urgent recommendations for novel treatment, particularly for anorexia nervosa (AN) and those who do not respond to primary treatment (Monteleone et al., 2022). This may be

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through targeting novel developmental and maintenance factors, or through using less traditional intervention methods to address established treatment targets. As such, it is vital to continually review the mounting evidence in favour of treatments that may provide options for alternative or adjunct therapy, that may enhance treatment outcomes, reduce relapse and increase remission.

Eye movement desensitization and reprocessing (EMDR) is a psychotherapeutic approach with mounting evidence for its benefits in treatment of various disorders, most significantly for posttraumatic stress disorder (PTSD) and trauma symptoms (Laloties et al., 2021). It is a structured therapy that aims to support the reprocessing and integration of memories that have not yet been adequately processed, and subsequently desensitise and reduce the discomfort associated with these memories (Shapiro, 1989; Shapiro, 2007). This is proposed to be achieved through bilateral stimulation which is proposed to facilitate memory reprocessing (Shapiro, 2007). EMDR therapy is typically implemented in accordance with an established eight-phase protocol (Shapiro, 2001; Shapiro, 2007). This includes assessment, introduction to EMDR and developing coping strategies, evaluating treatment targets, desensitisation and reprocessing, incorporating positive cognitions, body scanning to reprocess negative body sensations, relaxation to reduce distress, and re-evaluation (Scelles & Bulnes, 2021; Shapiro, 2007).

The Adaptive Processing Model (AIP) is the dominant theoretical model supporting EMDR (Laloties et al., 2021; Shapiro, 2007). This model proposes that psychopathology that has emerged over time often has roots in past experiences that have not been adequately processed (Shapiro, 2007). It suggests unprocessed memories can then influence thoughts, feelings, behaviours, and experiences in a maladaptive manner (Scelles & Bulnes, 2021; Shapiro, 2007). As such, EMDR therapy seeks to help to reprocess these maladaptive memories to help reduce associated distress and promote more realistic and balanced interpretation of situations and experiences (Shapiro, 2007). It is important to acknowledge the evidence in support of the exact mechanisms of action of this treatment is mixed (de Jongh et al., 2024). Some evidence has suggested the likely mechanism of action contributing to treatment effectiveness is the increased exposure, which allows for processing of traumatic memories (Davidson & Parker, 2001; de Jongh et al., 2024).

Nevertheless, meta-analytic evidence suggests it is efficacious in treatment of PTSD and reduction of trauma symptoms (Rasines-Laudes & Serrano-Pintado, 2023). However, preliminary evidence has emerged supporting the benefit of utilising EMDR in treatment of disorders other than PTSD (Scelles & Bulnes, 2021), including in reducing symptomatology in psychosis, (Adams et al., 2020), depression (Carletto et al., 2021; Sepehry et al., 2021) and in affective disorders (Perlini et al., 2020). Systematic qualitative synthesis of client experiences has highlighted the promise for "transformational" change and various other positive outcomes of EMDR therapy (Whitehouse, 2021).

In alignment with the growth of evidence for EMDR in other disorders, there has been more interest and increased development of protocols for treating EDs and body image concerns with EMDR therapy (Balbo et al., 2017; Beer, 2018; Grand, 2009; Zaccagnino,

Civilotti, et al., 2017). While it is not considered a first-line treatment, there has been exploration of its use as an adjunct therapy, as an intervention for individuals who have not responded adequately to primary treatment, and for individuals with comorbidity, particularly trauma or attachment difficulties (Brewerton, 2023; Grand, 2009; Seubert, 2018). Indeed, there is a strong, well-established relationship between trauma and trauma-related disorders in the development and maintenance of EDs, evidenced in a variety of samples and populations (Brewerton, 2023). Theoretically, EMDR also focusses on challenging negative cognitions and addressing emotional regulation, by addressing and reprocessing beliefs and emotions (Grand, 2009; Zaccagnino, Civilotti, et al., 2017), which are also central components of first-line ED treatments such as CBT-E (Fairburn et al., 2003). Considering this, and the increased use of newly developed protocols for utilising EMDR in the treatment of EDs, it is essential to examine the current state of the evidence regarding its use, efficacy and effectiveness.

The most recent systematic review conducted regarding the use of EMDR therapy in EDs identified four studies (Balbo et al., 2017): a case study of an individual with body image and self-esteem concerns (Dziegielewski & Wolfe, 2000), a case study of an individual with emotional eating concerns (Halvgaard, 2015), a case study of an AN patient (Zaccagnino, Cussino, et al., 2017), and an RCT comparing standard residential treatment (SRT) to a combination of SRT and EMDR in a mixed ED sample (Bloomgarden & Calogero, 2008). However, some methodological shortcomings of the review process were apparent. This included the lack of a comprehensive search strategy (e.g., not using the full list of DSM-5 ED diagnoses or combination of words for related symptomatology), the lack of a risk of bias assessment or examination of the quality of the included studies, and the lack of a thorough reporting of study outcomes.

A more recent review examined the evidence for EMDR therapy as a treatment option for disorders or conditions, other than PTSD (Scelles & Bulnes, 2021). This review identified only one article in the "ED category" (Scelles & Bulnes, 2021). The included study described two cases studies of patients with Avoidant/Restrictive Food Intake Disorder (ARFID; Yasar et al., 2019). Although this review utilised more rigor in its methodology, particularly in the application of a risk of bias assessment and reporting of outcomes, it included none of the previous four articles identified in Balbo et al. (2017) systematic review. The discrepancies and methodological shortcomings of previous reviews warrant an updated and comprehensive review of existing literature.

Therefore, it is timely that a systematic review of the literature be conducted to evaluate the evidence regarding the use of EMDR therapy in the treatment of EDs and ED symptomatology. This review aimed to examine the available literature and to draw conclusions about the current state of the evidence for both clinical EDs and disordered eating symptomatology, including body image concerns. It is hoped that this will provide thorough guidance on the benefits, limitations and future directions for use of EMDR therapy in clinical practice and promising directions for future theoretical and clinical research.

1 | METHOD

1.1 | Search strategy

This systematic review followed guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA; Page et al., 2021), and a protocol was registered using the international prospective register of systematic reviews (PROSPERO; CRD42023476382). As Bramer et al. (2017) recommended, the search was conducted using an optimal combination of four electronic databases: PsycINFO, MedLine, Embase, and Web of Science. No limits were imposed to the search based off publication period. However, limits were imposed to restrict search to articles in the English language and to peer reviewed articles in the case of PsycINFO.

To identify eligible studies, several combinations of keywords were used that related to (1) EDs (e.g., 'eating disorder,' 'anorexia nervosa,' 'bulimia nervosa,' 'binge eating disorder,' 'body image,' 'ARFID,' etc.), and (2) EMDR (e.g., 'EMDR,' 'Eye Movement Desensitization and Reprocessing,' 'Eye Movement Desensitisation Therapy,' etc.). The full search strategies created for the electronic databases are available on PROSPERO with the registered protocol. Additionally, reference lists of all included studies were scanned to identify any additional, relevant publications. Unpublished studies were not sought or included. Searches were run again before final analysis on August 22, 2024, to ensure no recent articles were overlooked.

1.2 | Inclusion and exclusion criteria

The inclusion criteria were as follows:

1. The study reported on the use of EMDR therapy in the treatment (primary or adjunct) of eating disorders, symptoms of eating disorders (including body image disturbances and disordered eating behaviours such as dietary restriction, binge eating and purging), or a specific eating disorder (as diagnosed using recognised diagnostic criteria).
2. All study designs, including but not limited to randomised trials, quasi-experimental designs, observational studies, case studies, etc.
3. Published in the English language.
4. Study published in a peer-review journal.

The exclusion criteria were as follows:

1. Study described use of EMDR therapy in the treatment of another disorder (not a diagnosable eating disorder).
2. Not published in the English language.
3. Articles that do not contain original research, such as review articles and meta-analyses.
4. Book chapters, non-peer reviewed publications, or published doctoral theses.

1.3 | Selection process

Articles were screened and selected independently by two reviewers (both listed authors) at all stages of the review. Using the four identified electronic databases, duplicates were removed automatically using the Covidence systematic review management tool, as well as manually during the stage of title and abstract screening. Articles were screened by title and abstract for inclusion/exclusion, then full texts of the remaining studies were retrieved. The inter-rater agreement (Kappa) between the two reviewers at the title/abstract stage was $\kappa = 0.92$, equating to an overall agreement of 97.8%. Full texts were screened for eligibility, independently by both reviewers. Consensus was reached between authors about the studies eligible for data extraction. The inter-rater agreement (Kappa) between the two reviewers at full text screening stage was $\kappa = 0.86$, equating to an overall agreement of 93.3%.

1.4 | Risk of bias/quality appraisal

Risk of bias was guided by the use of several JBI critical appraisal tools (Munn et al., 2023), dependent on the types of studies identified for data extraction. Risk of bias assessment was conducted independently by both reviewers for each included article, to inform data extraction, synthesis and the overall interpretation of the results. Consensus was reached between authors regarding disagreements in the risk of bias assessment. The inter-rater agreement (Kappa) between the two reviewers was $\kappa = 0.82$, equating to an overall agreement of 91.8%.

1.5 | Data extraction and synthesis

Data extraction was conducted independently by the two reviewers. For each article, this included information regarding the study design, population/sample, treatment, participant demographics, baseline characteristics, variables measured, and treatment effects and/or outcomes reported. Authors of included articles were contacted to obtain additional details or missing data. Data not obtained before finalisation of the results of this review were reported as "N/A." Both primary and secondary outcomes were examined. Primary outcomes were changes in diagnostic status or any ED symptomatology. Secondary outcomes were all other outcomes reported, including but not limited to mood, wellbeing, psychological distress, quality of life or otherwise.

No quantitative data synthesis strategies were planned or applied. Meta-analysis and other quantitative data synthesis methods assume a sufficient number of studies and appropriate level of consistency between studies (Campbell et al., 2020). The inclusion criteria of this review meant high probability of heterogeneity in included studies (e.g., RCT vs. a case study, AN sample vs. ARFID, etc.), and thus contraindicated the use of meta-analysis (Campbell et al., 2020). Instead, data was extracted using narrative synthesis methods,

following the Cochrane SWiM guidelines for synthesis without meta-analysis in systematic reviews (Campbell et al., 2020). This method is commonly used in systematic reviews where it may not be appropriate, or possible, to meta-analyse estimates of intervention effects.

2 | RESULTS

2.1 | Results of search strategy

The search identified 109 potential studies. After removal of 14 duplicates, this resulted in 95 potential studies, of which eight were considered to have met the inclusion criteria. Thus, a total of eight studies were eligible for inclusion. The selection process is summarized in Figure 1, and a summary of included studies presented in Table 1.

2.2 | Description of included studies

Eight studies were retained and included in the review. One study was an RCT with a mixed ED sample (Bloomgarden & Calogero, 2008), one a quasi-experimental AN outpatient sample (Rossi et al., 2024), and the other six were case studies of varied presentations. Two of the case studies were patients without a

clinical diagnosis who experienced ED symptomatology, such as body image concerns (Dziegielewski & Wolfe, 2000) and emotional eating (Halvgaard, 2015). Two case studies described an AN inpatient (Cardazzone et al., 2021; Zaccagnino, Cussino, et al., 2017), one study described two ARFID patients (Yaşar et al., 2019), and one described a BN patient (Ergüney-Okumuş, 2021). All participants across all included studies were female adults. Four studies utilised EMDR as the sole treatment, and the remaining four utilised a combination of EMDR and another treatment, including standard residential treatment (SRT), cognitive behaviour therapy (CBT), or CBT-E.

2.3 | Risk of bias/quality appraisal

The JBI Critical Appraisal Checklist for RCTs (Tufanaru et al., 2020) was utilised to evaluate risk of bias for the included RCT (Bloomgarden & Calogero, 2008), the JBI Critical Appraisal Checklist for Quasi-experimental studies (Tufanaru et al., 2020) for the included quasi-experimental multi-centre study (Rossi et al., 2024), as well as the JBI Critical Appraisal Checklist for Case Reports (Moola et al., 2020) for the remaining six studies which were all case reports. The RCT utilised randomisation, concealed allocation to treatment groups, reported no significant differences between treatment groups at baseline, completed follow-up, and outcomes

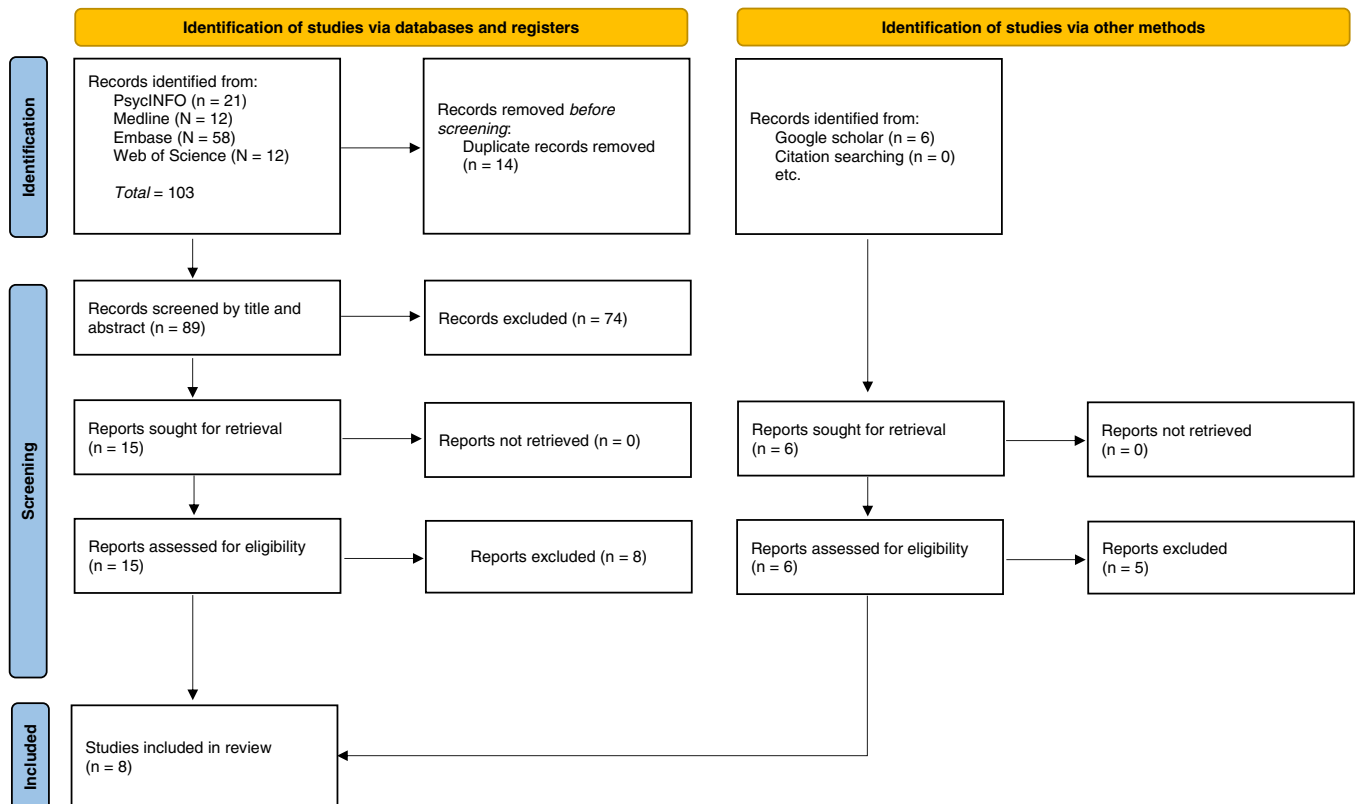


FIGURE 1 The Preferred Reporting Items for Systematic Reviews and Meta-Analyses diagram of study identification, screening and selection (PRISMA; Page et al., 2021). PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-analyses.

TABLE 1 Description of included studies.

| Study | Country | Design | N | Population/sample (control groups etc) | Gender (% female) | Age (SD) | Treatment |
|------------------------------------|---------|--------------------|----|----------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------|----------------------------------------------------------------------------------|
| Dziegielewski and Wolfe (2000) | USA | Case study (APA) | 1 | Patient (no diagnosis) | 100% | 26 (N/A) | EMDR (2 sessions) |
| Bloomgarden and Calogero (2008) | USA | RCT | 86 | ED = 43 ED = 43 | 100% | 24.59 (8.48) | SRT SRT + EMDR (4 sessions) |
| Halvgaard (2015) | Denmark | Case study | 1 | Patient (EE) | 100% | 55 (N/A) | EMDR (8 sessions) |
| Zaccagnino, Cussino, et al. (2017) | Italy | Case study | 1 | AN inpatient | 100% | 17 (N/A) | EMDR (36 sessions over 6 months) |
| Yaşar et al. (2019) | Turkey | Case studies | 2 | ARFID = 2 | 100% | 18 (N/A) 20 (N/A) | CBT (9 sessions) + EMDR (7 sessions) |
| Cardazzone et al. (2021) | Italy | Case study | 1 | AN inpatient | 100% | 17 (N/A) | EMDR (73 sessions over 1.5 years) |
| Ergüney-Okumuş (2021) | Turkey | Case study | 1 | BN patient | 100% | 22 (N/A) | CBT-E (20 sessions) + EMDR (5 sessions) |
| Rossi et al. (2024) | Italy | Quasi-experimental | 75 | AN outpatient: Early trauma CBT = 40 Early trauma CBT + EMDR = 17 No early trauma CBT-E = 50 | 100% | 25.54 (9.78) 25.12 (11.40) 22.84 (8.66) | CBT-E (40 sessions) CBT-E + EMDR (40 sessions) CBT-E + 20–25 sessions EMDR |

Abbreviations: AN, anorexia nervosa; APA, applied behaviour analysis; ARFID, avoidant/restrictive food intake disorder; CBT, cognitive behavioural therapy; CBT-E, enhanced cognitive behavioural therapy; ED, eating disorder; EE, emotional eating; EMDR, eye movement desensitization and reprocessing; N/A, not applicable; RCT, randomised control trial; SRT, standard residential treatment.

were measured and analysed in a valid and reliable manner (Bloomgarden & Calogero, 2008). However, participants were not blind to their treatment assignments, and it was unclear whether there was blinding of clinicians and outcome assessors in the RCT. Further, the SRT + EMDR group had significantly longer treatment length compared to SRT alone. The quasi-experimental study clearly identified the cause and effect, reported no significant differences between treatment groups except the intervention of interest, completed follow-up, and outcomes were measured and analysed in a valid and reliable manner (Rossi et al., 2024).

In all six case studies, the patients' demographic characteristics, clinical condition or characteristics, and the intervention or treatment procedures were all described adequately. Patient history was described clearly in three case studies, with one being rated as unclear (Yaşar et al., 2019), and two rated as not being described clearly (Dziegielewski & Wolfe, 2000; Halvgaard, 2015). Diagnostic tests and assessment methods were described clearly in all case studies except one (Halvgaard, 2015). The post-intervention clinical condition was clearly described in four case studies, with one rated as unclear (Cardazzone et al., 2021), and one rated as not being described clearly (Halvgaard, 2015). No adverse events or unanticipated events were identified or described in any case study. Altogether, it was ultimately concluded that there was low risk for bias in all studies eligible for inclusion. Thus, data was extracted from all eight included studies, with these limitations being considered in interpreting all outcomes.

2.4 | Outcomes

2.4.1 | Primary outcomes

There were several key primary outcomes from studies that utilised EMDR as a standalone treatment for EDs and disordered eating symptomatology (See Table 2). Results of two case reports of individuals without clinical diagnosis have indicated that EMDR resulted in increased body satisfaction or decreased body dissatisfaction (Dziegielewski & Wolfe, 2000; Halvgaard, 2015), increased self-esteem related to eating in a patient with body image concerns (Dziegielewski & Wolfe, 2000), decrease in body image avoidance (Dziegielewski & Wolfe, 2000), increased feelings of control over eating and decreases in emotional eating urges and experiences (Halvgaard, 2015). However, no follow-up was provided for these outcomes.

Further, in the context of a long-term inpatient intervention for an individual diagnosed with AN, use of EMDR therapy resulted in full remission for the patient, including a BMI increase to within healthy limits (Zaccagnino, Cussino, et al., 2017). Qualitative reports from two ARFID patients also indicated that a combination of EMDR and CBT was effective for reducing food avoidance and restrictive eating (Yaşar et al., 2019). Further, for a BN patient, combined EMDR and CBT-E resulted in posttreatment decreases in binge eating and restriction, as well as in body dissatisfaction, disordered eating attitudes, preoccupation with eating, weight and shape, and ED beliefs (Ergüney-Okumuş, 2021). These results were maintained at 12-months follow-up (Ergüney-Okumuş, 2021).

TABLE 2 Outcomes of included studies.

| Study | Measures/outcome variables | Outcomes | Follow-up |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Dziegielewski and Wolfe (2000) | Self-esteem Eating Scale (SERS) Body Image Avoidance Questionnaire (BIAQ) Daily body satisfaction rating | Increase in SERS score, slight increase in body satisfaction ratings, and decrease in BIAQ score | N/A |
| Bloomgarden and Calogero (2008) | Body Image Memory Questionnaire (BIMQ) Body Investment Scale (BIS) Appearance Schemas Inventory (ASI) Body Dissatisfaction subscale (EDI-II - BD) Sociocultural Attitudes Towards Appearance Questionnaire revised (SATAQ-R) Eating Attitudes Test (EAT-26) Beck Depression Inventory (BDI) Dissociative Experiences Scale (DES) | SRT + EMDR significantly less distress than SRT post treatment for "earliest" and "worst" memories, but not for "most recent" memory No significant differences on all other outcomes between SRT + EMDR versus SRT | Significant at 3-months Significant at 12-months only for "worst" memory Attrition: 3-month (5%–7%) 12-month (21%–26%) |
| Halvgaard (2015) | Parameters from client reports: Experience of feeling of control over eating Eating triggers and urges Number of emotional eating experiences Body image satisfaction | Increase in feeling of control and body satisfaction, and decrease in eating urges and emotional eating experiences | N/A |
| Zaccagnino, Cussino, et al. (2017) | Diagnostic status BMI Adult Attachment Interview (AAI) | No AN diagnosis, BMI increase to within normal limits (21.5), change in attachment status to "earned secure" | Change in diagnostic status and BMI remained at 12-months and 24-months |
| Yaşar et al. (2019) | Food avoidance and restrictive eating Beck Depression Inventory (BDI) Beck Anxiety Inventory (BAI) | Decrease in BDI and BAI scores, qualitative reports of reduced food avoidance and restrictive eating for both patients | Reported "in progress" |
| Cardazzone et al. (2021) | Linguistic changes characterised by word clusters, in affective, cognitive, biological and non-fluency categories | Significant increase in positive sensation, positive emotion, affect and optimism word clusters, as well as some cognitive and biological word clusters Significant reduction in non-fluency word clusters (e.g., 'ah, um, eh') No significant difference in negative emotion, sleep and sexual word clusters | N/A |
| Ergüney-Okumuş (2021) | Eating Attitudes Test (EAT-26) Eating Disorder Examination Questionnaire (EDEQ) Eating Disorder Belief Questionnaire (EDBQ) Bulimia Nervosa Stages of Change Questionnaire Body Satisfaction Scale (BSS) | Decrease in disordered eating attitudes, binge-eating, restriction, preoccupation with eating, weight and shape, eating disorder beliefs, and increase in body satisfaction | 12-months |
| Rossi et al. (2024) | Eating Disorder Examination Questionnaire (EDEQ) Symptom Checklist 90 Revised (SCL-90-R) Dissociative Experiences Scale-II (DES-II) Childhood Trauma Questionnaire (CTQ) | Lower EDEQ scores and higher BMI (recovery) in the early trauma CBT-E + EMDR group compared to the early trauma CBT-E group, at T2 Reductions in general psychopathology and dissociative symptoms in the CBT-E + EMDR group, not present in either of the CBT-E groups, at T2 Longitudinal mediation analyses showed improvements in ED symptomatology mediated by reduction in dissociative symptoms in combined group of those with childhood maltreatment (CBT-E + EMDR and CBT-E) | T2 follow-up: 15.4 months (average) from baseline |

However, experimental studies using comparison groups and larger samples demonstrated mixed outcomes (Bloomgarden & Calogero, 2008; Rossi et al., 2024). A RCT comparison of SRT and SRT + EMDR in a mixed sample of ED patients found no significant differences between treatment groups for body image investment, appearance schemas, body dissatisfaction, sociocultural attitudes towards appearance, or disordered eating attitudes (Bloomgarden & Calogero, 2008). However, a quasi-experimental multi-centre study comparing outcomes between three groups demonstrated that the CBT-E + EMDR group reported more promising outcomes compared to both CBT-E groups (early trauma and no early trauma; Rossi et al., 2024). In an AN outpatient sample, these outcomes included significantly higher weight restoration and lower ED symptomatology (EDE-Q) at follow-up (Rossi et al., 2024). Further, in the subgroup of those with moderate/severe early trauma (CBT-E + EMDR and CBT-E groups combined), reductions in ED symptomatology were mediated by reductions in dissociative symptoms.

2.5 | Secondary outcomes

The results of this review also highlight several secondary outcomes of EMDR therapy in the treatment of EDs (See Table 2). Compared to SRT alone, a combination of SRT and EMDR in a mixed sample of ED patients resulted in significantly less distress relating to “earliest” and “worst” body image related memories, but not distress relating to their “most recent” body image memories (Bloomgarden & Calogero, 2008). These outcomes remained significant at 3-months follow-up, and at 12-months follow-up for reduced distress relating to “worst” body image memories. However, no significant differences were found between treatment groups for depression or dissociative experiences (Bloomgarden & Calogero, 2008). Similarly, in AN outpatients, there were significant reductions at follow-up in general psychopathology and dissociative symptoms in the adjunct EMDR group, that were not present in either comparison group (Rossi et al., 2024).

Additionally, in two ARFID patients, the combination of EMDR and CBT resulted in reduced depression and anxiety from pre to posttreatment (Yaşar et al., 2019). Further, a 6-month inpatient stay with EMDR therapy for an individual with AN, resulted in a change in attachment style from insecure to “earned secure” (Zaccagnino, Cussino, et al., 2017). Finally, a series of linguistic changes have been documented in long-term inpatient with AN, including increased usage of words indicating positive sensations, emotions, affect and overall optimism from pre to posttreatment (Cardazzone et al., 2021). There was also a significant reduction in non-fluency word clusters, although no significance changes were documented in terms of negative emotion, sleep or sexual word clusters (Cardazzone et al., 2021).

3 | DISCUSSION

This review aimed to systematically examine the use of EMDR therapy in the treatment of EDs, to report on the current state of the evidence for both clinical EDs and disordered eating symptomatology, including

body image concerns. Eight studies were identified that met our inclusion criteria, including six case studies, one quasi-experimental study, and one RCT.

The results of this review suggest that at present there is little evidence to support the effectiveness of an additional EMDR therapy component over and above standard treatment for primary ED symptomatology, including disordered eating attitudes, body dissatisfaction and other body image related outcomes. In case studies that reported reductions in ED symptoms (e.g., body dissatisfaction, food avoidance, restrictive eating, or a change in diagnostic status), EMDR therapy was most often utilised as an adjunct to another evidence-based treatment (e.g., CBT-E or an inpatient stay consisting of standard care), and where there was no comparison case or group (Ergüney-Okumuş, 2021; Yaşar et al., 2019; Zaccagnino, Cussino, et al., 2017). Thus, it is difficult to assess whether the benefits of treatment can be directly attributed to the addition of an EMDR therapy component.

The one controlled trial available did not find any benefit from the addition of an EMDR component to SRT for body-image related outcomes (Bloomgarden & Calogero, 2008). However, this study used a mixed ED sample, consisting of patients with AN (restrictive subtype), bulimia nervosa (BN) and eating disorder not otherwise specified (EDNOS). It is possible that outcomes may have been impacted by the heterogeneity of diagnostic presentations in the sample. It may be important for future RCTs to examine the benefits of EMDR therapy specifically for different ED presentations using current DSM-5 diagnostic criteria. More recently, a quasi-experimental multi-centre study demonstrated promising outcomes for the use of EMDR as an adjunct to CBT-E in a sample of patients with AN. This study signalled that those with early trauma receiving adjunct EMDR CBT-E reported significantly greater reductions in ED symptomatology, general psychopathology, dissociative symptoms, and significantly higher weight restoration, compared to those receiving CBT-E alone (Rossi et al., 2024). This indicates there may be benefits for EMDR when used as an adjunct in specific diagnostic groups and for individuals with a trauma history.

In case studies reporting on the use of a number of EMDR sessions in isolation, some positive outcomes were reported. This included decreased body dissatisfaction and emotional eating, and increased self-esteem and feelings of control over eating (Dziegielewski & Wolfe, 2000; Halvgaard, 2015). However, it is important to consider these outcomes in the context of the limitations of each study. Primarily, each of these studies utilised measures that were not validated or were created specifically for the study (Dziegielewski & Wolfe, 2000; Halvgaard, 2015). This is not always a limitation in the context of preliminary case studies, however using psychometrically sound assessment tools supports increased quality in reporting of outcomes. Using validated, standardised measures also enables greater comparison in outcomes between studies.

Some of the more encouraging findings of this review are not necessarily results relating to primary ED symptomatology. For example, in a mixed ED sample, the RCT found greater reductions in distress associated with the “earliest” and “worst” body image related

memories in the treatment group that included an EMDR therapy component (Bloomgarden & Calogero, 2008). This reduction in memory related distress makes sense considering the aims, method and hypothesised mechanism of action of EMDR therapy (Shapiro, 2007). Moreover, the positive changes in attachment style found in one AN patient were unsurprising, considering the established relationship between attachment style and PTSD (Barazzone et al., 2019), and that EMDR therapy is currently one of the recommended first-line treatments for PTSD and trauma symptoms as recommended by the World Health Organisation, in addition to CBT (World Health Organization, 2013). Finally, outcomes documented in Cardazzone et al. (2021) case report highlight posttreatment linguistic shifts in an AN patient that were indicative of positive cognitive and emotional change. These novel findings were suggested to be representative of a "more adaptive resolution" of memories relating to adverse life experiences (Cardazzone et al., 2021).

However, it is important to consider these outcomes in the context of some of the limitations of the included studies. As mentioned, due to the large number of case studies, frequent use of EMDR therapy as an adjunct, and only two available experimental studies, it is difficult to assess which positive outcomes can be attributed to the inclusion of EMDR therapy in treatment. This can be addressed by prioritising future use of RCTs, or where there are external restraints (e.g., lack of time or resources), creating a case study comparison with matched baseline characteristics and treatment length. Moreover, only four studies included a follow-up of outcomes and one reported that follow-up was still in progress. It is important that treatment outcomes are assessed long-term to examine persistence and stability of intervention effects, possibility of delayed effects, and relapse.

It may be helpful for future studies to also consider the use of EMDR therapy for particular outcomes of interest most related to its proposed mechanism of action and aims. For example, EMDR therapy aims to reprocess and integrate key memories that have not yet been (or been adequately) processed, to help create more realistic cognitions, decrease distress, and increase emotional regulation (Shapiro, 1989; Shapiro, 2007). As such, it is important to not only consider and focus on direct behavioural outcomes, but perhaps to prioritise assessment of cognitive and emotional outcomes, such as beliefs, assumptions, expectations, distress tolerance and emotional regulation. Finally, no case studies or trials reported on the use of EMDR therapy in binge eating disorder (BED) or utilised mixed or gender diverse samples. Addressing these important gaps is recommended to future clinical researchers.

It is also important to acknowledge some of the key limitations of the present study.

As this is still an emerging area for clinical research and practice in the context of EDs, it was important for the review to be wide-reaching and inclusive in its criteria, so as to provide a comprehensive analysis of the current evidence. However, this resulted in a heterogeneous pool of results, with respect to study design, populations and outcomes. This heterogeneity increases the difficulty of making accurate or generalisable conclusions about the impact of EMDR therapy. Although this is an

important consideration whilst interpreting the overall outcomes of the review, the authors attempted to address this by synthesising evidence by outcome, and within this, highlighting differences in outcomes provided between case studies and evidence provided by the experimental studies. Further, this review required eligible studies to be original research published in English in peer-reviewed journals. These criteria may mean unpublished data, grey literature and evidence from non-English speaking populations were not considered. However, ultimately this was considered a necessary limitation to increase the quality of evidence and decrease any further heterogeneity of outcomes.

Altogether, this review provides a comprehensive, updated assessment of the current state of the empirical evidence regarding the use of EMDR therapy in the treatment of EDs and related symptomatology. It is clear that there is urgent need for more clinical research to be conducted in this area to ensure the use of EMDR therapy in clinical practice continues to be guided and supported by evidence-based outcomes. The findings of the current systematic review indicate that, at present, EMDR therapy cannot be recommended as a primary or standalone treatment for EDs. It is currently most valuable as an adjunct to standard intervention and may be particularly helpful in patients whose symptomatology is persistent, longstanding, or comorbid. Further, future studies should examine the use of EMDR therapy in BED as there is currently no available evidence regarding the use of EMDR as a treatment or adjunct to treatment for BED. It is hoped that this review has provided thorough summary of the available evidence regarding the benefits, limitations and future directions for the use of EMDR therapy in the treatment of EDs and related symptomatology and provides promising directions for future theoretical and clinical research.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data used during the current review is available from the corresponding author on reasonable request.

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