

## Compassion-Focused Therapy for Bulimia Nervosa in Women: Effects on Rumination and Early Maladaptive Schemas

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### Abstract

**Objective:** Bulimia nervosa is frequently associated with elevated rumination and early maladaptive schemas. The aim of this study was to investigate the effectiveness of compassion-focused therapy (CFT) in reducing rumination and early maladaptive schemas among women with bulimia nervosa.

**Materials and Methods:** This quasi-experimental study utilized a pretest-posttest control group design. Fifty women with a confirmed DSM-5 diagnosis of bulimia nervosa were recruited via convenience sampling from the Ahvaz Eating Disorders Association and randomly assigned to either an experimental group (n= 25) receiving compassion-focused therapy (8 sessions, 90 minutes each) or a no-intervention control group (n= 25). Rumination was assessed using the Rumination Response Scale (RRS), and early maladaptive schemas were measured with the 75-item Early Maladaptive Schema Questionnaire-Short Form. Data were analyzed using analysis of covariance (ANCOVA) in SPSS-25.

**Results:** After controlling for pretest scores, women who received CFT showed significantly greater reductions in both rumination ( $P < 0.001$ ) and early maladaptive schemas ( $P < 0.001$ ) compared to the control group. Large effect sizes were observed for both outcomes ( $\eta^2 > 0.70$ ).

**Conclusion:** CFT is an effective intervention for reducing rumination and early maladaptive schemas in women with bulimia nervosa. These findings support the clinical utility of CFT in targeting core cognitive-emotional maintenance factors in this population and suggest that it may be a valuable treatment option for bulimia nervosa.

**Keywords:** Self-compassion, Rumination, Bulimia nervosa, Women

QR Code:



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## Introduction

**B**ulimia nervosa is a severe eating disorder involving recurrent binge eating episodes followed by compensatory behaviors, such as self-induced vomiting, laxative misuse, or excessive exercise. A core characteristic is the undue influence of body weight and shape on self-worth, tying personal value almost entirely to appearance (1). The disorder results from a multifaceted interaction of psychosocial, biological, and genetic factors (2), leading to profound psychological distress, medical complications, and impaired functioning (3). Adverse childhood experiences like physical, sexual, emotional abuse, or neglect are highly prevalent and play a significant etiological role (4). For some individuals, bingeing and purging act as dysfunctional emotion-regulation strategies, providing temporary relief from trauma-related distress through dissociative mechanisms (5).

Young's schema theory explains that unmet core emotional needs in childhood foster early maladaptive schemas: enduring cognitive-emotional patterns that shape experience and behavior (6). These schemas activate under triggering conditions and perpetuate psychopathology, including eating disorders (7). Rumination repetitive, passive dwelling on negative emotions, their causes, and consequences-is a key transdiagnostic maintainer in bulimia nervosa (8). Patients often fixate on body dissatisfaction, loss of control, post-purge guilt, and weight gain fears. This process intensifies negative affect, reinforces schemas (e.g., defectiveness/shame or failure), and directly escalates or sustains binge-purge cycles (9). Research shows rumination predicts greater symptom severity, more frequent bingeing, and reduced treatment efficacy (10). Compassion-focused therapy (CFT), developed by Paul Gilbert (11), targets prominent shame and self-criticism in eating disorders. Integrating evolutionary psychology, neuroscience, and compassion practices, CFT cultivates self-soothing by balancing threat, drive, and affiliative soothing

systems (12). Techniques like compassionate imagery, letter writing, and mindfulness help replace self-attack with compassionate relating, reducing distress and enhancing self-perception (9,13). Considering the pivotal roles of rumination and early maladaptive schemas in sustaining bulimia nervosa, and CFT's proven capacity to alleviate shame, self-criticism, and repetitive negative thinking, the present study investigates CFT's efficacy in decreasing rumination and maladaptive schemas among women with bulimia nervosa.

## Material and methods

### Study design

This study employed a quasi-experimental pretest-posttest control group design with two parallel groups.

### Participants and sampling procedure

The study sample consisted of 50 women with a confirmed DSM-5 diagnosis of bulimia nervosa. Participants were recruited through convenience sampling from individuals seeking treatment at the Ahvaz Eating Disorders Association between February and June 2023. The required sample size was determined using G\*Power 3.1 software with  $\alpha = 0.05$ , power = 0.90, and an expected large effect size ( $f = 0.40$ ) based on previous compassion-focused therapy trials; this yielded a minimum of 21 participants per group. To account for potential attrition, 25 participants were enrolled in each group. Participants were non-randomly assigned to either the CFT group ( $n = 25$ ) or the no-intervention control group ( $n = 25$ ).

### Inclusion and exclusion criteria

Inclusion criteria were: female gender, age 20-40 years, confirmed DSM-5 diagnosis of bulimia nervosa by a clinical psychologist, at least high-school education, and provision of written informed consent. Exclusion criteria were: concurrent participation in any other form of psychotherapy, presence of severe comorbid major depressive disorder or

obsessive-compulsive disorder, serious physical illness (e.g., cancer or uncontrolled diabetes), and absence from more than two treatment sessions or unwillingness to continue participation.

### **Intervention**

The experimental group received compassion-focused therapy delivered in eight weekly 90-minute group sessions (Table 1). The control group received no psychological intervention during the study period but was offered CFT after completion of post-test assessments.

### **Measurement tool**

#### **Early Maladaptive Schema Questionnaire-Short Form (YSQ-SF)**

The 75-item short form was used to assess early maladaptive schemas (14). Items are rated on a 6-point Likert scale (1= “completely untrue of me” to 6= “describes me perfectly”). Higher total scores indicate greater schema severity. The Persian version has demonstrated excellent internal consistency (Cronbach’s  $\alpha=0.83$  in the present sample).

### **Rumination Response Scale (RRS)**

Rumination was measured using the 22-item Rumination Response. The RRS assesses the tendency to respond to depressed mood with repetitive focus on symptoms, causes, and consequences of distress. Items are scored on a

4-point Likert scale (1= almost never to 4= almost always), yielding a total score ranging from 22 to 88. Higher scores reflect greater ruminative tendency (15). Internal consistency in the current sample was Cronbach’s  $\alpha=0.91$ .

### **Statistical analysis**

Data were analyzed using IBM SPSS version 25. First, descriptive statistics (means and standard deviations) and tests of normality (Kolmogorov-Smirnov) and homogeneity of variances (Levene’s test) were computed. Subsequently, two separate one-way analyses of covariance (ANCOVA) were conducted on post-test rumination and early maladaptive schema scores, with group (CFT vs. control) as the independent variable and respective pretest scores entered as covariates. ANCOVA was chosen to control for baseline differences and increase statistical power by removing variance attributable to pretest performance. All ANCOVA assumptions were met: normality of residuals, homogeneity of regression slopes, and homogeneity of variances. Effect sizes are reported as partial  $\eta^2$ . The significance level was set at  $P<0.05$ .

### **Ethical considerations**

This study received ethical approval from the Research Ethics Committee of Islamic Azad University, Ahvaz Branch (approval code: IR.IAU.AHVAZ.REC.1403.339).

**Table 1. A summary of compassion-focused therapy (CFT) sessions**

Sessions	Content
1	Introduction to CFT principles, group rules, compassionate mind definition, rhythmic breathing exercise
2	Understanding self-criticism: types, causes, consequences; introduction to guilt and shame
3	Characteristics of compassion; building distress tolerance and non-judgmental stance
4	Mindfulness training and seated meditation practice
5	Accepting mistakes and self-forgiveness; ten-step forgiveness exercise
6	Compassionate imagery: creating a personal safe place and compassionate self
7	Fear of compassion; cultivating compassionate behavior and self-efficacy
8	Compassionate letter writing to oneself; review of key concepts; relapse prevention; post-test

**Table 2. Descriptive statistics for rumination and early maladaptive schemas**

Variables	Stage	CFT group Mean ( $\pm$ SD)	Control group Mean ( $\pm$ SD)
<b>Rumination</b>	Pre-test	62.84 ( $\pm$ 8.71)	64.36 ( $\pm$ 9.12)
	Post-test	38.72 ( $\pm$ 7.65)	63.88 ( $\pm$ 8.94)
<b>Early maladaptive schemas</b>	Pre-test	304.37 ( $\pm$ 20.26)	309.52 ( $\pm$ 20.07)
	Post-test	132.48 ( $\pm$ 14.82)	308.91 ( $\pm$ 20.18)

## Results

The final sample consisted of 50 women with bulimia nervosa (CFT group:  $n= 25$ ; control group:  $n= 25$ ). The mean age was 32.51 years ( $SD= 5.12$ ) in the CFT group and 32.29 years ( $SD= 5.67$ ) in the control group. An independent-samples T-test revealed no significant age difference between the two groups ( $P= 0.883$ ). No significant between-group differences were observed in marital status, educational level, or socioeconomic status (all  $P > 0.30$ ). These variables were therefore not included as covariates in subsequent analyses. Descriptive Statistics Table 2 presents the pretest and posttest means and standard deviations for rumination and early maladaptive schemas in both groups.

## Conclusion

In conclusion, the present findings provide strong preliminary evidence that compassion-focused therapy is an effective intervention for reducing two central cognitive-emotional maintenance processes early maladaptive schemas and rumination in women with bulimia nervosa. By targeting shame and self-criticism through the systematic cultivation of self-compassion, CFT offers a promising, mechanistically grounded treatment approach that may complement existing evidence-based interventions for this challenging disorder. Strengths of the study include recruitment of a diagnosed clinical sample, manualized intervention delivery by trained therapists, use of well-validated Persian-adapted measures, and high retention with large effects. Limitations, however, include the quasi-experimental design without random assignment or active control, exclusive reliance on self-report assessments, absence of follow-up data, and restriction to treatment-seeking women aged 20-40 years, which limits generalizability. Future investigations should

utilize fully randomized controlled trials, incorporate behavioral or clinician-rated measures, assess longer-term maintenance of gains, and conduct component analyses to clarify the most active elements of CFT for schema modification and rumination reduction in this population.

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## Conflict of Interest

The authors declare that they have no conflicts of interests.

## Authors' contributions

F.M: Conceptualization, methodology, investigation, data curation, writing original draft, review and editing. S.B: Conceptualization, methodology, supervision, project administration, formal analysis, writing review and editing. K.S: Investigation, resources, data collection, writing review and editing. Z.E.S: Methodology, validation, writing review and editing. A.Kh: Formal analysis, software, data curation, writing review and editing. All authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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