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Emotional Schema Therapy for Bipolar Disorder: Improving Emotional Schemas, Quality of Life, Cognitive Emotion Regulation, and Symptom Management

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Abstract

This study aimed to investigate the effectiveness of group emotional schema therapy (EST) on emotional schemas, quality of life, cognitive emotion regulation strategies, and symptoms of patients with bipolar disorder. The study participants consisted of 16 individuals aged 20 to 50, randomly assigned to the emotional schema therapy group or the waiting list control group. The therapy group attended 12 weekly sessions. The measures used were the Leahy Emotional Schema Scale (LESS), the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF), the Cognitive Emotion Regulation Questionnaire (CERQ), the Beck Depression Inventory-II (BDI-II), and the Young Mania Rating Scale (YMRS). The study consisted of pre-test and post-test assessments. The results showed that participants in the intervention group significantly improved emotional schemas, quality of life, cognitive emotion regulation strategies, and symptoms. Overall, this study suggests that group emotional schema therapy may be a practical treatment approach for patients with bipolar disorder.

Keywords Group emotional schema therapy · Bipolar disorder · Quality of life · Cognitive emotion regulation · Emotional schemas

Bipolar disorder is a chronic mood disorder characterized by manic or hypomanic episodes alternating or intermixed with episodes of depression; episodes can have different specifiers, such as anxious distress, rapid cycling, melancholic features, atypical features, mood-congruent psychotic features, mood-incongruent psychotic

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features, catatonia, peripartum onset, and seasonal pattern (American Psychiatric Association, 2013; Grande et al., 2016). The 12-month prevalence rate of bipolar disorder in DSM-IV in the USA was estimated at 0.6%, and its lifetime prevalence is more than 1% (Merikangas et al., 2007). Also, internationally, the lifetime prevalence of bipolar disorder is estimated at 1–2%, and the World Health Organization ranks it as the fifth cause of illness among mental disorders (Ferrari et al., 2016). Considering bipolar II and cyclothymia, the overall prevalence of bipolar disorders reaches more than 5% (Kessler et al., 2005). As the results of studies have shown, the primary characteristics of bipolar disorders are mood and emotional deviations (American Psychiatric Association, 2013; Gruber, 2011; Townsend et al., 2012). Also, findings emphasize the defects in regulatory processes in bipolar disorder, and various researchers suggest that emotion regulation problems lie at the core of bipolar disorder (Johnson et al., 2008).

Emotion regulation is "how individuals affect their emotional states, the timing of these emotions, and how they exhibit and convey them" (Gross, 1998; McRae & Gross, 2020). Cognitive emotion regulation strategies are conscious cognitive strategies used after an emotionally arousing event (Garnefski & Kraaij, 2006a). In other words, cognitive emotion regulation strategies monitor, evaluate, and modify emotional states through thinking (Thompson, 1994). Garnefski and Kraaij (2007a) recognized nine cognitive strategies that can be used to adjust emotions. Some of these strategies are associated with negative emotions, such as depression, anxiety, anger, and stress (Garnefski & Kraaij, 2006b, 2018; Picó-Pérez et al., 2017); also, some of these strategies are associated with poor mental health (Hu et al., 2014) and reduced well-being (Kraiss et al., 2020). Models consisting of these strategies alone predicted a large proportion of the variance in emotional states (Garnefski & Kraaij, 2006b). Evidence shows that compared to healthy individuals, bipolar disorder patients are poor at suppressing emotional hyperactivity, are more impulsive in exciting situations, have poor reappraisal capacity, and rely more on negative emotion regulation strategies such as rumination and catastrophizing (Ghaznavi & Deckersbach, 2012; Gruber et al., 2011; Van Gucht et al., 2009; Wolkenstein et al., 2014).

The World Health Organization defines the quality of life as an individual's perception of their position in life, in terms of their goals, expectations, standards, and concerns, within the context of their culture and value systems (The WHOQOL Group, 1995). In other words, quality of life is a broad concept involving physical health, psychological state, personal beliefs, level of independence, social relationships, and living environment (The WHOQOL Group, 1998). The study of quality of life in bipolar disorder is a topic that has increased in recent years, and more instruments have been used in this field to evaluate the functioning and satisfaction of people with bipolar disorder (Morton et al., 2017; Murray & Michalak, 2012). So far, quality of life research has been conducted on a large population of bipolar disorder patients; there is strong evidence that bipolar disorder patients suffer from poorer functioning and lower quality of life than the general population (Bo et al., 2019; Henry et al., 2013; Khafif et al., 2021; Martín-Subero et al., 2014; Michalak et al., 2005a, b; Pascual-Sánchez et al., 2019).

Emotional schemas are a person's individual-specific and core beliefs about emotions and emotional processes (Edwards & Wupperman, 2020; Leahy, 2002, 2022).

The emotional schema model is a social-cognitive model that explains how people understand, interpret, evaluate, and respond to their emotions and the emotions of others. The emotional schema model suggests that people differ in their theories about emotions and emotion regulation. As a result of these theories, problematic coping strategies with emotions arise, such as suppression, rumination, avoidance, blame, and drug abuse. This model's emphasis on emotions and the content of dimensions of emotional schemas puts emotional experiences at the center of psychological treatment (Leahy, 2019). In literature, emotional schemas are conceptualized and operationalized by metacognitive theory or metaemotional theory. Both theories emphasize a person's unique beliefs about emotions, emotional processes, and emotional experiences, and both consider the central role of these beliefs in secondary responses to emotional experiences (Edwards & Wupperman, 2020). According to Leahy's model of emotional schemas, people differ from each other in their beliefs about emotions in 14 dimensions, including validation, expression, duration, need for control, emphasis on rationality, comprehensibility, consensus with others, guilt, simplistic view of emotion, numbness, acceptance, relation to higher values, blame, and rumination (Leahy, 2018, 2019; Leahy et al., 2011; Morvaridi et al., 2019).

Emotional schema therapy is a psychotherapy approach that emphasizes the importance of experiencing and evaluating emotions and is based on the emotional schema model (Leahy, 2018, 2019, 2022). According to this model, when an emotion is activated, people differ in their ability to identify, label, and differentiate emotions; evaluate their emotions; and use coping strategies. They make these evaluations based on the fourteen dimensions of emotional schemas mentioned before (Leahy, 2015; Morvaridi et al., 2019). Emotional schemas are central to psychoemotional functioning, influencing emotion processing, emotion regulation, and behavior (Edwards & Wupperman, 2020). Findings have shown that emotional schemas are related to various psychological disorders and symptoms. Emotional schema therapy in both individual and group forms has effectively treated generalized anxiety disorder (Khaleghi et al., 2017; Rezaee et al., 2017), social anxiety (Morvaridi et al., 2019), obsessive–compulsive disorder (Ghovati et al., 2021), posttraumatic stress disorder (Daneshmandi et al., 2014; Naderi et al., 2015), suicide and self-harm behavior (Khaleghi et al., 2021), migraine headache (Shahsavani et al., 2020), and self-mutilation and parasuicidal behavior in military soldiers (Shahtoori et al., 2020). Also, its effectiveness has been shown to reduce rumination, and emotional dysregulation, improve negative emotional schemas, and reduce the severity of depression symptoms in patients with major depressive disorder (Ghasemkhanloo et al., 2021; Rezaei et al., 2015, 2016).

While there are no specific studies on using EST in bipolar disorder, EST does show potential benefits for people with bipolar disorder. As mentioned earlier, individuals with bipolar disorder face challenges in controlling their emotional intensity and regulating their emotions. They tend to employ negative strategies for managing their emotions, as supported by various studies (Ghaznavi & Deckersbach, 2012; Gruber, 2011; Van Gucht et al., 2009; Wolkenstein et al., 2014). This issue persists outside acute episodes (Wolkenstein et al., 2014). Additionally, research has indicated that individuals with bipolar disorder struggle to utilize emotional schemas

(Batmaz et al., 2014). These issues can be attributed to their diminished quality of life and their struggle to manage symptoms associated with their disorder effectively. Emotional schema therapy offers distinct advantages over other behavioral treatments for bipolar disorder. While traditional behavioral treatments often focus on symptom management and regulation, emotional schema therapy dives deeper into the underlying emotional processes and schemas contributing to the disorder. By specifically targeting positive emotional schemas and addressing the overreliance on negative strategies, emotional schema therapy provides a unique framework for individuals with bipolar disorder to restructure their emotional responses and regulation techniques. This therapy approach helps patients better understand and manage their emotions and enhances their overall quality of life by fostering positive emotional experiences and improving their ability to cope with the challenges associated with bipolar disorder. By addressing the root causes of emotional dysregulation, emotional schema therapy brings a comprehensive and tailored approach to treatment that goes beyond traditional behavioral interventions.

So far, there has been no study on the effect of emotional schema therapy on drug management. However, emotional schema therapy can be considered as a model that comes from cognitive behavioral therapy (Leahy, 2022), and it can use cognitive behavioral therapy guidelines that have been proven to be effective for drug management (Basco & Rush, 2005).

Emotional schema therapy is an integrative approach that combines and uses the strategies of cognitive behavioral therapy, schema therapy, metacognitive model, and emotionally focused therapy (Leahy, 2019). The primary goal of this therapy is to identify and rectify maladaptive beliefs and interpretations that interfere with emotional experiences. It also seeks to develop new, adaptive, flexible beliefs, interpretations, and strategies for managing emotions (Leahy, 2002, 2015, 2018). According to Erfan et al. (2019), emotional schema therapy is an effective intervention for addressing mood symptoms and impulsivity in individuals diagnosed with bipolar disorder.

This study aimed to investigate the effectiveness of emotional schema therapy in bipolar disorder. It was predicted that emotional schema therapy could be more effective in improving emotional schemas, cognitive emotion regulation strategies, quality of life, and bipolar disorder symptoms compared to the control group.

Method

Participants

Mental health specialists from psychiatric clinics and Ibn Sina Psychiatric Hospital in Mashhad referred patients with bipolar disorder (type 1). Inclusion criteria contained (1) a diagnosis of bipolar disorder by a psychiatrist, (2) a clinical interview, (3) taking medication prescribed by a psychiatrist during the study period, (4) age between 20 and 50, and (5) minimum secondary education. Exclusion criteria in both groups included (1) diagnosis of any psychological or mental disorder other than bipolar disorder, (2) history of receiving CBT-based

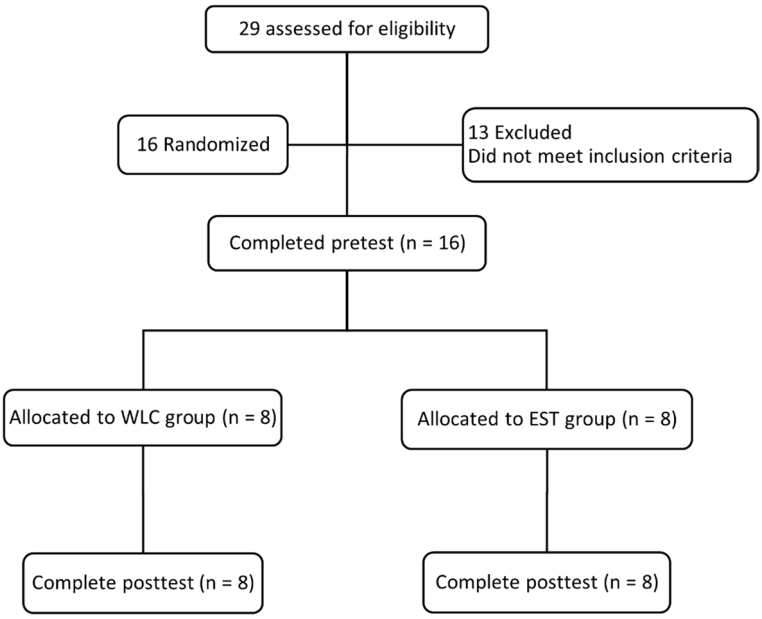

Fig. 1 Flowchart of participants in the study. EST, emotion schema therapy; WLC, waitlist control

Table 1 Sociodemographic characteristics of participants

Sociodemographic	WLC group $n=8$	EST group $n=8$
Age, mean (SD)	32.13 (6.79)	30.75 (6.62)
Marital status (single), *n* (%)	2 (25%)	4 (50%)
Education		
Third middle school, *n* (%)	2 (25%)	2 (25%)
High school, *n* (%)	4 (50%)	4 (50%)
Bachelor, *n* (%)	2 (25%)	2 (25%)

EST, emotional schema therapy; *WLC*, waitlist control

intervention within the past three years, (3) substance abuse, and (4) not attending more than three sessions in the present study group therapy sessions.

Of the 29 individuals recruited for assessment sessions, 16 qualified to participate in the study (male = 8, female = 8). Participants were randomly assigned to two groups, including EST ($n=8$) and WLC ($n=8$). Figure 1 indicates the details of participant enrolment and study flow.

The mean age of the participants in the EST group was 30.75 (SD = 6.62), and in the WLC group was 32.13 (SD = 6.79). Table 1 describes the characteristics of each group.

Measures

Leahy Emotional Schema Scale

The Leahy Emotional Schema Scale (LESS) is a 50-question self-report scale that evaluates emotional schemas in 14 dimensions. These dimensions include duration, control, comprehensibility, consensus, guilt/shame, rationality, simplistic view of emotion, values, expression, validation, acceptance, blame, numbness, and rumination. Each item is scored on a 6-point Likert scale (from "it is not of me at all" to "it is very true of me"). In the original version of the LESS, Cronbach's alpha was 0.80 for 1286 participants (Leahy, 2002). In this questionnaire's Turkish version, Cronbach's alpha coefficient is 0.86, and split-half validity is 0.70 (Yavuz et al., 2011). The reliability of the Persian scale in 2 weeks for a full scale is reported to be 0.78 and for subscales ranging from 0.56 to 0.71 (Khanzadeh et al., 2013). In another study on the Persian version of LESS, conducted on 250 students, Cronbach's alpha was 0.70, indicating this questionnaire's high internal consistency (Shahvarani & Khormaie, 2018).

World Health Organization Quality of Life Questionnaire (WHOQOL-BREF)

The World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) is a self-assessment scale that has 26 items and evaluates four quality of life areas (psychological, environmental, social relationships, and physical health); therefore, in each of the mentioned areas, a score between 4 and 20 is obtained, where 4 indicates the worst and 20 indicates the best situation in the desired area. The research on 11,830 people from 23 countries showed that WHOQOL-BREF has good to excellent psychometric properties (Skevington et al., 2004). The Iranian version of the WHOQOL-BREF domain scores confirmed good internal consistency, criterion validity, and discriminant validity (Usefy et al., 2010).

The Cognitive Emotion Regulation Questionnaire

The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2009) has 36 items that are self-assessed and designed to evaluate individual differences in the cognitive regulation of emotion in response to the experience of threatening or stressful traumatic life events. The CERQ measures nine cognitive emotion regulation strategies, each of them consisting of 4 subscales; these nine strategies include self-blame, blaming others, rumination, catastrophizing (these four emotion regulation strategies are maladaptive), acceptance, refocusing on planning, positive refocusing, positive reappraisal, and putting into perspective (these five emotion regulation strategies are adaptive). Responses can be rated on a 5-point Likert scale, ranging from "(almost) never" to "(almost) always." Therefore, the sum of the subscales scores can be between 4 and 20, with a higher score indicating a higher frequency of using the specified cognitive strategies. The results showed that the Cognitive Emotion Regulation Questionnaire (CERQ) had good validity and reliability. Internal reliability coefficients for all subscales are between 0.75 and 0.87

(Garnefski & Kraaij, 2007b). The validity of the subscales of the Farsi version of CERQ has also been reported as good. The internal consistency is 0.76 to 0.92, and the retest correlation coefficient is 0.51 to 0.77 (Hasani, 2010).

Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI-II) is a self-report 21-item inventory, and it is one of the most widely used instruments to assess the severity of depression. The inventory can be self-scored, and its total scores range from a minimum of 0 to a maximum of 63. According to the authors' recommendations, a BDI-II score > 13 indicates depressive symptoms, while moderate/severe depression is indicated by a score of BDI-II > 20 (Beck et al., 1996). The BDI-II is an instrument with high reliability and discriminating capacity between depressed and non-depressed individuals and has good concurrent, content, and construct validity. The Beck questionnaire has shown a suitable level of reliability, with an average Cronbach's alpha of 0.86 (varying from 0.73 to 0.92) (Stockings et al., 2015). Furthermore, based on the study by Ghassemzadeh et al. (2005), the BDI-II-Persian showed a high level of internal consistency (Cronbach's alpha = 0.87) and satisfactory test–retest reliability ($r = 0.74$). Based on available evidence, the BDI-II is a cost-effective questionnaire for measuring depression severity with wide application for research and clinical practice worldwide (Wang & Gorenstein, 2013).

Young Mania Rating Scale

Young Mania Rating Scale (YMRS), widely used in clinical situations, measures the symptoms of patients already diagnosed with bipolar disorder. This scale is completed by a clinical specialist while interviewing the patient (15–30 min). YMRS has 11 items, seven items get a score between 0 (no symptoms/normal behavior) and 4 (extreme deviation), and the four other items have double weight (from 0 to 8) for calculating the total score. The higher score indicates the severity of the symptoms (Bull, 2017; Young et al., 2000). In psychometric studies, Cronbach's alpha is between 0.80 and 0.91, indicating this scale's internal stability (Fristad et al., 1992; Youngstrom et al., 2002). In psychometric studies in the Iranian version of YMRS, Cronbach's alpha coefficient was 0.72 to 0.81; the Pearson and interclass correlation tests were 0.83 and 0.89, respectively (Z. Mohammadi et al., 2018; Shabani et al., 2010).

Emotional Schema Therapy

According to the emotional schema model, people with bipolar disorder have problematic beliefs about their emotions, including simplistic view of emotions, numbness, rationality, rumination, higher values, consensus, acceptance of feelings, dissimilarity, and lack of control of emotion. Also, studies have shown that negative emotional schemas are related to depression (Batmaz et al., 2014; Leahy, 2018; Onur et al., 2017; Batmaz & Özdel, 2015). Emotional schema therapy tries to moderate these negative beliefs about emotions, assists in relinquishing unhelpful strategies,

and encourages helpful strategies such as cognitive reappraisal, acceptance, mindfulness, and commitment to valued action.

Emotional schema therapy emphasizes various strategies for regulating emotions, including validation and self-validation, identifying and differentiating emotions, recognizing the transience of emotions, challenging negative beliefs about emotion, focusing on action toward goals while tolerating emotion, reducing guilt over emotions, and accepting emotions. The therapy also involves assessing negative automatic thoughts related to emotions and promoting the use of detached mindfulness.

Procedure

This study was an experimental, single-blind, randomized design on patients with bipolar disorder in which the participants were unaware of their treatment assignment. All participants were referred by mental health specialists from psychiatric clinics and Ibn Sina Psychiatric Hospital in Mashhad, Iran, and were diagnosed according to DSM 5 criteria and a diagnostic interview by a psychiatrist. Eligible patients were randomly assigned to two EST and control groups based on a computer-generated randomization list (each group, $n = 8$). All 16 participants completed the study. The EST group was treated for 12 sessions (120 min), and the control group participants were placed on the waiting list. The structure and description of the sessions are explained in Table 2.

When the study was completed, WLC participants received EST. Leahy Emotional Schema Scale (LESS), the World Health Organization Quality of Life Questionnaire (WHOQOL-BREF), the Cognitive Emotion Regulation Questionnaire (CERQ), the Beck Depression Inventory-II (BDI-II), and the Young Mania Rating Scale (YMRS) were conducted in the pre-test and post-test. The Research Ethics Committee of the Ferdowsi University of Mashhad approved this study, and all participants signed written informed consent.

Data Analysis

Data analysis multivariate covariance analysis was used to investigate the effectiveness of EST on increasing positive emotional schemas, reducing negative emotional schemas, increasing the quality of life, increasing adaptive cognitive emotion regulation strategies, and reduction of maladaptive cognitive emotion regulation strategies; and also univariate covariance analysis was used to investigate the effectiveness of EST on the improvement of depression and mania symptoms of bipolar disorder in patients. The Kolmogorov–Smirnov test was used to check the scores for the pre-test and post-test, which showed that the scores were normal; therefore, the Wilks lambda test was used to check the significance of multi-variable effects. The homogeneity of the variance–covariance matrix showed that the significance of Box's test in emotional schemas, quality of life, and cognitive emotion regulation strategies was greater than 0.05. Also, the homogeneity of variance analysis showed that the significance of Levin's test in depression and mania was greater than 0.05.

Table 2 The summary of EST sessions

Session	Interventions
1	• Getting to know the participants, introducing the therapist, providing conditions for members to express their concerns, problems, and expectations, psychoeducation about bipolar disorder and the psychological factors affecting it, Explaining the logic of treatment and treatment aims
2–3	• Psychoeducation about emotions, Normal and problematic emotions, and their differences with thought and behavior, emotional self-awareness, Identifying and naming emotions, identifying emotions in the body and mental states Psychoeducation about emotional schemas in bipolar disorder, psychoeducation about emotional schema therapy, and Socialization with emotional schema model
4–5	• Identifying and challenging negative emotional schemas, Investigating the effectiveness of emotional schema therapy on beliefs and behaviors • Validating the emotions and experiences of the group members, getting validation from others correctly, Emotion normalization, learning that emotions are transient, explaining about accepting emotions, non-judgment of emotions, verbal challenges, and Socratic dialog
6–7	• Identifying and managing triggers, instruction in problem-solving strategy, and interpersonal skills training (talking, self-expression, and conflict resolution) • Explain mixed emotions, the experience of members with mixed emotions
8–9	• Develop coping strategies, the introduction of false emotional beliefs and cognitive restructuring to challenge them (such as validation, values, acceptance, expression, self-blame, and guilt), identification of false evaluations and their effects on the emotional states, perform compassionate mindfulness techniques
10–11	• Discussion about the severity of schemas before and after the confrontation • Review of sessions and practice of learned skills
12	• Relapse prevention • Investigating the obstacles to doing practices after the end of the treatment and finding solutions to remove the obstacles • Schematization for support sessions • Talk about the end of treatment and the feelings of the members

Therefore, the assumption of homogeneity of the variance–covariance matrix and homogeneity of analysis of variance was confirmed in the study of groups.

Results

Means and standard deviations and the difference between two EST and WLC groups for positive emotional schemas (validation, comprehensibility, values, control, consensus, acceptance, and expression) and negative emotional schemas (guilt and shame, simplistic view of emotion, numbness, rationality, duration, rumination, and blame) for both pre-test and post-test stages are listed in Table 3. The results of multivariate covariance analysis showed that based on the post-test scores, there were significant differences between the EST and WLC groups in positive emotional schemas (Wilks lambda = 0.99, $p < 0.001$, $F_{(1, 13)} = 205.72$). Table 3 shows that mean scores of positive emotional schemas in the EST group were significantly higher than those in the WLC group. Furthermore, the results of multivariate covariance

Table 3 Means and standard deviations and the difference between two WLC and EST groups in positive and negative emotional schemas

Measures			WLC group ($n=8$) M (SD)	EST group ($n=8$) M (SD)	F	Effect size
Positive emotional schemas	Validation	Pre-test	10.50 (1.77)	11 (1.51)	147.16***	0.90
		Post-test	10.75 (1.67)	14.75 (1.49)		
	Comprehensibility	Pre-test	12.25 (1.67)	12.50 (1.41)	84.62***	0.84
		Post-test	12 (2.07)	16.13 (1.35)		
	Values	Pre-test	13.25 (1.28)	12.50 (1.41)	44.56***	0.74
		Post-test	13.38 (1.30)	17.13 (1.12)		
	Control	Pre-test	10.13 (1.80)	10 (1.85)	201.76***	0.88
		Post-test	10.38 (1.30)	13.25 (1.98)		
	Consensus	Pre-test	14 (1.31)	13.75 (1.16)	45.28***	0.74
		Post-test	15.13 (1.12)	18 (1.19)		
	Acceptance	Pre-test	26.63 (2.92)	25.75 (3.24)	148.42***	0.90
		Post-test	27.75 (2.71)	30 (3.46)		
	Expression	Pre-test	5.38 (1.06)	5.25 (0.89)	29.79***	0.65
		Post-test	6.38 (1.06)	9.5 (0.75)		

Table 3 (continued)

Measures			WLC group ($n=8$) M (SD)	EST group ($n=8$) M (SD)	F	Effect size
Negative emotional schemas	Guilt and shame	Pre-test	13.75 (1.91)	14.13 (3.44)	60.29***	0.89
		Post-test	13.63 (2.32)	10.50 (2.20)		
	Simplistic view of emotion	Pre-test	18.13 (2.64)	18.63 (2.50)	40.56***	0.85
		Post-test	18.25 (3.01)	15.75 (1.83)		
	Numbness	Pre-test	5.63 (1.19)	5.75 (1.49)	21.95**	0.76
		Post-test	5.88 (1.24)	2.75 (0.88)		
	Rationality	Pre-test	14.25 (0.88)	14.25 (1.03)	41.77***	0.85
		Post-test	13.25 (0.88)	11 (1.51)		
	Duration	Pre-test	7.75 (1.16)	7.63 (0.74)	39.69***	0.85
		Post-test	6.63 (1.30)	4.38 (0.91)		
	Rumination	Pre-test	20.88 (1.35)	20.75 (1.58)	26.82**	0.79
		Post-test	19.75 (1.28)	16.88 (1.12)		
	Blame	Pre-test	8.88 (0.83)	9.13 (0.83)	33.00**	0.82
		Post-test	8 (0.92)	5.50 (1.19)		

**$p<0.01$, ***$p<0.001$

analysis showed that based on the post-test scores, there were significant differences between the EST and WLC groups in negative emotional schemas (Wilks lambda = 0.000, $p < 0.001$, $F_{(1, 13)} = 186.29$). The EST group's mean scores of negative emotional schemas were significantly lower than those of the WLC group.

The descriptive statistics of quality of life (physical health, psychological health, social relationships, and environmental health) for the EST and WLC groups in the pre-test and post-test are shown in Table 4. Based on the results of multivariate covariance analysis, there were significant differences between the EST and WLC groups in the post-test scores of all aspects of quality of life (Wilks lambda = 0.005, $p < 0.01$, $F_{(1, 13)} = 362.89$). According to the post-test scores, there were significant differences between the EST and WLC groups in physical, psychological, environmental ($p < 0.001$), and social aspects ($p < 0.05$). The results show that the mean scores in all aspects of quality of life in the EST group were greater than those in the WLC group.

The descriptive statistics for maladaptive and adaptive strategies of cognitive emotion regulation for both EST and WLC groups in the pre-test and post-test are shown in Table 5. The results of multivariate covariance analysis showed that there were significant differences between the EST and WLC groups in the post-test scores of adaptive cognitive emotion regulation strategies (Wilks lambda = 0.007, $p < 0.01$, $F_{(1, 13)} = 145.84$). The EST group's mean scores of adaptive cognitive emotion regulation strategies were significantly higher than those of the WLC group. Additionally, there were significant differences between the EST and WLC groups in the post-test scores of maladaptive cognitive emotion regulation strategies (Wilks lambda = 0.017, $p < 0.05$, $F_{(1, 13)} = 103.78$). According to Table 5, the EST group's mean scores of maladaptive cognitive emotion regulation strategies were significantly lower than those of the control group.

Table 6 presents the mean and standard deviations and the difference between the two WLC and EST groups in depression and mania symptoms in the pre-test and post-test. The mean scores of depression and mania in the EST group were lower

Table 4 Means and standard deviations and the difference between two WLC and EST groups in quality of life

Measures		WLC group ($n = 8$) *M* (SD)	EST group ($n = 8$) *M* (SD)	*F*	Effect size
Physical	Pre-test	15.50 (1.41)	15.63 (1.40)	116.90***	0.92
	Post-test	16.63 (1.40)	21.25 (1.67)		
Psychological	Pre-test	14.25 (1.03)	14.13 (1.12)	34.13***	0.77
	Post-test	15.50 (1.19)	19.38 (1.92)		
Social relationships	Pre-test	7.13 (0.83)	7.00 (0.92)	7.06*	0.41
	Post-test	8.38 (1.06)	12.00 (0.75)		
Environmental	Pre-test	18.75 (1.28)	19.00 (1.31)	29.02***	0.74
	Post-test	20.13 (1.72)	25.38 (1.30)		

*$p < 0.05$, ***$p < 0.001$

Table 5 Means and standard deviations and the difference between two WLC and EST groups in cognitive emotion regulation strategies

Measures			WLC group ($n=8$) M (SD)	EST group ($n=8$) M (SD)	F	Effect size
Maladaptive cognitive emotion regulation strategies	Self-blame	Pre-test	13.88 (0.83)	13.75 (1.03)	12.88**	0.56
		Post-test	12.75 (0.70)	9.38 (0.91)		
	Catastrophizing	Pre-test	13.75 (1.03)	13.50 (1.19)	20.24**	0.67
		Post-test	12.50 (1.31)	8.63 (0.91)		
	Other-blame	Pre-test	14.00 (1.31)	14.13 (1.24)	24.01**	0.70
		Post-test	12.75 (1.67)	9.00 (0.75)		
	Rumination	Pre-test	14.50 (1.19)	14.13 (1.12)	82.65***	0.89
		Post-test	13.25 (1.03)	9.88 (1.55)		
Adaptive cognitive emotion regulation strategies	Positive refocusing	Pre-test	9.50 (1.19)	9.38 (1.06)	33.45***	0.79
		Post-test	10.50 (1.07)	14.00 (1.07)		
	Refocus on planning	Pre-test	8.25 (1.03)	8.50 (1.19)	10.66*	0.54
		Post-test	9.50 (1.07)	13.00 (1.19)		
	Positive reappraisal	Pre-test	8.50 (1.19)	8.75 (1.16)	26.54**	0.75
		Post-test	9.75 (1.03)	13.38 (1.30)		
	Acceptance	Pre-test	8.25 (0.70)	8.13 (0.83)	5.12*	0.36
		Post-test	9.13 (0.83)	13.63 (1.06)		
	Putting into perspective	Pre-test	9.38 (1.06)	9.25 (1.03)	18.49**	0.67
		Post-test	10.63 (1.06)	14.38 (1.06)		

*$p<0.05$, **$p<0.01$, ***$p<0.001$

Table 6 Mean and standard deviations and the difference between two WLC and EST groups in depression and mania symptoms

Variable		WLC group ($n=8$) M (SD)	EST group ($n=8$) M (SD)	F	η^2
Depression	Pre-test	16.50 (2.07)	14.63 (1.06)	52.47***	0.80
	Post-test	14.75 (2.05)	9.63 (1.06)		
Mania	Pre-test	19.88 (2.16)	19.25 (2.37)	43.13***	0.76
	Post-test	18.13 (2.16)	15.50 (2.33)		

***$p<0.001$

than those in the WLC group in the post-test. Also, the results of the univariate analysis of covariance showed a significant difference between the two groups in depression ($F=52.47$, $p<0.001$) and mania ($F=43.13$, $p<0.001$) on the post-test scores. Therefore, the EST effectively reduced depression and mania symptoms in patients with bipolar disorder.

Discussion

Bipolar disorder is a mood disorder characterized by episodes of mania and depression, which often result in poor quality of life, impaired cognitive performance, poor emotional regulation, and social functioning (American Psychiatric Association, 2013; Goodwin & Jamison, 2007; Grande et al., 2016). Emotional schemas may play a fundamental role in developing and maintaining bipolar disorder. Emotional schema therapy is a novel therapeutic approach that aims to modify emotional schemas to improve the quality of life of bipolar disorder patients. This study aimed to investigate the effectiveness of group emotional schema therapy on emotional schemas, quality of life, cognitive emotion regulation strategies, and symptoms among bipolar disorder patients.

The results showed that emotional schema therapy has significantly improved cognitive emotion regulation strategies, consistent with research on cognitive emotion regulation strategies and emotional schema therapy (Morvaridi et al., 2019; Naderi et al., 2015; Naderi Rajeh et al., 2017; Shahtoori et al., 2020). Also, the results showed that group emotional schema therapy caused a considerable improvement in quality of life components, consistent with research on the quality of life and emotional schema therapy (Babapour Kheiroddin et al., 2022; Frank et al., 2020). Results also indicated that emotional schema therapy, as a cognitive behavioral intervention, could be effective in reducing the symptoms of depression and mania in bipolar disorder patients; these results are consistent with studies on bipolar disorder symptoms, cognitive behavioral therapy, and emotional schema therapy (Chiang et al., 2017; Erfan et al., 2019; Furchtlehner et al., 2019; Ghasemkhanloo et al., 2021; Patelis-Siotis et al., 2001; Rezaei et al., 2015, 2016; Scott et al., 2006; Szentagotai & David, 2009; Ye et al., 2016).

In addition, emotional schema therapy techniques effectively led to a decrease in negative schemas and an increase in positive schemas, which is consistent with the model. In the present study, group emotional schema therapy increased the use of all positive emotional schemas, including validation, Comprehensibility, values, control, Consensus, Acceptance, and Expression, and significantly reduced the use of all negative emotional schemas, such as Guilt and shame, Simplistic view of emotion, numbness, Rationality, Duration, Rumination, and Blame. These results were consistent with other research results (Ahovan et al., 2020; Babapour Kheiroddin et al., 2022; Daneshmandi et al., 2014; Emam Zamani et al., 2019; Entezari et al., 2021; Erfan et al., 2019; Frank et al., 2020; Ghasemkhanloo et al., 2021; Ghovati et al., 2021; Hedayatimoghadam & Bakhshipour, 2022; Hosseini et al., 2019; Keyvanlo et al., 2022; Khaleghi et al., 2017; Kianipour et al., 2020; Masoumian et al., 2022; H. Mohammadi et al., 2019; Morvaridi et al., 2019; Naderi Rajeh et al., 2017; Naderi et al., 2015; Nasizadeh et al., 2021; Rezaee et al., 2017; Rezaei et al., 2015, 2016; Rezaeifard et al., 2022; Sabri et al., 2022; Shahsavani et al., 2020; Shahtoori et al., 2020).

In conclusion, group emotional schema therapy is an effective therapeutic intervention in managing bipolar disorder patients. By addressing negative emotional schemas and improving cognitive emotion regulation strategies, this therapy may help individuals better manage their symptoms and improve their overall quality of life. The study also showed that group emotional schema therapy significantly impacted emotional schemas, cognitive emotion regulation strategies, quality of life, and symptoms of bipolar disorder. This study highlights that modifying emotional schema is a fundamental approach to improving the everyday lives of bipolar disorder patients. This intervention, which requires group participation and group support, provides a cost-effective and practical approach for bipolar disorder individuals who may struggle with one-on-one therapy. Further research is needed to better understand the mechanisms behind this therapy's effectiveness and identify which individuals may benefit the most from this treatment approach. However, these initial findings provide hope for those living with bipolar disorder and highlight the importance of exploring new and innovative treatment options for this mental illness.

In addition, EST can be considered an adjunctive treatment to medication management for BD, as it does not directly target the biological aspects of the disorder, such as neurotransmitter imbalances or genetic factors. However, EST may indirectly affect the biological processes involved in BD, such as reducing stress, improving sleep quality, and enhancing mood stability. EST may also increase the adherence and effectiveness of medication, as it can help patients accept their diagnosis, understand the benefits and risks of medication, and cope with the side effects and stigma associated with medication use. Therefore, EST and medication management can be seen as complementary approaches that address different levels of the biopsychosocial model of BD. By combining EST and medication management, patients with BD may achieve better outcomes in symptom reduction, relapse prevention, and quality of life.

There is no direct evidence to compare the outcomes of EST between patients with BP-I and BP-II. In this study, we worked on the effect of EST on Improving

Emotional Schemas, Quality of Life, Cognitive Emotion Regulation, and Symptom Management in patients with bipolar disorder type 1 who received medication at the same time, and the effectiveness of EST on the components mentioned above was significant. On the other hand, according to a recent study by Kalantarian et al. (2023), EST was effective in improving emotional self-regulation, cognitive emotion regulation, and quality of life in patients with bipolar II disorder (BP-II) compared to a control group. Based on this, it can be concluded that EST can be an acceptable treatment for both bipolar I and bipolar II. However, more research is needed to test this hypothesis.

Despite the positive outcomes reported in the studies reviewed, several limitations must be considered when interpreting the findings. The first limitation of this study is the small sample size, which limits the generalizability of the results and the statistical power and precision of the analysis. The small sample size raised the probability of type II error, meaning that some true effects might have been missed due to insufficient evidence. The small sample size also resulted in wide confidence intervals, showing a high degree of doubt and uncertainty around the estimates of the effects. Second, the study involved several multiple comparisons of treatment groups, which increases the risk of type I errors and false positives. Therefore, the results of this study should be interpreted with caution and replicated with larger and more diverse samples in future studies. Future studies should also adjust the significance level or use correction methods to account for the multiple comparisons problem. Third, the study did not include a long-term follow-up assessment to determine the durability of the treatment effects. It is unclear whether the improvements in emotional schemas, quality of life, cognitive emotion regulation strategies, and symptoms observed in the post-test assessment would be sustained over time. Fourth, the treatment duration varied considerably across the studies, ranging from 12 to 24 weeks, making it difficult to establish the optimal duration for group emotional schema therapy. Finally, some studies failed to report details on the therapist's training and experience, which may impact the treatment intervention and the results.

Group emotional schema therapy (EST) is a promising intervention for bipolar disorder (BD) patients, but it needs further validation and testing. A future direction is to conduct a large-scale randomized controlled trial (RCT) with a more extended follow-up period and a more rigorous design. An RCT can minimize the bias and confounding factors that may affect the results, and a more extended follow-up period can assess the long-term outcomes and the maintenance of the treatment effects. A more rigorous design can include the following elements: a larger and more representative sample size, a standardized and validated measure of emotional schemas, a comparison group that receives an active treatment, a blind assessment of the outcomes by independent raters, a mediation analysis that examines the causal mechanisms of the treatment effects, and a moderation analysis that explores the individual differences and the contextual factors that may influence the treatment response and the outcomes. These elements can help establish the validity and reliability of the findings and provide more evidence for the effectiveness of EST for BD.

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Data Availability The datasets generated for this study are available on request to the corresponding author.

Declarations

Ethics Approval Research Ethics Committee of Ferdowsi University of Mashhad approved this study, and all participants signed a written informed consent.

Conflict of Interest The authors declare no competing interests.

References

Ahovan, M., Jajarmi, M., & Bakhshipoor, A. (2020). Comparing the effectiveness of Schema Therapy (ST) and Emotional Schema Therapy (EST) on clinical syndromes of individuals with Obsessive-Compulsive Symptoms (OCS). *Avicenna Journal of Nursing and Midwifery Care, 28*(3), 239–250. https://doi.org/10.30699/AJNMC.28.3.239

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders: DSM-5. https://doi.org/10.1176/appi.books.9780890425596

Babapour Kheiroddin, J., Pour Abbas Vafa, H., Livarjani, S., & Moheb, N. (2022). Comparison of the efficacy of emotional schema therapy and emotion-based therapy on marital burnout among women with emotional divorce. *Journal of Modern Psychological Researches, 17*(66), 35–43. https://doi.org/10.22034/JMPR.2022.15271

Basco, M. R., & Rush, A. J. (2005). *Cognitive-behavioral therapy for bipolar disorder*. Guilford Press.

Batmaz, S., & Özdel, K. (2015). Psychometric properties of the Turkish version of the Leahy Emotional Schema Scale-II. *Anatolian Journal of Psychiatry/Anadolu Psikiyatri Dergisi, 16*(1), 22–30. https://doi.org/10.5455/apd.170597

Batmaz, S., Ulusoy Kaymak, S., Kocbiyik, S., & Turkcapar, M. H. (2014). Metacognitions and emotional schemas: A new cognitive perspective for the distinction between unipolar and bipolar depression. *Comprehensive Psychiatry, 55*(7), 1546–1555. https://doi.org/10.1016/J.COMPPSYCH.2014.05.016

Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. F. (1996). Comparison of Beck depression inventories -IA and -II in psychiatric outpatients. *Journal of Personality Assessment, 67*(3), 588–597. https://doi.org/10.1207/S15327752JPA6703_13

Bo, Q., Tian, L., Li, F., Mao, Z., Wang, Z., Ma, X., & Wang, C. (2019). Quality of life in euthymic patients with unipolar major depressive disorder and bipolar disorder. *Neuropsychiatric Disease and Treatment, 15*, 1649–1657. https://doi.org/10.2147/NDT.S201567

Bull, P. (2017). Rating scales and safety measurements in bipolar disorder and schizophrenia – a reference guide. *Psychopharmacology Bulletin*, *47*(3), 77. /pmc/articles/PMC5546554/.

Chiang, K. J., Tsai, J. C., Liu, D., Lin, C. H., Chiu, H. L., & Chou, K. R. (2017). Efficacy of cognitive-behavioral therapy in patients with bipolar disorder: A meta-analysis of randomized controlled trials. *PloS One, 12*(5), e0176849. https://doi.org/10.1371/JOURNAL.PONE.0176849

Daneshmandi, S., Izadikhah, Z., Kazemi, H., & Mehrabi, H. (2014). The effectiveness of emotional schema therapy on emotional schemas of female victims of child abuse and neglect. *SSU_Journals, 22*(5), 1481–1494. http://jssu.ssu.ac.ir/article-1-2652-en.html

Der Van Gucht, E., Morriss, R., Lancaster, G., Kinderman, P., & Bentall, R. P. (2009). Psychological processes in bipolar affective disorder: Negative cognitive style and reward processing. *The British Journal of Psychiatry, 194*(2), 146–151. https://doi.org/10.1192/BJP.BP.107.047894

Edwards, E. R., & Wupperman, P. (2020). Research on emotional schemas: A review of findings and challenges. *Clinical Psychologist, 23*(1), 3–14. https://doi.org/10.1111/CP.12171

Emam Zamani, Z., Mashhadi, A., & Sepehri Shamloo, Z. (2019). The effectiveness of group therapy based on emotional schema therapy on anxiety and emotional schemas on women with generalized

anxiety disorder. *Research in Clinical Psychology and Counseling, 9*(1), 5–24. https://doi.org/10.22067/IJAP.V9I1.69238

Entezari, M., Jahangir, P., & Dokaneifard, F. (2021). Comparison of the effectiveness of emotion-focused group couple therapy and emotional schema therapy on experimental avoidance of stonewalling communication style couples. *Journal of Applied Family Therapy, 2*(3), 424–440. https://doi.org/10.22034/AFTJ.2022.310611.1229

Erfan, A., Ghezelbash, S., Kazemian, M., & Noorbala, A. (2019). The effectiveness of emotional schema therapy on impulsivity and mood symptoms of women with bipolar disorder. *Journal of Research in Behavioural Sciences, 17*(3), 388–399. https://doi.org/10.52547/RBS.17.3.388

Ferrari, A. J., Stockings, E., Khoo, J. P., Erskine, H. E., Degenhardt, L., Vos, T., & Whiteford, H. A. (2016). The prevalence and burden of bipolar disorder: Findings from the global burden of disease study 2013. *Bipolar Disorders, 18*(5), 440–450. https://doi.org/10.1111/BDI.12423

Frank, J. L., Reibel, D., Broderick, P., Cantrell, T., & Metz, S. (2020). The effectiveness of group emotional schema therapy on subjective, well-being, fatigue of patients with multiple sclerosis in Shiraz. *Psychological Methods and Models, 10*(38), 77–96. https://doi.org/10.1007/S12671-013-0246-2

Fristad, M. A., Weller, E. B., & Weller, R. A. (1992). The Mania Rating Scale: Can it be used in children? A preliminary report. *Journal of the American Academy of Child & Adolescent Psychiatry, 31*(2), 252–257.

Furchtlehner, L. M., Schuster, R., & Laireiter, A. R. (2019). A comparative study of the efficacy of group positive psychotherapy and group cognitive behavioral therapy in the treatment of depressive disorders: A randomized controlled trial. *The Journal of Positive Psychology, 15*(6), 832–845. https://doi.org/10.1080/17439760.2019.1663250

Garnefski, N., & Kraaij, V. (2006a). Cognitive emotion regulation questionnaire–development of a short 18-item version (CERQ-short). *Personality and Individual Differences, 41*(6), 1045–1053. https://doi.org/10.1016/j.paid.2006.04.010

Garnefski, N., & Kraaij, V. (2006b). Relationships between cognitive emotion regulation strategies and depressive symptoms: A comparative study of five specific samples. *Personality and Individual Differences, 40*(8), 1659–1669. https://doi.org/10.1016/J.PAID.2005.12.009

Garnefski, N., & Kraaij, V. (2007a). The Cognitive Emotion Regulation Questionnaire. *Https://Doi.Org/*https://doi.org/10.1027/1015-5759.23.3.141*, 23*(3), 141–149.https://doi.org/10.1027/1015-5759.23.3.141

Garnefski, N., & Kraaij, V. (2007b). The cognitive emotion regulation questionnaire: Psychometric features and prospective relationships with depression and anxiety in adults. *European Journal of Psychological Assessment, 23*(3), 141–149. https://doi.org/10.1027/1015-5759.23.3.141

Garnefski, N., & Kraaij, V. (2018). Specificity of relations between adolescents' cognitive emotion regulation strategies and symptoms of depression and anxiety. *Cognition and Emotion, 32*(7), 1401–1408. https://doi.org/10.1080/02699931.2016.1232698

Garnefski, N., Koopman, H., Kraaij, V., & ten Cate, R. (2009). Brief report: Cognitive emotion regulation strategies and psychological adjustment in adolescents with a chronic disease. *Journal of Adolescence, 32*(2), 449–454.

Ghasemkhanloo, A., Atadokht, A., & Sabri, V. (2021). The effectiveness of emotional schema therapy on the severity of depression, emotional dysregulation and emotional schemas in patients with major depressive disorder. *Shenakht Journal of Psychology and Psychiatry, 8*(3), 76–88. https://doi.org/10.32598/SHENAKHT.8.3.76

Ghassemzadeh, H., Mojtabai, R., Karamghadiri, N., & Ebrahimkhani, N. (2005). Psychometric properties of a Persian-language version of the Beck Depression Inventory-Second edition: BDI-II-PERSIAN. *Depression and Anxiety, 21*(4), 185–192. https://doi.org/10.1002/DA.20070

Ghaznavi, S., & Deckersbach, T. (2012). Rumination in bipolar disorder: evidence for an unquiet mind. *Biology of Mood & Anxiety Disorders, 2*(1), 1–11. https://doi.org/10.1186/2045-5380-2-2

Ghovati, A., Ahovan, M., Shahamat Dehsorkh, F., & Farnoosh, M. (2021). The Effectiveness of Emotion Schema Therapy on Rumination and the Extreme Accountability of Patients with Obsessive-Compulsive Disorder. *Journal of Psychological Studies, 16*(4), 7–24. https://doi.org/10.22051/PSY.2021.31187.2216

Goodwin, F. K., & Jamison, K. R. (2007). *Manic-depressive illness: Bipolar disorders and recurrent depression*. Oxford University Press. https://doi.org/10.1176/appi.ajp.2007.07121846

Grande, I., Berk, M., Birmaher, B., & Vieta, E. (2016). Bipolar disorder. *The Lancet, 387*(10027), 1561–1572. https://doi.org/10.1016/S0140-6736(15)00241-X

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*(3), 271–299. https://doi.org/10.1037/1089-2680.2.3.271

Gruber, J. (2011). Can feeling too good be bad? Positive emotion persistence (PEP) in bipolar disorder. *Current Directions in Psychological Science, 20*(4), 217–221. https://doi.org/10.1177/0963721411414632

Gruber, J., Eidelman, P., Johnson, S. L., Smith, B., & Harvey, A. G. (2011). Hooked on a feeling: Rumination about positive and negative emotion in inter-episode bipolar disorder. *Journal of Abnormal Psychology, 120*(4), 956–961. https://doi.org/10.1037/A0023667

Hasani, J. (2010). The psychometric properties of the cognitive emotion regulation questionnaire (CERQ). *Journal of Clinical Psychology, 2*(3), 73–84. https://doi.org/10.22075/jcp.2017.2031

Hedayatimoghadam, S., & Bakhshipour, A. (2022). The effectiveness of emotional schema therapy on emotional divorce and emotional maturity of couples seeking divorce in City Babol. *Journal of Excellent in Counceling and Psychotherapy, 11*(42), 36–44. https://journal-counselling.islamshahr.iau.ir/article_692042.html

Henry, B. L., Minassian, A., & Perry, W. (2013). Everyday functional ability across different phases of bipolar disorder. *Psychiatry Research, 210*(3), 850–856. https://doi.org/10.1016/J.PSYCHRES.2013.04.006

Hosseini, M., Ahadi, H., Jomehri, F., Kraskian-Mujembari, A., & Ahadi, M. (2019). The effectiveness of emotional schemas group therapy on pain and depression in patients with rheumatoid arthritis. *Psychological Methods and Models, 10*(35), 119–135. https://jpmm.marvdasht.iau.ir/article_3516.html

Hu, T., Zhang, D., Wang, J., Mistry, R., Ran, G., & Wang, X. (2014). Relation between Emotion Regulation and Mental Health: A Meta-Analysis Review. *Psychological Reports, 114*(2), 341–362. https://doi.org/10.2466/03.20.PR0.114K22W4

Johnson, S. L., Gruber, J., & Eisner, L. R. (2008). Emotion and Bipolar Disorder. *Emotion and Psychopathology: Bridging Affective and Clinical Science*, 123–150. https://doi.org/10.1037/11562-006

Kalantarian, E., Homaei, R., & Bozorgi, Z. D. (2023). Effects of emotional schema therapy and dialectical behavior therapy on cognitive emotion regulation in patients with bipolar II disorder. *Modern Care Journal 2023 21:1*, *21*(1). https://doi.org/10.5812/MCJ-138135

Kessler, R., Chiu, W., Demler, O., Merikangas, K., & Walters, E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General, 62*, 617–627. https://doi.org/10.1001/archpsyc.62.6.617

Keyvanlo, S., Nariman, M., & Basharpoor, S. (2022). The effectiveness of group therapy based on Emotional Schema Therapy (EST) on difficulties in emotion regulation among mothers having children with intellectual disabilities. *Journal of Applied Family Therapy, 3*(1), 243–262. https://doi.org/10.22034/AFTJ.2022.318434.1300

Khafif, T. C., Belizario, G. O., Silva, M., Gomes, B. C., & Lafer, B. (2021). Quality of life and clinical outcomes in bipolar disorder: An 8-year longitudinal study. *Journal of Affective Disorders, 278*, 239–243. https://doi.org/10.1016/J.JAD.2020.09.061

Khaleghi, M., Leahy, R. L., Akbari, E., Mohammadkhani, S., Hasani, J., & Tayyebi, A. (2017). Emotional schema therapy for generalized anxiety disorder: A single-subject design. *International Journal of Therapy, 10*(4), 269–282. https://doi.org/10.1521/IJCT.2017.10.4.269

Khaleghi, M., Leahy, R. L., Akbari, E., Nasab, N. S., & Bastami, M. (2021). Emotional schemas contribute to suicide behavior and self-harm: Toward finding Suicidal Emotional Schemas (SESs). *International Journal of Cognitive Therapy, 14*(3), 485–496. https://doi.org/10.1007/S41811-021-00115-9/METRICS

Khanzadeh, M., Edrisi, F., Mohammadkhani, S., & Saidian, M. (2013). Investigation of the factor structure and psychometric properties of emotional schema scale on a normal sample of Iranian students. *Quarterly of Clinical Psychology Studies, 3*(11), 91–119. https://jcps.atu.ac.ir

Kianipour, E., Hassani, F., Rahnejat, A. M., & Ghanbaripanah, A. (2020). Compare effectiveness of emotional schema therapy and mindfulness-based cognitive therapy on decrease of cognitive distortions in women with panic disorder. *Journal of Psychological Studies, 16*(2), 75–90. https://doi.org/10.22051/PSY.2020.28863.2054

Kraiss, J. T., ten Klooster, P. M., Moskowitz, J. T., & Bohlmeijer, E. T. (2020). The relationship between emotion regulation and well-being in patients with mental disorders: A meta-analysis. *Comprehensive Psychiatry, 102*, 152189. https://doi.org/10.1016/J.COMPPSYCH.2020.152189

Leahy, R. L. (2002). A model of emotional schemas. *Cognitive and Behavioral Practice, 9*(3), 177–190. https://doi.org/10.1016/S1077-7229(02)80048-7

Leahy, R. L. (2015). *Emotional schema therapy*. The Guilford Press.

Leahy, R. L. (2018). Emotional schema therapy: Distinctive features. In *Emotional Schema Therapy: Distinctive Features*. Routledge. https://doi.org/10.4324/9780203711095/EMOTIONAL-SCHEMA-THERAPY-ROBERT-LEAHY

Leahy, R. L. (2019). Introduction: Emotional schemas and emotional schema therapy. *International Journal of Cognitive Therapy, 12*(1), 1–4. https://doi.org/10.1007/S41811-018-0038-5/METRICS

Leahy, R. L. (2022). Emotional schemas. *Cognitive and Behavioral Practice, 29*(3), 575–580. https://doi.org/10.1016/J.CBPRA.2022.02.004

Leahy, R. L., Tirch, D., & Napolitano, L. A. (2011). *Emotion regulation in psychotherapy: A practitioner's guide*. Guilford Press.

Martín-Subero, M., Berk, L., Dodd, S., Kamalesh, V., Maes, M., Kulkarni, J., De Castella, A., Fitzgerald, P. B., & Berk, M. (2014). Quality of life in bipolar and schizoaffective disorder — A naturalistic approach. *Comprehensive Psychiatry, 55*(7), 1540–1545. https://doi.org/10.1016/J.COMPPSYCH.2014.05.009

Masoumian, S., Gharraee, B., Ramezani Farani, A., Shaeiri, M. R., & Asgharnejadfarid, A. A. (2022). Comparing the effectiveness of schema therapy augmented exposure and response prevention with exposure and response prevention and pharmacotherapy in obsessive-compulsive disorder. *Iranian Journal of Psychiatry and Clinical Psychology, 28*(2), 162–181. https://doi.org/10.32598/IJPCP.28.2.2497.2

McRae, K., & Gross, J. J. (2020). Emotion regulation. *Emotion, 20*(1), 1–9. https://doi.org/10.1037/EMO0000703

Merikangas, K., Akiskal, H., Angst, J., Greenberg, P., Hirschfeld, R., Petukhova, M., et al. (2007). Lifetime and 12-month prevalence of bipolar spectrum disorder in the National Comorbidity Survey replication. *Archives of General Psychiatry*, *64*, 543–552. https://jamanetwork.com/journals/jamapsychiatry/article-abstract/482285.

Michalak, E. E., Yatham, L. N., Dc, D., & Lam, R. W. (2005). Perceived quality of life in patients with bipolar disorder. Does group psychoeducation have an impact? *Canadian Journal of Psychiatry, 50*(2), 95–100.

Michalak, E. E., Yatham, L. N., & Lam, R. W. (2005b). Quality of life in bipolar disorder: A review of the literature. *Health and Quality of Life Outcomes, 3*(1), 1–17. https://doi.org/10.1186/1477-7525-3-72/TABLES/2

Mohammadi, Z., Pourshahbaz, A., Poshtmashhadi, M., Dolatshahi, B., Barati, F., & Zarei, M. (2018). Psychometric properties of the young mania rating scale as a mania severity measure in patients with bipolar I disorder. *Practice in Clinical Psychology, 6*(3), 175–182.

Mohammadi, H., Sepehri Shamlou, Z., & Asghari Ebrahim Abad, M. J. (2019). The effectiveness of group emotional schema therapy on decreasing loneliness and rumination in divorced women. *Journal of Woman and Family Studies, 7*(2), 115–136. https://doi.org/10.22051/JWFS.2020.19718.1708

Morton, E., Michalak, E. E., & Murray, G. (2017). What does quality of life refer to in bipolar disorders research? A systematic review of the construct's definition, usage and measurement. *Journal of Affective Disorders, 212*, 128–137. https://doi.org/10.1016/J.JAD.2017.01.026

Morvaridi, M., Mashhadi, A., Shamloo, Z. S., & Leahy, R. L. (2019). The effectiveness of group emotional schema therapy on emotional regulation and social anxiety symptoms. *International Journal of Cognitive Therapy, 12*(1), 16–24. https://doi.org/10.1007/S41811-018-0037-6/METRICS

Murray, G., & Michalak, E. E. (2012). The quality of life construct in bipolar disorder research and practice: Past, present, and possible futures. *Bipolar Disorders, 14*(8), 793–796. https://doi.org/10.1111/BDI.12016

Naderi, Y., Moradi, A. R., Hasani, J., & Noohi, S. (2015). Effectiveness of emotional schema therapy on cognitive emotion regulation strategies of combat-related post traumatic stress disorder veterans. *Iranian Journal of War and Public Health, 7*(3), 147–155. http://ijwph.ir/article-1-492-en.html

Naderi Rajeh, Y., Zarghami, M., & Bagheri, M. (2017). The efficiency of emotional schema therapy on level of anxiety and depression, symptom and signs of patients suffering from Post-Traumatic Stress Disorder (PTSD). *International Journal of Behavioral Sciences, 11*(3), 114–120. https://www.behavsci.ir/article_67983_115bfda58825ee92a11926b1504f7077.pdf

Nasizadeh, H., Moheb, N., Livarjani, S., Babapour, K., & Moosavi, Z. (2021). Comparison between effectiveness of dialectical behavioral therapy and emotional schema therapy on pain severity and performance limitation in people who suffering of tension headache. *Journal of Anesthesiology and Pain, 12*(2002362), 104–120. http://jap.iums.ac.ir/article-1-5572-fa.html

Onur, O., Kotrotsiou, E., Tzounis, E., Daniil, Z., Hatzoglou, C., Skenteris, N., & Gourgoulianis, K. (2017). Emotional schemas: A new cognitive perspective for the distinction between unipolar

depression and bipolar disorder. *European Psychiatry, 41*(S1), S243–S243. https://doi.org/10.1016/J.EURPSY.2017.02.016

Pascual-Sánchez, A., Jenaro, C., & Montes-Rodríguez, J. M. (2019). Quality of life in euthymic bipolar patients: A systematic review and meta-analysis. *Journal of Affective Disorders, 255*, 105–115. https://doi.org/10.1016/J.JAD.2019.05.032

Patelis-Siotis, I., Young, L. T., Robb, J. C., Marriott, M., Bieling, P. J., Cox, L. C., & Joffe, R. T. (2001). Group cognitive behavioral therapy for bipolar disorder: A feasibility and effectiveness study. *Journal of Affective Disorders, 65*(2), 145–153. https://doi.org/10.1016/S0165-0327(00)00277-9

Picó-Pérez, M., Radua, J., Steward, T., Menchón, J. M., & Soriano-Mas, C. (2017). Emotion regulation in mood and anxiety disorders: A meta-analysis of fMRI cognitive reappraisal studies. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 79*, 96–104. https://doi.org/10.1016/J.PNPBP.2017.06.001

Rezaee, F., Sepahvandi, M. A., & Mirzaee Haabili, K. (2017). The effectiveness of emotional schema therapy on cognitive-behavioral avoidance and the severity of generalized anxiety of symptoms in female students with generalized anxiety disorder. *Journal of Psychological Studies, 13*(1), 43–62. https://doi.org/10.22051/PSY.2017.12425.1276

Rezaei, M., Ghadampur, E., Rezaei, M., & Kazemi, R. (2015). Effectiveness of emotional schema therapy on rumination and severity of depression in patients with major depressive disorder. *Journal of Clinical Psychology, 7*(4), 45–58. https://doi.org/10.22075/JCP.2017.2217

Rezaei, M., Ghazanfari, F., & Reazei, F. (2016). Effectiveness of emotional schema therapy on severity of depression and rumination in people with major depressive disorder. *Journal of Shahid Sadoughi University of Medical Sciences, 24*(1), 41–54. http://jssu.ssu.ac.ir/article-1-3532-en.html

Rezaeifard, A., Mazraeh, N., Khodarahimi, S., Giski, M. M., & Rasti, A. (2022). The effect of group-based emotional schema therapy on anxiety sensivity and anxiety severity in outpatient females with generalized anxiety disorder. *Journal of Evidence-Based Psychotherapies, 22*(1), 39–54. https://doi.org/10.24193/JEBP.2022.1.3

Sabri, V., Yaghubi, H., Hasani, J., & Mahmodalilo, M. (2022). The effectiveness of dialectical behavior therapy and emotional schema therapy on reducing the symptoms of borderline personality disorder. *Clinical Psychology and Personality, 19*(2), 1–16. https://doi.org/10.22070/CPAP.2021.13899.1048

Scott, J., Paykel, E., Morriss, R., Bentall, R., Kinderman, P., Johnson, T., & Hayhurst, R. A. H. (2006). Cognitive–behavioural therapy for severe and recurrent bipolar disorders: Randomised controlled trial. *The British Journal of Psychiatry, 188*(4), 313–320. https://doi.org/10.1192/BJP.188.4.313

Shabani, A., Akbari, M., & Dadashi, M. (2010). Reliability and validity of the Bipolar Depression Rating Scale on an Iranian sample. *Archives of Iranian Medicine, 13*(3), 217–222. https://journalaim.com/Article/53

Shahsavani, S., Mashhadi, A., & Bigdeli, I. (2020). The effect of group emotional schema therapy on cognitive emotion strategies in women with migraine headaches: A pilot study. *International Journal of Cognitive Therapy, 13*(4), 328–340. https://doi.org/10.1007/S41811-020-00073-8

Shahtoori, K. G., Rahnejat, A. M., Dabaghi, P., Taghva, A., Donyavi, V., Ebrahimi, M. R., & Ghahvehchi-Hosseini, F. (2020). Effectiveness of emotional schema therapy on improvement in cognitive -emotion regulation in attempting to self-mutilation soldiers. *Journal of Military Medicine, 22*(9), 956–968. https://doi.org/10.30491/JMM.22.9.4

Shahvarani, S., & Khormaie, F. (2018). Evaluate the psychometric properties of the emotional schemas scale. *Rooyesh-e-Ravanshenasi, 7*(8), 261–274. http://frooyesh.ir/article-1-254-fa.html

Skevington, S. M., Lotfy, M., & O'Connell, K. A. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial a Report from the WHOQOL Group. *Quality of Life Research, 13*(2), 299–310. https://doi.org/10.1023/B:QURE.0000018486.91360.00

Stockings, E., Degenhardt, L., Lee, Y. Y., Mihalopoulos, C., Liu, A., Hobbs, M., & Patton, G. (2015). Symptom screening scales for detecting major depressive disorder in children and adolescents: A systematic review and meta-analysis of reliability, validity and diagnostic utility. *Journal of Affective Disorders, 174*, 447–463. https://doi.org/10.1016/J.JAD.2014.11.061

Szentagotai, A., & David, D. (2009). The efficacy of cognitive-behavioral therapy in bipolar disorder: A quantitative meta-analysis. *The Journal of Clinical Psychiatry, 70*(1), 5997. https://doi.org/10.4088/JCP.08R04559YEL

The WHOQOL Group. (1995). The World Health Organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. *Social Science & Medicine, 41*(10), 1403–1409. https://doi.org/10.1016/0277-9536(95)00112-K

The WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BREF Quality of Life Assessment. *Psychological Medicine, 28*(3), 551–558. https://doi.org/10.1017/S0033291798006667

Thompson, R. A. (1994). Emotion regulation: a theme in search of definition. *Monographs of the Society for Research in Child Development, 59*(2–3), 25–52. https://srcd.onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-5834.1994.tb01276.x

Townsend, J., disorders, L. A.-B., & 2012, undefined. (2012). Emotion processing and regulation in bipolar disorder: a review. *Wiley Online Library*, *14*(4), 326–339. https://doi.org/10.1111/j.1399-5618.2012.01021.x

Usefy, A. R., Ghassemi, G. R., Sarrafzadegan, N., Mallik, S., Baghaei, A. M., & Rabiei, K. (2010). Psychometric properties of the WHOQOL-BREF in an iranian adult sample. *Community Mental Health Journal, 46*(2), 139–147. https://doi.org/10.1007/S10597-009-9282-8

Wang, Y. P., & Gorenstein, C. (2013). Psychometric properties of the Beck Depression Inventory-II: A comprehensive review. *Brazilian Journal of Psychiatry, 35*(4), 416–431. https://doi.org/10.1590/1516-4446-2012-1048

Wolkenstein, L., Zwick, J. C., Hautzinger, M., & Joormann, J. (2014). Cognitive emotion regulation in euthymic bipolar disorder. *Journal of Affective Disorders, 160*, 92–97. https://doi.org/10.1016/J.JAD.2013.12.022

Yavuz, K. F., Türkçapar, M. H., Demirel, B., & Karadere, E. (2011). Adaptation, validity and reliability of the Leahy Emotional Schema Scale Turkish version based on Turkish university students and workers. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences, 24*(4), 273. Retrieved January 31, 2023, from https://dusunenadamdergisi.org/storage/upload/pdfs/1587108204-en.pdf

Ye, B. Y., Jiang, Z. Y., Li, X., Cao, B., Cao, L. P., Lin, Y., Xu, G. Y., & Miao, G. D. (2016). Effectiveness of cognitive behavioral therapy in treating bipolar disorder: An updated meta-analysis with randomized controlled trials. *Psychiatry and Clinical Neurosciences, 70*(8), 351–361. https://doi.org/10.1111/PCN.12399

Young, R. C., Biggs, J. T., Ziegler, V. E., & Meyer, D. A. (2000). Young mania rating scale. In *Handbook of psychiatric measures* (pp. 540–542).

Youngstrom, E. A., Kmett Danielson, C., Findling, R. L., Gracious, B. L., & Calabrese, J. R. (2002). Factor structure of the Young Mania Rating Scale for use with youths ages 5 to 17 years. *Journal of Clinical Child and Adolescent Psychology, 31*(4), 567–572.