University of Hormozgan

Iranian Journal of Educational Research

Print ISSN: 1735 - 563X Online ISSN: 2980 - 874X

Homepage: http://ijer.hormozgan.ac.ir

Educational and Behavioral Research Center

The Effectiveness of Schema Therapy on the Mental Health and Emotional Self-regulation of Depressed Women in Bandar Abbas City

Zohreh Jafari[1] Mahin Askari[2]✉, Nooshin Taghinejad[3]

1. M A. in Clinical Psychology, Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
2. Associate Professor, University of Medical Sciences, Bandar Abbas, Iran, mahinask2005@yahoo.com
3. Assistant Professor, Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran

Article Info

Article type:

Research Article

Article history:

Received 26 Feb. 2024

Received in revised form 19 May. 2024

Accepted 25 Apr. 2024

Published online 01 Mar. 2025

Keywords:

Schema therapy,

Emotion regulation,

Mental health,

Depressed women

ABSTRACT

Objective: Schema therapy is a therapeutic approach that focuses on identifying and changing negative patterns of thinking and behavior that contribute to emotional distress. This study aimed to investigate the impact of schema therapy on the mental health and emotional self-regulation of depressed women in Bandar Abbas City.

Methods: The research design was a quasi-experimental pretest-posttest with a control group. The statistical population of this research was all the women involved with the issue of mental illness disorder and depression who referred to the counseling centers of Bandar Abbas in 2022-2023. In this case, 30 participants were selected by purposeful sampling and randomly replaced in two equal groups of 15 people (one experimental group and one control group). In this study, a questionnaire was used as the main research tool. The questionnaire included several validated measures, namely the Beck Depression Inventory (BDI), the Emotion Regulation Questionnaire (ERQ), the Schema Therapy Inventory (STI), and the General Health Questionnaire (GHQ).

Results: After eight sessions of schema therapy in the experimental group, the questionnaires were given to the participants again. The data collected from these questionnaires was then graphed to visualize the results. Analysis of the graphed data revealed a therapeutic efficacy of 62% and 63% for the first and second hypotheses, respectively.

Conclusions: The study found that schema therapy was effective in reducing mental health disorders and improving emotional self-regulation in depressed women. This suggests that schema therapy can be a valuable intervention for improving mental health and emotional well-being in depressed women.

Cite this article: Jafari, Z., Askari, M. & Taghinejad, N. (2025). The Effectiveness of schema therapy on the mental health and emotional self-regulation of depressed women in Bandar Abbas city. *Iranian Journal of Educational Research*, 4 (1), 271-294.

DOI: https://doi.org/10.22034/4.1.271

Publisher: University of Hormozgan.

DOI: https://doi.org/10.22034/4.1.271

Introduction

Over the last decade, researchers have become increasingly interested in identifying factors that underlie or sustain risky behaviors (i.e., any behavior that poses a risk of a negative outcome, be it physical, emotional, social, or financial), with particular emphasis on such behaviors that increase the risk of negative health or safety consequences, such as aggressive behavior, intentional self-harm and psychological disorders (Weiss et al., 2015). All people may suffer from depression at different stages of their life. It can affect their physical, emotional, behavioral and mental health. In depressed people, symptoms such as sadness, feelings of worthlessness, difficulty concentrating, inability to think, feelings of guilt, insomnia, feelings of failure and many other dangerous symptoms can be observed. Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest. Major Depressive Disorder (MDD) is a common mental disorder characterized by symptoms such as anhedonia (loss of desire), depression, fatigue, poor concentration, sleep and appetite disorders, and possible suicidal ideation (Azharuddin et al., 2023). Depression is one of the most common mental illnesses, affecting a significant proportion of the population worldwide (Nochaiwong et al., 2021). To receive a diagnosis, symptoms must last at least two weeks. Depression is an extremely debilitating mental disorder that can have significant consequences if left untreated. It is crucial for people with depression to receive appropriate treatment to prevent the condition from becoming chronic and to mitigate its impact on various aspects of their lives. Patients with major depressive disorder have a significantly higher risk of functional limitations at work (Friedrich, 2017). They may face challenges such as job loss or job burnout. The impact of depression on work can be severe, with people almost 26 times more likely to experience functional impairment (Rouzbahani & Sharifi, 2018). Depression is a leading cause of disability worldwide. In 2017, it was ranked the 11th leading cause of disability worldwide. However, it rose to the fifteenth position in the same year. The increasing prevalence of depression and its impact on society require more attention and resources to address this mental health issue (Kupferberg & Hasler, 2023).

Depression in women is often characterized by pervasive negative thinking, chronic emotional dysregulation, and interpersonal conflict - areas in which schema therapy has shown promising results. For example, ST has been effective in reducing symptoms of post-traumatic stress disorder, anxiety, and other mood disorders by targeting maladaptive schemas – deeply held beliefs

[DOI: 10.22034/4.1.271]

developed early in life that can perpetuate mental health problems. This therapy focuses on identifying and changing these unhelpful schemas, promoting greater emotional stability and healthier coping mechanisms (Taylor et al., 2017).

The relationship between depression in women and marital conflicts has been extensively studied in the field of psychology. Research has shown that there is a direct and complex interaction between these two factors and that declines in marital satisfaction are often accompanied by increases in depressive symptoms (Mahoor & Farzinfar, 2017). Several treatment models have been developed to explain and treat depression in women. One such approach is Emotion-Focused Therapy (EFT), which focuses on reducing and understanding depression in women and other related disorders by emphasizing the role of emotion dysregulation and mental health in transdiagnostic variables (Greenberg, 2017). It is important to note that people with depression not only experience symptoms of depression, but also experience a decline in their quality of life, which directly impacts their relationships with family members (Aghaee et al., 2019).

Schema therapy is a new and integrated treatment that provides a structured program for the assessment and modification of early maladaptive schemas, based on classic cognitive behavioral therapy and combining cognitive, behavioral, interpersonal, attachment and experiential techniques for the assessment and modification of early maladaptive schemas. Schema therapy emphasizes the developmental roots of psychological problems in childhood and adolescence, the use of provocative techniques, and the concept of maladaptive coping styles (Amini et al., 2023). Schema therapy can increase cognitive flexibility and resiliency in patients with generalized anxiety (Mohammadi et al., 2019).

Given the higher levels of mental health problems and emotional difficulties in women with depressive disorders, it is crucial to implement psychological and supportive interventions to improve their well-being and promote the mental health of both mothers and other family members. An effective intervention for reducing depression in women is emotion-focused therapy. Emotion schemas, which are accurate representations of childhood and adolescent environments, play an important role in the development of various disorders such as interpersonal dependence, anxiety, depression, substance abuse, and psychosomatic disorders. The underlying assumption of this perspective is that adverse childhood events can contribute to the formation of maladaptive

[DOI: 10.22034/4.1.271]

schemas and that the presence of these maladaptive schemas provides the basis for behavioral and emotional problems in individuals (Mohammadi et al., 2019).

Emotional regulation plays an important role in understanding depression in women and its impact on symptoms and signs. It refers to the ability to initiate and control one's thoughts, emotions and behaviors to achieve specific goals. These goals may be cognitive in nature, such as improving understanding, or socioemotional in nature, such as managing anger and promoting better relationships with peers (Shabani & Khalatbari, 2019). Emotional regulation involves organizing various perceptions, emotional experiences, memories, thoughts, and self-responses to stress through planning, executing, and reflecting on goal-directed behaviors (Westphal & Bonanno, 2004). When people experience a loss of emotional regulation, it can lead to vulnerabilities or a predisposition to illness, including depression. In children, this can manifest itself in aggression and physical punishment (Soltanizadeh et al., 2021). Researchers have highlighted the significant role of maladaptive emotional regulation patterns as a mediating factor in women's vulnerability to depression. Some authors even consider women's depression to be a disorder resulting from disturbances in emotional regulation and consider it to be a consequence of maladaptive emotional regulation (Yan et al., 2014). According to these theories, the symptoms and signs of depression in women can be attributed to individual deficits in the effective and adaptive regulation of their emotions (Evans-Lacko et al., 2018).

Regulating emotions is of great importance for parents to adapt to inevitable major changes that occur with increasing age (Shenaar-Golan et al., 2022). The strategies that individuals use to regulate their emotions can contribute to improving human well-being in various biological, psychological, social and ethical dimensions, thereby increasing their quality of life and performance (Otared et al., 2019). Research shows that emotion regulation is linked to the emergence of aggression and disruptive behavior and that individuals with difficulty regulating emotions are more prone to risk-taking and risky behaviors (Weiss et al., 2015). Furthermore, (HajShamsayi et al., 2014) showed a significant negative relationship between emotion regulation and maladjustment.

Emotion schemas have been conceptualized as the interpretation of emotions and the use of coping strategies in response to them (Leahy, 2009). According to this model, individuals differ in how they interpret and evaluate their emotional experiences and may use different coping strategies in

[DOI: 10.22034/4.1.271]

response. Emotional Schema Therapy precisely targets emotion processing and negative interpretations, thereby encouraging patients to replace ineffective and maladaptive coping strategies with effective strategies when facing pleasant and unpleasant emotions (Leahy, 2018). Numerous studies have shown the association between emotion schemas and a wide range of mental disorders, including obsessive-compulsive disorder (Sookman, 2018), generalized anxiety disorder (Khaleghi et al., 2017), borderline personality disorder and depression (Leahy, 2018). Furthermore, (Ghasemi & Movahedi, 2022) found a significant association between all emotion schemas except overcompensation and depression in women. Emotion-focused therapy schemas are an integrated metacognitive approach based on the emotion schema model (Ghasemi & Movahedi, 2022).

Emotion-focused therapy schemas, introduced by (Leahy, 2009) are a cognitive-behavioral therapeutic approach that focuses on emotions. The main goal of this therapy is to help patients recognize and differentiate between different emotions, normalize emotional experiences, and make connections between emotions and interpersonal relationships and personal needs (Ghasemkhanloo et al., 2021). In this way, emotion-focused therapy schemas are intended to help individuals identify problematic beliefs and emotion schemas that may contribute to emotional difficulties (Kaviani et al., 2009).

Recently, medical professionals have recognized the inclusion of cognitive behavioral therapy (CBT) programs as an effective strategy for preventing and treating depression in women and reducing various psychosocial and health-related consequences (Abbas et al., 2023). CBT is a form of psychological treatment that is effective for a range of problems including depression, anxiety disorders, alcohol and drug use problems, marital problems, eating disorders and serious mental illness. CBT treatment typically involves changing thought patterns, such as identifying thought distortions and re-evaluating them in light of reality, better understanding the behavior and motivation of others, using problem-solving skills to deal with difficult situations to deal with it, and a greater confidence in one's own abilities. Cognitive behavioral therapy also involves efforts to change behavior patterns, such as facing fears rather than avoiding them, preparing for potentially problematic interactions with others through role-playing, and learning to calm the mind and relax the body (Shahriari et al., 2018).

[DOI: 10.22034/4.1.271]

Various studies have demonstrated the positive effects of emotion-focused therapy schemas. For example, emotion-focused therapy schemas have been found to reduce cognitive rumination in patients with depression (Rezaee et al., 2016) and reduce anxiety in women who are victims of child abuse (Daneshmandi et al., 2014). They were also effective in reducing generalized anxiety in patients (Momeni & Radmehr, 2018), treatment-resistant obsessive-compulsive disorder (Asli Azad et al., 2020), cognitive avoidance and post-event rumination in individuals with social anxiety (Ghadampour et al., 2018). The results of a study by (Berking et al., 2008) suggested that modifying maladaptive cognitive emotion regulation strategies can reduce depressive symptoms. Replacing parts of the standard CBT treatment with the emotion-regulation training enhanced the effects of the CBT treatment on skills application and on other measures of mental health (Berking et al., 2008).

Several studies have investigated the relationship between cognitive emotion regulation strategies and depressive symptoms. (Anvari & Sardary, 2019) found that predicting depression based on adaptive and maladaptive cognitive emotion regulation strategies is important. They also emphasized the role of positive cognitive emotion regulation strategies as a social support mechanism and their impact on neurotic disorders such as depression (Anvari & Sardary, 2019). (Körük & Özabacı, 2018) conducted a study that showed the effectiveness of schema therapy in reducing depressive symptoms. The results of the analysis using the random effect model showed that schema therapy had a high level of efficacy in the treatment of depressive disorders. It had been determined that none of the hypothetic moderator variables had moderator functions.

The issues discussed indicate that depressed women experience significant stress, which poses numerous challenges to both the family and society. Short-term, medium-term and long-term planning is urgent for treatment, and special attention to depressed women is undeniably necessary. Therefore, the present study was based on the assumptions that schema therapy and emotion-focused therapy are effective in improving mental health of depressed women. Given the high prevalence of depression in women and the associated health problems that impact their quality of life, it is crucial to find effective methods to manage their mental health problems. The present study was conducted to fill the existing gap. This study aims to investigate the effects of schema therapy on the mental health and emotional self-regulation of depressed women in Bandar Abbas City.

[DOI: 10.22034/4.1.271]

Material and Methods

The research design was a quantitative study and quasi-experimental pretest-posttest with a control group. The study population of this study consisted of depressed women in Bandar Abbas City in 2023 who had received counseling and psychological services in one of the three centers in the last six months. Among them, 30 people were selected based on structured interviews using the Diagnostic Criteria and Statistical Manual of Mental Disorders and a score of over 11 on the Beck Depression Inventory test and randomly assigned to two groups. Based on the inclusion criteria, a total of 30 participants were purposefully selected as a sample and randomly assigned to the experimental group (15 people) and the control group (15 people). The inclusion criteria for the study were that they were between 30 and 50 years old, had at least a bachelor's degree, did not suffer from severe mental disorders and did not participate in accompanying therapy programs. Before administering the questionnaires and data collection, the researchers took several steps to ensure the smooth running of the study and the ethical treatment of participants. These steps included individual briefings with the selected sample to explain the research objectives and methodology, as well as establishing appropriate communication channels.

Several ethical considerations were taken into account in conducting the research. The researchers obtained written informed consent from participants who agreed to take part in the study. They informed participants about the research objectives, methodology and any potential risks and benefits associated with their participation. The researchers ensured the confidentiality of participants' information. They have taken measures to protect the privacy of participants and maintain the confidentiality of their data. The researchers established inclusion and exclusion criteria for participant selection. These criteria were likely based on the research objectives and the specific characteristics required for the study. Written consent was obtained from women who agreed to participate in the intervention and they were provided with questionnaires to complete. The study consisted of an experimental group and a control group. The experimental group received the emotion-focused therapy intervention, while the control group had discussions with the examiner but did not receive active and specific treatment. After completing the interventions, immediate post-test data collection was conducted to assess the results. Ethical considerations were taken into account throughout the research process. The researchers ensured the confidentiality of the information and psychologically prepared the participants for their participation in the study.

[DOI: 10.22034/4.1.271]

In addition, the inclusion and exclusion criteria were assessed and participants' satisfaction with participation in the psychiatric diagnostic program was determined. Participants who met the criteria were subsequently referred to a psychiatrist at one of the counseling centers and psychological service centers. Before the interventions, both the experimental group and the control group completed pretests, which consisted of questionnaires on psychological well-being, emotion regulation, and depression. Following the pre-tests, independent variable emotion-focused therapy was implemented for the experimental group in eight sessions, with two sessions per week and each session lasting two hours.

Therapy sessions were based on the Emotion-focused Therapy Protocol developed by (Leahy, 2009). This therapy consisted of 8 sessions, each lasting 2 hours, with two sessions per week conducted by a trained researcher for the experimental group. Emotion-focused therapy focuses on various concepts, assessments, interpretations and coping strategies for dealing with emotions. It integrates principles from cognitive behavioral therapies and recent research on emotion regulation to modify beliefs and coping strategies related to emotions. The main research instrument used in this study is a questionnaire that includes the Beck Depression Inventory (BDI), Gross and John's Emotion Regulation Questionnaire (ERQ), Young's Therapy Process Questionnaire (TPQ), and the General Health Questionnaire (GHQ). by Goldberg.(Hamidi et al., 2015)

The Beck Depression Inventory-II (BDI-II) is a self-report questionnaire developed and standardized by Beck, Steer, and Brown in 2006. It is intended to measure the severity of depression and consists of 21 sets of questions about various symptoms. Respondents are asked to rate the severity of these symptoms on a 4-point scale from 0 to 3. The questions cover areas such as feelings of worthlessness and failure, guilt, irritability, sleep problems and loss of appetite, which are often associated with depressive symptoms (García-Batista et al., 2018). A recent study by (Hamidi et al., 2015) evaluated the reliability of the BDI questionnaire in the elderly Iranian population. The study found that the Cronbach alpha reliability coefficient of the BDI questionnaire was 0.95, indicating high internal consistency. Furthermore, the split-half reliability coefficient was 0.74, indicating moderate reliability.

The Emotion Regulation Questionnaire (ERQ) was developed by Gross and John in 2003 as a tool to assess and measure emotion regulation strategies. This questionnaire consists of 10 items

[DOI: 10.22034/4.1.271]

and is divided into two subscales: reappraisal and suppression. The “Reappraisal” subscale includes 6 items, while the “Suppression” subscale includes 4 items. Respondents are asked to rate their agreement with each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores on each subscale can be calculated by taking the average of scores for each item(Preece et al., 2023). In a study by (Hamidi et al., 2015) the overall reliability coefficient of the ERQ, measured by Cronbach's alpha, was found to be 0.84. This indicates a high level of internal consistency and reliability of the questionnaire.

The Therapy Process Questionnaire (TPQ) developed by Young, is a tool that identifies and assesses maladaptive schemas in individuals. These schemas are classified into five domains, namely separation and rejection, impaired autonomy and performance, impaired boundaries, hypervigilance and inhibition, and external control (Schiepek et al., 2012). The TPQ consists of eighteen specific maladaptive schemas that fall into these five domains. These schemas represent patterns of thoughts, emotions, and behaviors that are dysfunctional and cause distress in individuals. It is important to note that individuals may be aware that a particular scheme is causing them distress. However, they may still be comfortable with it and therefore may not actively try to change it (Delcea et al., 2023).

The General Health Questionnaire (GHQ) is a self-report questionnaire developed by Goldberg and Hillier in 2014. It is used to assess psychological well-being and detect possible psychological disorders. The GHQ-28, a scaled version of the questionnaire, consists of 28 items divided into two subscales and four subdomains. Regarding reliability, the overall reliability of the GHQ-28 was estimated to be 0.73 using Cronbach's alpha coefficient. This indicates a satisfactory level of internal consistency of the questionnaire (Hjelle et al., 2019).

In this study, researchers used Cronbach's alpha coefficient to evaluate the reliability of the questionnaires. The calculations were carried out using the SPSS software. The reliability of the women's depression questionnaire was found to be 0.942, indicating a high level of internal consistency. Similarly, the Emotion Self-Regulation Questionnaire showed a reliability coefficient of 0.912, indicating good reliability. In addition to descriptive statistics, inferential statistics were used to determine the significant relationships between the variables of interest. The researchers used multivariate analysis of covariance (MANCOVA) as an inferential statistical test.

[DOI: 10.22034/4.1.271]

Table 1. Summary of the Schema Therapy sessions

Sessions No.	Content of Sessions
First	Preliminary introduction to the approach, setting the stage, session goals, number of sessions, motivation and importance of the educational and research plan, implementation and collection of research questionnaires.
Second	Identifying schemas, starting cognitive techniques, brief explanation about the group's goals, rules, and regulations, completing the commitment form, familiarizing with maladaptive schemas, their formation and persistence, related areas and needs, categorizing members' schemas and self-analysis, starting implementation of techniques and therapeutic strategies aimed at improving schemas, assigning homework, summarizing discussions.
Third	Continuing cognitive techniques, reviewing previous discussions, explaining coping styles and exchanging views with members, assigning homework related to using coping styles in daily life and citing concrete examples, initiating dialogue between hopeful and hopeless aspects of the mind, assigning homework, summarizing discussions.
Fourth	Continuing cognitive techniques, reviewing previous discussions, developing and constructing healthy educational cards, initiating dialogue between the healthy aspect and schema aspects, downward technique, reviewing cognitive techniques from previous sessions, assigning homework, summarizing discussions.
Fifth	Starting experiential techniques, reviewing previous discussions, visualizing a safe place, creating change in the process of distressing emotional memories (writing several examples of important life emotional memories), assigning homework, summarizing discussions.
Sixth	Continuing experiential techniques, reviewing previous discussions, applying mindfulness and relaxation techniques, imaginary dialogues (in the form of mental imagery) with the cause of the schema, assigning homework, summarizing.
Seventh	Continuing experiential techniques, reviewing previous discussions, writing a letter to the cause of the schema, reviewing and repeating cognitive and experiential techniques, assigning homework, summarizing discussions.
Eighth	Starting behavioral techniques, reviewing previous discussions, precisely describing coping behaviors, prioritizing coping behaviors, assigning homework, summarizing discussions.

Results

Data analysis in this study included two levels: descriptive statistics and inferential statistics. Descriptive statistics, particularly frequency distribution tables, were used to summarize and present the data collected in the study. The researchers used SPSS version 21, a statistical software program, commonly used for data analysis. In this study, a significance level of $p < 0.05$ was considered, indicating that associations with a probability of occurring by chance of less than 5% were statistically significant.

The descriptive results of the participant variables in this study included a total of 30 subjects. These subjects were divided into two groups, with each group consisting of 15 participants. The two groups were called control group and experimental group. Table (2) shows the descriptive statistics of the various variables used in the current study. The table contains separate information

[DOI: 10.22034/4.1.271]

for the control and experimental groups. Descriptive statistics provide a summary of the properties and measurements of the variables under study.

Table 2. Mean and standard deviation of research variables in the experimental and control groups before and after treatment

1Research variables	Before treatment				After treatment			
	Trial		Control		Trial		Control	
	Average	The standard deviation	Average	The standard deviation	Average	The standard deviation	Average	The standard deviation
mental health	21.45	1.37	23.25	1.63	12.44	1.29	22.42	59.5
Emotional self-regulation	61.66	5.12	62.58	4.74	83.41	40.7	64.74	12.41

Hypothesis 1: The therapeutic intervention has an impact on the mental health of depressed women in Bandar Abbas city.

To test the initial hypothesis, an analysis of covariance (ANCOVA) was employed. In this analysis, mental health was the dependent variable, group (control, experimental) was the independent variable, and pretest mental health scores were used as the covariate. The group differences are presented in Table 3.

Table 3. Results of Univariate Analysis of Covariance on Post-Test Scores of Mental Health with Pre-Test Covariate

Source of Variance	df	Mean Square	F	Eta-squared	P
Group	2	624.41	37.56	0.63	0.0001
Error	27	16.71			
Total	30				

[DOI: 10.22034/4.1.271]

The results of the study indicate that there are significant differences between the experimental and control groups in terms of their post-test mental health scores. These differences are highlighted in Table 3, where the statistical analysis shows a significant F value of 37.56 ($p<0.001$). The study reports a treatment effectiveness rate of 62%. This means that the treatment provided to the experimental group resulted in a positive outcome for approximately 62% of the participants. This finding highlights the potential benefits of the intervention in improving mental health outcomes.

Table 4. Adjusted Mean Dependent Variable: Mental Health

Group	Adjusted Mean	Standard Deviation
Trial	11.59	0.33
Control	19.79	1.44

The mean adjusted mental health variable in the experimental and control groups is presented in Table 4.

Hypothesis 2: The therapeutic intervention has an impact on the emotional self-regulation of depressed women in Bandar Abbas city.

An analysis of covariance (ANCOVA) was used to examine the initial hypothesis. In this analysis, emotional self-regulation of women was the dependent variable, group (control, experimental) was the independent variable, and pretest emotional regulation scores were utilized as the covariate.

Table 5. Results of Univariate Analysis of Covariance on Post-Test Scores of Self-Regulated Emotional Women with Pre-Test Covariate

Source of Variance	DF	Mean Square	F	Eta-squared	P
Group	1	6658.232	365.47	0.69	0.0001
Error	28	120.552			
Total	30				

Significant differences were observed between the groups in the post-test emotional regulation scores, as indicated in Table 5 ($F = 47.365$, $p<0.001$). This means that the post-test emotional regulation scores in the experimental group were found to be significantly different from those in the control group. The treatment effectiveness rate was reported to be 63%.

[DOI: 10.22034/4.1.271]

Table 6. Adjusted Mean Dependent Variable of Self-Regulated Emotional Women

Group	Adjusted Mean	Standard Deviation
Trial	82.68	1.63
Control	64.47	3.61

Table 6 presents the adjusted means of the dependent variable, emotional self-regulation of women, in the experimental and control groups.

Table 7. Analysis of Covariance for Homogeneity of Regression Slopes in the Post-Test of Self-Regulated Emotional Depressed Women in Two Experimental and Control Groups

Variables	SS	DF	MS	F	p
Group	3.521	1	3.325	3.638	0.321
Pre-exam	2610.421	1	2610.444	285.456	0.0001
Pre-test	4.228	1	4.260	0.311	0.347
Error	111.594	27	4.288		
Total	63581	30			

As observed in Table 7, the interaction between group and pretest emotional self-regulation of depressed women is not significant. The significance level is 0.321, and the F statistic is 0.311, which is smaller than the critical value of 1.96. In other words, the data support the assumption of homogeneity of regression slopes. Therefore, an analysis of covariance (ANCOVA) was employed to examine the hypothesis of interest, and the results are presented in Table 8.

Table 8. Results of Analysis of Covariance on Self-Regulated Emotional Scores of Depressed Women in the Control Group Post-Test and Control

Source of changes	SS	DF	MS	F	P
Modified model	3231.145	2	1605.590	374.404	0.001
Emotional self-regulation variable	2351.631	1	2621.547	611.313	0.001
group	374.472	1	385.522	89.899	0.001
error	115.786	27	4.288		
Total	63574	30			
Corrected total	3326.876	29			

The adjusted average of the emotional self-regulation questionnaire of depressed women after the test group	The adjusted average of the emotional self-regulation questionnaire of depressed women in the control group
41.368	48.566

[DOI: 10.22034/4.1.271]

As observed in Table 8, the probability associated with the variable of emotional self-regulation in depressed women is 0.000, which is smaller than the significance level (0.05). This suggests that there is a significant relationship between the dependent variable (emotional self-regulation) and the independent variable (group variable). The group variable (independent) significantly correlates with the dependent variable due to the smaller probability value (0.001) compared to the significance level (0.05). This indicates a statistically significant difference between the group receiving mental health-based cognitive therapy and the control group. Furthermore, this difference is in favor of the post-test group, or the group receiving mental health-based cognitive therapy. In other words, it can be concluded that the level of emotional self-regulation in depressed women in the experimental group is lower than that in the control group. This suggests that the mental health-based cognitive therapy intervention has led to a reduction in emotional self-regulation in depressed women. Thus, the second hypothesis of the study is confirmed.

Discussion

The main objective of the present study was to investigate the effectiveness of schema therapy in improving mental health, psychological well-being, and emotion regulation of depressed women in Bandar Abbas during 2023-2024. The study focused on several variables, including the effectiveness of schema therapy, psychological well-being, and emotion regulation in depressed women. To achieve this goal, schema therapy was specifically implemented as an intervention in the experimental group. In addition, the standardized questionnaires were used to assess the level of psychological well-being and emotion regulation in participants.

This study used a quasi-experimental research design with a control group (pretest/posttest). The results were subjected to descriptive and inferential analysis. The analysis results showed that analysis of covariance test was used to investigate the first hypothesis “Schema therapy has an impact on psychological well-being of depressed women in Bandar Abbas”. In this study, post-test psychological well-being was considered as a dependent variable, while group (control, experimental) was treated as an independent variable and pre-test psychological well-being scores were used as a covariate. It is evident that there is a significant difference in post-test psychological well-being scores between groups ($F = 37.56$, $p < 0.001$). This means that the post-test

[DOI: 10.22034/4.1.271]

psychological well-being results in the experimental group are significantly different from those in the control group, with a treatment effectiveness rate of 62%.

The findings of the study showed that schema therapy was effective in improving mental health and psychological well-being of depressed women in Bandar Abbas city. The results imply that the training of schema therapy group had an effect on reducing the symptoms of depression in the treatment group. Previous studies have also confirmed the effectiveness of schema therapy on reducing the depression and other mental diseases. These findings are consistent with previous studies such as (Asli Azad et al., 2020),(Mohammadi et al., 2019),(Anvari & Sardary, 2019),(Körük & Özabacı, 2018),(Rezaee et al., 2016) and (Berking et al., 2008). (Mohammadi et al., 2019) in their study showed that schema therapy had a positive and significant effect on increasing cognitive flexibility and resiliency in patients with generalized anxiety. Schema therapy targets the individual's emotions and core beliefs and modifies maladaptive coping styles. It can be explained that individuals with psychological distress may have specific maladaptive schemas, depressed mood and negative beliefs about body image, unrealistic weight goals, inappropriate weight and shape problems, and a lack of self-assessment and control over eating behavior. (Rezaee et al., 2016) demonstrated that therapeutic intervention using a treatment plan approach resulted in significant decreases in anxiety and depression scores during the follow-up period. Overall, implementing a treatment plan can play a critical role in improving the mental health of women with depression.

To explain the above results, it can be hypothesized that individuals who had positive mental health in childhood may be more prone to negative self-evaluations. This vulnerability could be attributed to increased criticism and ridicule from family members and peers regarding their appearance, weight, and body shape, reinforcing negative self-image. However, schema therapy interventions have shown promise in addressing these issues by targeting childhood schemas. This targeted approach has been associated with a reduction in negative self-evaluations and an increase in positive self-perceptions. The main goal of schema therapy is to improve maladaptive schemas that include negative memories, emotions, and beliefs. By improving these schemas, individuals can experience overall cognitive improvement. Consequently, they are more likely to strive for better mental health and exercise greater control over health-related behaviors, particularly those related to physical health such as diet and exercise.

[DOI: 10.22034/4.1.271]

In order to investigate the impact of schema therapy on emotion regulation in depressed women, the study used an analysis of covariance test to analyze the data. In this test, women's post-test emotion regulation scores were examined as the dependent variable, while group (control, experimental) was considered as the independent variable. The emotion regulation scores determined in the pretest were used as covariates. The results of the analysis showed a significant difference between the control and experimental groups in post-test emotion regulation scores ($F = 47.365$, $p < 0.001$). This indicates that the emotion regulation scores in the experimental group were significantly different from those in the control group. The treatment, schema therapy, showed 63 percent effectiveness in improving emotion regulation.

The findings of this study also showed that schema therapy has an impact on the emotional self-regulation of depressed women in Bandar Abbas city. These findings are consistent with previous studies such as (Amini et al., 2023), (Ghasemkhanloo et al., 2021),(Asli Azad et al., 2020), (Momeni & Radmehr, 2018), (Daneshmandi et al., 2014) and (Leahy, 2009). (Daneshmandi et al., 2014) reported in their study that a treatment plan specifically addresses the core maladaptive schemas and targets the individual's initial maladaptive schemas. This approach provides assistance to patients in overcoming these schemas through cognitive, experiential, behavioral, and interpersonal strategies. The reduction of self-criticism in individuals can be achieved through the implementation of an emotional therapeutic treatment plan. This treatment approach helps individuals develop an awareness of the negative nature of their self-criticisms, particularly those directed towards themselves (Asli Azad et al., 2020). By going through this process, individuals gain the ability to differentiate between their "self" and the criticisms they express about their own "performance". This differentiation allows them to perceive self-criticism as a distinct inner voice separate from their overall personality. As a result, individuals are empowered to take proactive measures toward diminishing and eliminating self-criticism. The schema therapy intervention is a therapeutic approach that includes various techniques to help clients articulate their goals and make sustainable behavioral changes based on their values (Momeni & Radmehr, 2018). This intervention uses experiential exercises and metaphors to help clients express their purposeful and meaningful goals, referred to as values. By participating in these exercises, clients can commit to taking actions consistent with their values, known as committed action. An important aspect of schema therapy intervention is acceptance of personal thoughts, emotions and feelings. This

[DOI: 10.22034/4.1.271]

acceptance is crucial to enable committed, values-based action. By accepting and acknowledging their thoughts and feelings, clients are able to move forward and take actions consistent with their values.

Based on the latest research on the effectiveness of schema therapy in improving emotion regulation, it can be concluded that schema therapy, particularly when focusing on third wave techniques, has shown positive results in enhancing emotion regulation skills. This therapy utilizes cognitive and experiential techniques, as well as experiential exercises, to help individuals replace maladaptive coping strategies with healthier emotion regulation strategies. Schema therapy helps individuals reduce avoidance and suppression of emotions by providing them with tools and techniques to effectively regulate their emotions. By engaging in schema therapy, individuals learn to stop critical thinking patterns, which leads to a reduction in the intensity of negative emotions and emotional dysregulation. By addressing these needs, individuals can improve their ability to regulate their emotions effectively.

Therefore, it can be said that schema therapy approach consists of interpersonal, attachment and experimental cognitive-behavioral techniques in the form of an integrated treatment model. It is the basis of the inefficient and irrational thoughts and examines the maladaptive schemas using the four main techniques of cognitive-behavioral, communicative, and experimental in depressed women. Emotionally, it helps depressed women to express their positive and hidden negative emotions such as anger due to the lack of satisfying the spontaneous needs and secure attachment to others in childhood. In other words, schema therapy is effective in behavioral pattern breaking. This strategy helps to plan and implement for replacing the maladaptive coping responses by adaptive behavioral patterns.

In conclusion, it can be admitted that the current research, like all other studies, had some limitations. The current study did not include follow-up sessions, limiting the ability to assess long-term effects or changes in participants' attitudes and behaviors over time. The study only included female participants, which limits the generalizability of the results to male participants. Caution should be exercised when applying the results to a broader population that includes both men and women. Conducting the study exclusively on women limits the generalizability of the results to a broader population. It is important to include both male and female participants in future research to ensure a more representative sample. To increase the external validity of the

[DOI: 10.22034/4.1.271]

results, future research should consider including both male and female participants. This would enable a more comprehensive understanding of the topic and improve the generalizability of the results.

[DOI: 10.22034/4.1.271]

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

Funding

The authors did (not) receive support from any organization for the submitted work.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

References

Abbas, Q., Nisa, M., Khan, M. U., Anwar, N., Aljhani, S., Ramzan, Z., & Shahzadi, M. (2023). Brief cognitive behavior therapy for stigmatization, depression, quality of life, social support and adherence to treatment among patients with HIV/AIDS: a randomized control trial. *BMC psychiatry*, *23*(1), 539. https://doi.org/https://doi.org/10.1186/s12888-023-05013-2

Aghaee, A., Karezahi, F., & Farnam, A. (2019). The comparison of the effectiveness of group schema therapy and group emotional-based couple therapy on couples' maladaptive schemas and life satisfaction [Research]. *Journal of Psychological Science*, *18*(73), 133-142. http://psychologicalscience.ir/article-1-24-en.html

Amini, A., Ghorbanshirudi, S., & Khalatbari, J. (2023). Comparison of the Effectiveness of Teaching Emotion Management Strategies Based on Emotion-Focused Couple Therapy Approach and Couple Therapy Based on Schema Therapy on Sexual Satisfaction and Family Functioning [Research]. *Health System Research*, *18*(4), 297-306. https://doi.org/10.48305/jhsr.v18i4.1476

Anvari, J., & Sardary, B. (2019). The Effectiveness of Positive Psychotherapy on Improving Cognitive Emotion Regulation Strategies in Male Secondary High School Students with

[DOI: 10.22034/4.1.271]

Anxiety Symptoms. *Positive Psychology Research*, *5*(2), 31-46. https://doi.org/10.22108/ppls.2019.114487.1596

Asli Azad, M., Manshaee, G. R., & Ghamarani, A. (2020). Effectiveness of Acceptance and Commitment Therapy on Cognitive Emotion Regulation and Intolerance of uncertainty of The Students with Obsessive-Compulsive Disorder. *Psychology of Exceptional Individuals*, *9*(36), 33-53. https://doi.org/10.22054/jpe.2019.44480.2027

Azharuddin, S., Vital-Daley, K., Mustovic, V., Marshall, T., Calvin, B., DuMont, T., . . . Barker, B. (2023). Mental Health in Women. *Critical Care Nursing Quarterly*, *46*(4), 336-353.

Berking, M., Wupperman, P., Reichardt, A., Pejic, T., Dippel, A., & Znoj, H. (2008). Emotion-regulation skills as a treatment target in psychotherapy. *Behav Res Ther*, *46*(11), 1230-1237. https://doi.org/10.1016/j.brat.2008.08.005

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 [Original article]. *The Journal of Shahid Sadoughi University of Medical Sciences*, *22*(5), 1481-1494. http://jssu.ssu.ac.ir/article-1-2652-fa.html

Delcea, C., Rad, D., Toderici, O. F., & Bululoi, A. S. (2023). Posttraumatic Growth, Maladaptive Cognitive Schemas and Psychological Distress in Individuals Involved in Road Traffic Accidents-A Conservation of Resources Theory Perspective. *Healthcare (Basel)*, *11*(22). https://doi.org/10.3390/healthcare11222959

Evans-Lacko, S., Aguilar-Gaxiola, S., Al-Hamzawi, A., Alonso, J., Benjet, C., Bruffaerts, R., . . . Gureje, O. (2018). Socio-economic variations in the mental health treatment gap for people with anxiety, mood, and substance use disorders: results from the WHO World Mental Health (WMH) surveys. *Psychological medicine*, *48*(9), 1560-1571.

Friedrich, M. J. (2017). Depression Is the Leading Cause of Disability Around the World. *JAMA*, *317*, 1517. https://doi.org/10.1001/jama.2017.3826

García-Batista, Z. E., Guerra-Peña, K., Cano-Vindel, A., Herrera-Martínez, S. X., & Medrano, L. A. (2018). Validity and reliability of the Beck Depression Inventory (BDI-II) in general and hospital population of Dominican Republic. *PLoS One*, *13*(6), e0199750. https://doi.org/10.1371/journal.pone.0199750

[DOI: 10.22034/4.1.271]

Ghadampour, E., Hosseini Ramaghani, N., Moradi, S., Moradiyani Gizeh Rod, K., & Alipour, K. (2018). Effectiveness of Emotional Schema Therapy on Decrease of Post-Event Rumination and Cognitive Avoidance in People With Clinical Symptoms of Social Anxiety [Original]. *Internal Medicine Today*, *24*(2), 111-118. http://imtj.gmu.ac.ir/article-1-2754-en.html

Ghasemi, F., & Movahedi, Y. (2022). The effectiveness of schema therapy on rumination, cognitive fusion, cognitive avoidance and neurocognitive processing in couples applying for divorce [Research]. *Iranian Journal of Rehabilitation Research in Nursing*, *9*(1), 64-74. https://doi.org/https://doi.org/10.22034/IJRN.9.1.64

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 [Research]. *Shenakht Journal of Psychology and Psychiatry*, *8*(3), 76-88. https://doi.org/10.32598/shenakht.8.3.76

Greenberg, L. (2017). Emotion-focused therapy of depression. *Person-Centered & Experiential Psychotherapies*, *16*, 1-12. https://doi.org/10.1080/14779757.2017.1330702

HajShamsayi, M., Kareshki, H., & AmineYazdi, S. A. (2014). Testing the model of mediator role of self-regulation in relation between Classroom socio-mental climate and maladjustment. *Journal of School Psychology*, *3*(3), 21-37. https://doi.org/jsp-3-3-2

Hamidi, R., Fekrizadeh, Z., Azadbakht, M., Garmaroudi, G., Taheri Tanjani, P., Fathizadeh, S., & Ghisvandi, E. (2015). Validity and reliability Beck Depression Inventory-II among the Iranian elderly Population. *Journal of Sabzevar University of Medical Sciences*, *22*(1), 189-198. https://jsums.medsab.ac.ir/article_550_c326338d69b115a13f8996b01613b38f.pdf

Hjelle, E. G., Bragstad, L. K., Zucknick, M., Kirkevold, M., Thommessen, B., & Sveen, U. (2019). The General Health Questionnaire-28 (GHQ-28) as an outcome measurement in a randomized controlled trial in a Norwegian stroke population. *BMC Psychol*, *7*(1), 18. https://doi.org/10.1186/s40359-019-0293-0

Kaviani, H., Hatami, N., & Shafieabadi, A. E. (2009). The Impact of Mindfulness-Based Cognitive Therapy on The Quality of Life in Non-Clinically Depressed People [Research]. *Advances in Cognitive Sciences*, *10*(4), 39-48. http://icssjournal.ir/article-1-466-fa.html

Khaleghi, M., Leahy, R., Akbari, E., Mohammadkhani, S., Hasani, J., & Tayyebi, A. (2017). Emotional Schema Therapy for Generalized Anxiety Disorder: A Single-Subject Design.

[DOI: 10.22034/4.1.271]

International Journal of Cognitive Therapy, *10*, 269-282. https://doi.org/10.1521/ijct.2017.10.4.269

Körük, S., & Özabacı, N. (2018). Effectiveness of Schema Therapy on the Treatment of Depressive Disorders: A Meta-Analysis. *Psikiyatride Guncel Yaklasimlar*, *10*, 460-470. https://doi.org/10.18863/pgy.361790

Kupferberg, A., & Hasler, G. (2023). The social cost of depression: Investigating the impact of impaired social emotion regulation, social cognition, and interpersonal behavior on social functioning. *Journal of Affective Disorders Reports*, 100631.

Leahy, R. (2009). Resistance: An emotional schema therapy (EST) approach. *Cognitive behavior therapy: A guide for the practicing clinician*, *2*, 187-204.

Leahy, R. (2018). Introduction: Emotional Schemas and Emotional Schema Therapy. *International Journal of Cognitive Therapy*, *12*. https://doi.org/10.1007/s41811-018-0038-5

Mahoor, H., & Farzinfar, K. (2017). The Effectivness of Schema Therapy on psychological well-being of Mothers of the children suffering deafness. *Journal of Sabzevar University of Medical Sciences*, *24*(5), 311-318. https://jsums.medsab.ac.ir/article_993_d4d606543dd20dadd8d2995873c5ae20.pdf

Mohammadi, F., Taleb, N., Rezaei Shojaei, S., & Emami roudi, T. (2019). The Effectiveness of Schema Therapy on Cognitive Flexibility and Resiliency in Patients with Generalized Anxiety. *medical journal of mashhad university of medical sciences*, *62*(2), 34-42. https://doi.org/10.22038/mjms.2020.16176

Momeni, K., & Radmehr, F. (2018). Evaluating the Effectiveness of Emotional Schema Therapy on Interpretation Bias (Self-Interpretation, Interpretation of Others) in Patients with Generalized Anxiety Disorder. *Clinical Psychology Studies*, *8*(32), 49-65. https://doi.org/10.22054/jcps.2019.35672.1965

Nochaiwong, S., Ruengorn, C., Thavorn, K., Hutton, B., Awiphan, R., Phosuya, C., . . . Wongpakaran, T. (2021). Global prevalence of mental health issues among the general population during the coronavirus disease-2019 pandemic: a systematic review and meta-analysis. *Scientific reports*, *11*(1), 10173.

Otared, N., Narimani, M., Sadeghi, G., Mahmood Aliloo, M., & Atadokht, A. (2019). Comparison of Components of Psychological Inflexibility in Students with Major Depressive Disorder,

[DOI: 10.22034/4.1.271]

Generalized Anxiety Disorder, Social Anxiety Disorder and Normal Students of Tabriz University of Medical Sciences in the 2017-2018 [Research]. *Journal of Rafsanjan University of Medical Sciences*, *18*(2), 121-132. http://journal.rums.ac.ir/article-1-4335-fa.html

Preece, D. A., Petrova, K., Mehta, A., & Gross, J. J. (2023). The Emotion Regulation Questionnaire-Short Form (ERQ-S): A 6-item measure of cognitive reappraisal and expressive suppression. *Journal of Affective Disorders*, *340*, 855-861. https://doi.org/https://doi.org/10.1016/j.jad.2023.08.076

Rezaee, M., Ghazanfari, F., & Reazee, F. (2016). Effectiveness of Emotional Schema Therapy on Severity of Depression and Rumination in People with Major Depressive Disorder [Original article]. *The Journal of Shahid Sadoughi University of Medical Sciences*, *24*(1), 41-54. http://jssu.ssu.ac.ir/article-1-3532-fa.html

Rouzbahani, M., & Sharifi, P. (2018). The comparison of the severity of depression symptoms and the speed of information processing among patients with post-traumatic stress disorder and normal people. *Clinical Psychology Studies*, *8*(32), 127-143. https://doi.org/10.22054/jcps.2019.32268.1862

Schiepek, G., Aichhorn, W., & Strunk, G. (2012). [Therapy Process Questionnaire (TPQ) - a combined explorative and confirmatory factor analysis and psychometric properties]. *Z Psychosom Med Psychother*, *58*(3), 257-266. https://doi.org/10.13109/zptm.2012.58.3.257 (Der Therapie-Prozessbogen (TPB) – faktorenstruktur und psychometrische daten.)

Shabani, M., & Khalatbari, J. (2019). The effectiveness of mindfulness-based stress reduction training on emotion regulation difficulties and psychological well-being in premenstrual syndrome. *Health Psychology*, *8*(29), 134-152. https://doi.org/10.30473/hpj.2019.38051.3847

Shahriari, H., Zare, H., Aliakbari Dehkordi, M., & Sarami Foroushani, G. R. (2018). Effectiveness of Cognitive-Behavioral Interventions in the Treatment of Generalized Anxiety Disorder: A Systematic Review and Meta-analysis [Review Article]. *Journal of Rafsanjan University of Medical Sciences*, *17*(5), 461-478. http://journal.rums.ac.ir/article-1-3947-fa.html

Shenaar-Golan, V., Gur, A., & Yatzkar, U. (2022). Emotion regulation and subjective well-being among parents of children with behavioral and emotional problems – the role of self-compassion. *Current Psychology*, *42*. https://doi.org/10.1007/s12144-022-03228-2

[DOI: 10.22034/4.1.271]

Soltanizadeh, M., Kazemi, H., Darabi, N., & Ghodratipour, S. (2021). The Effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on Emotion Regulation and Distress Tolerance among Firefighters in Isfahan. *Journal of Applied Psychological Research*, *12*(2), 83-100. https://doi.org/10.22059/japr.2021.311613.643663

Sookman, D. (2018). Specialized cognitive-behavioral therapy for obsessive–compulsive disorder. In *Science and practice in cognitive therapy: Foundations, mechanisms, and applications.* (pp. 335-357). Guilford Press.

Taylor, C. D. J., Bee, P., & Haddock, G. (2017). Does schema therapy change schemas and symptoms? A systematic review across mental health disorders. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(3), 456-479. https://doi.org/https://doi.org/10.1111/papt.12112

Weiss, N. H., Sullivan, T. P., & Tull, M. T. (2015). Explicating the role of emotion dysregulation in risky behaviors: A review and synthesis of the literature with directions for future research and clinical practice. *Curr Opin Psychol*, *3*, 22-29. https://doi.org/10.1016/j.copsyc.2015.01.013

Westphal, M., & Bonanno, G. (2004). 1. Emotion self-regulation. In (pp. 1). https://doi.org/10.1075/aicr.54.03wes

Yan, J., Kong, T., He, Y., McWhinnie, C., Yao, S., & Xiao, J. (2014). Daily hassles and depression in individuals with cognitive vulnerability to depression: The mediating role of maladaptive cognitive emotion regulation strategies. *Nordic Psychology*, *67*, 87-100. https://doi.org/10.1080/19012276.2014.957717

[DOI: 10.22034/4.1.271]