

Original Article

The effectiveness of emotional schema therapy on cognitive emotion regulation, uncertainty intolerance, and psychological flexibility in male students with social anxiety disorder

Davod Ghaderi^{1*} & Bahman Kord²

1. Department of Psychology, Sara.C., Islamic Azad University, Sarab, Iran.

2. Associate Professor, Department of Psychology, Mah.C., Islamic Azad University, Mahabad, Iran.

Abstract

The purpose of this study was to investigate the effectiveness of emotional schema therapy on cognitive emotion regulation, uncertainty intolerance, and psychological flexibility in male students with social anxiety disorder. The present study employed a quasi-experimental design with pre-test, post-test, and three-month follow-up assessments with control and experimental groups. The study population included all male students with social anxiety disorder in Harris City during the first half of the academic year 2024-2025. Thirty participants were selected through purposive sampling based on inclusion criteria and assigned to experimental and control groups. All participants completed the Cognitive Emotion Regulation Questionnaire, the Intolerance of Uncertainty Scale, and the Cognitive Flexibility Inventory. The experimental group received emotional schema therapy in nine 90-minute sessions. Data were analyzed using multivariate analysis of covariance. The results showed that the experimental group scored lower on maladaptive cognitive strategies and higher on adaptive cognitive strategies, cognitive emotion regulation, psychological flexibility, and uncertainty intolerance compared to the control group. These results were maintained at the three-month follow-up. Based on the findings, emotional schema therapy can be considered an effective therapeutic approach for addressing social anxiety disorder.

Keywords

Cognitive emotion regulation
Emotional schema therapy
Psychological flexibility
Social anxiety
Uncertainty intolerance

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Introduction

Social anxiety disorder (SAD) is characterized by persistent fear of one or more social or functional situations in which the individual is exposed to unfamiliar people or the possible scrutiny of others. The person fears behaving in a way that would be embarrassing and humiliating (Somma et al., 2025). There is evidence from social and clinical studies that social anxiety disorder is a common and disabling disorder (Stein et al., 2017). In the National Comorbidity Survey (NCS), SAD was one of the most common mental disorders (Charlson et al., 2019). In each of these reviews, the age of onset of SAD was early, comorbidity with other mental disorders was high, and subsequent disorders were significant (Jystad et al., 2021). Clinical research has also shown that SAD is a common and debilitating condition that strongly affects the emotions of affected individuals and has a very strong emotional component (Fernández-Álvarez et al., 2024), which can affect psychological aspects of individuals, including cognitive flexibility (Rozen & Aderka, 2023).

Cognitive flexibility is associated with SAD, and cognitive inflexibility explains SAD (Figueiredo et al., 2024). Psychological flexibility is changing cognitive contexts and thoughts to adapt to changing environmental stimuli (Dennis & Vander Wal, 2010). Cognitive flexibility effectively adapts a person's thoughts and behavior to environmental changes (Shende & Mudar, 2023). High levels of relationship anxiety are associated with low cognitive flexibility (Gorinelli et al., 2022). The study demonstrated the indirect effect of cognitive flexibility on social anxiety in adolescents (Tan et al., 2023). The findings of Jian et al. (2024) showed that high experiential avoidance, which is an important determinant of social anxiety, can be explained through psychological flexibility and that people with low flexibility have higher experiential avoidance, which is one of the reasons for the occurrence of social anxiety (Jain et al., 2024). Another important variable contributing to SAD is the uncertainty intolerance variable (Saraff et al., 2023). Ambiguity intolerance is a cognitive bias that affects how a person perceives, interprets, and reacts to an uncertain situation at the emotional, cognitive, and behavioral levels

Corresponding author: Department of Psychology, Sara.C., Islamic Azad University, Sarab, Iran. E-mail: dr.davod.ghaderi@iau.ac.ir



(Tör Çabuk & Koç, 2024). Some ambiguity is necessary for individual and human community development and should be welcomed with open arms (Tör Çabuk & Koç, 2024). People who are uncertainty intolerance, in ambiguous and non-obvious situations, experience anxiety and mental and intellectual conflict, stick to their previous thought patterns (Yu et al., 2022). It was found that uncertainty intolerance when controlling for stable cognitive correlates of social anxiety and neuroticism, explained a significant amount of the variance in social anxiety severity (Jain et al., 2024). It was found that uncertainty intolerance is strongly related to social anxiety (Counsell et al., 2017; Saraff et al., 2023). It has been found that adolescents with SAD use maladaptive cognitive emotion regulation strategies instead of adaptive cognitive emotion regulation strategies (Sackl-Pammer et al., 2019). Cognitive emotion regulation is a person's cognitive response style to manage how to use emotionally aroused information (Garnefski & Kraaij, 2006; Salmani et al., 2025). Cognitive regulation of emotion is a process that can be learned during development through education. A person may have difficulty in acquisition and learning for various reasons, such as a dysfunctional family environment (Shao et al., 2020). It was found that there are strands of cognitive-emotional regulation in social anxiety disorder that are shared with generalized anxiety disorder (GAD) (Abasi et al., 2018). It was also found that cognitive regulation strategies predict social anxiety in students (Chiu et al., 2021).

The emotion therapy schema is among the therapeutic models developed to treat SAD (Pirayeh et al., 2023). In the emotional schema model, people are different from each other in interpreting and evaluating their emotional experiences, and they try to use different strategies to cope with their emotions (Leahy, 2019). Leahy called this metacognitive or metaemotional model in which emotion is socially recognized (Leahy, 2019). The emotional schema model states that emotional reasoning and exploration are a part of depressive and anxiety-causing thinking. At the same time, it is also an essential component in non-clinical people's thinking (Mohammadkhani et al., 2022). In this regard, research has shown the connection of this pattern with a wide range of disorders, such as obsessive-compulsive disorder (Remmerswaal et al., 2023), treatment-resistant anxiety (Remmerswaal et al., 2023), pervasive anxiety (Boogar et al., 2013) and problematic cognitive beliefs (Yavuz et al., 2011) have confirmed. It was found that emotional schema therapy is effective in reducing intolerance of uncertainty and cognitive-emotional regulation in people with anxiety disorders (Pirayeh et al., 2023). It was also found that emotional schema therapy is an effective strategy for cognitive regulation strategies for people with social anxiety disorder (Mousavi et al., 2024).

Despite studies confirming schema therapy's effectiveness on some psychological disorders and related variables, there is no research history similar to the present study. Therefore, the present study was designed and implemented to answer the following question: Is emotional schema therapy effective on cognitive emotion

regulation, intolerance of uncertainty, and psychological flexibility in male students with social anxiety disorder?

Method

Participants

The current research is a quasi-experimental type of pre-test - post-test, and follow-up (3 months) with a control group. The experimental and control groups were randomly assigned. Questionnaires on cognitive regulation of emotion (Garnefski & Kraaij, 2006), intolerance of uncertainty (Buhr & Dugas, 2002), and psychological flexibility (Dennis & Vander Wal, 2010) were administered. To select the sample, first, the social anxiety scale (SPIN) (Connor et al., 2000) was administered for screening and 30 students who had scored above 40 (cut-off point) and had been diagnosed with social anxiety disorder based on the diagnosis of a psychiatrist and a diagnostic interview by a clinical psychologist were selected (Connor et al. 2000).

Instrument

Cognitive Emotion Regulation Questionnaire (CERQ):

The questionnaire (Garnefski & Kraaij, 2006) is an 18-item tool. It measures the cognitive regulation strategies of emotions in response to life-threatening and stressful events on a five-point scale. Strategies are divided into two general categories: adaptive strategies and maladaptive strategies. The questionnaire developers reported Cronbach's alpha coefficient for the subscales between 0.62 and 0.80. In Iran, the validity and reliability of this scale were examined (Hasani, 2011). For validity, correlation between subscales was used, and these correlations ranged from 0.73 to 0.88. For validity, Cronbach's alpha coefficient was used, and these coefficients for subscales ranged from 0.68 to 0.86.

Intolerance of Uncertainty Scale (IUS):

Buhr and Dugas's (2002) ambiguity intolerance questionnaire has 27 items that are answered on a 5-point Likert scale. The initial version in French has obtained internal consistency ($\alpha = 0.91$) and a 4-week interval with a relatively good test-retest reliability coefficient ($r = 0.78$). Buhr and Dugas (2002) prepared and validated the English version. Cronbach's alpha and test-retest reliability coefficients were obtained as 0.94 and 0.74, respectively. In Iran, the test-retest method's reliability has been reported to be 0.79, and it has good face validity (PourMohammad Ghouchani, 2022).

Cognitive flexibility questionnaire (CFI):

The questionnaire was developed by Dennis and Vander Waal in 2010 (Dennis & Vander Wal, 2010). This questionnaire consists of 20 questions. This questionnaire has a 5-point Likert scale (Salmanipoor et al., 2023). In the study of Dennis and Vander Wal (2010), the concurrent validity of this questionnaire was -0.39, and its convergent validity was 0.75. In Iran, the reported retest

coefficient of the scale was 0.71, and the Cronbach's alpha coefficients were 0.90 for the scale (Kohandani & Abolmaali Alhosseini, 2017).

Social Phobia Inventory (SPIN):

This questionnaire was designed by Connor et al. (2000) to assess social anxiety. A cut-off point of 40 with an efficiency of 80% and a cut-off point of 50 with an efficiency of 89% differentiates people with social anxiety from those without (Connor et al., 2000). The reliability of this questionnaire by retest method in groups diagnosed with social anxiety disorder is equal to 0.78 to 0.89, and its internal consistency coefficient is reported as 0.94 in a normal group. In Iran (Hassanvand Amouzadeh, 2016) the Cronbach's alpha of the questionnaire was 88, and its reliability was 0.87.

Structured clinical interview for DSM disorders (SCID-5):

The Structured Clinical Interview for Axis I Disorders is designed (Osório et al., 2019). After translating the questionnaire into Persian, they administered the interview to 299 individuals in Iran. Diagnostic agreement was moderate or adequate for most general and specific diagnoses (kappa above 60%). Overall agreement (52% of all current diagnoses and 55% of all lifetime diagnoses) was also good (Sharifi et al., 2004).

Emotional schema therapy package:

This treatment was introduced by Leahy et al. (2019) and consisted of nine 90-minute sessions for the experimental group. The content of the sessions is presented in Table 1.

Table 1. Summary of Emotional schema therapy package sessions

Sessions	Content
1	The first session's content includes familiarizing the group members with each other, explaining the goals, preparing and introducing the model of emotional schema, and performing a pre-test to present a model of emotion to the participants.
2	The content of the second session included strengthening emotional awareness, validating emotions, and identifying troublesome emotional schemas.
3	The content of the third session includes inventing adaptive strategies for compromise with discrediting, labeling, and differentiating emotions from each other, increasing the tolerance of mixed emotions, and normalizing emotional experiences.
4	The fourth session's content included accepting emotions, normalizing emotional experience, distinguishing between emotion and action, experiencing emotion as a wave, and behavioral testing of emotional prediction.
5	The content of the fifth session included increasing the power of accepting emotions, adopting a position away from judgment for emotions, and conducting a behavioral emotion to test false emotional beliefs.
6	The sixth session's content included strengthening emotional awareness, inducing emotion, creating emotional space, and examining emotion as a goal.
7	The seventh session's content included climbing the ladder of higher concepts, distinguishing thoughts from feelings, and de-catastrophizing.
8	The content of the eighth session included the defense lawyer's technique, examining the evidence of negative thoughts, lightening and weighting benefits and harms.
9	The ninth session's content included summarizing the content and teaching how to generalize it when there is a problem, how to do homework and post-exam.

Procedure

Samples were selected purposively and based on the inclusion criteria and randomly replaced in two experimental and control groups. Inclusion criteria included being a male student in the second year of high school, not having concurrent mental illnesses, not having a specific physical illness, not receiving a similar concurrent intervention program, and not being exposed to medication or psychotherapy at the time of the intervention, informed consent, and having a diagnosis of social anxiety disorder.

Exclusion criteria included the subject's unwillingness to continue cooperation and absence of more than two sessions. Data were analyzed using repeated measures analysis of covariance using SPSS 27 software.

Results

In the present study, 30 second-year high school male students participated in the experimental group with a mean and standard deviation of 16.79 ± 2.06 and a mean and standard deviation of age of 17.09 ± 2.29 .

Table 2. Mean and Standard Deviation of Research Variables in Pre-Test, Post-Test and Follow-Up Stages

Variables	Groups	Pre-test	Post-test	Follow-up
Cognitive Emotion Regulation (Negative)	Self-blame Experimental	5.66 (2.22)	2.73 (0.96)	2.60 (0.63)
	Control	2.86 (0.83)	2.93 (0.88)	2.53 (0.83)
	Contemplation Experimental	5.93 (1.75)	2.80 (0.67)	2.66 (0.48)
	Control	2.73 (0.79)	2.75 (0.73)	2.86 (0.51)
	Catastrophizing Experimental	6.66 (1.79)	3.26 (1.22)	3.06 (1.03)
	Control	3.33 (0.89)	3.34 (1.23)	3.46 (1.12)
	Blaming others Experimental	6.73 (1.57)	3.53 (1.12)	3.26 (1.09)
	Control	3.33 (0.89)	3.34 (1.23)	3.46 (1.12)
	Undercounting Experimental	4.20 (1.47)	7.13 (1.59)	7.20 (1.47)

Cognitive Emotion Regulation (Positive)	Acceptance	Control	4.40 (1.24)	4.13 (1.40)	4.14 (1.24)
		Experimental	3.73 (1.27)	6.80 (1.47)	6.93 (1.33)
		Control	3.93 (1.38)	3.80 (1.37)	3.53 (1.12)
	Positive evaluation	re- Experimental	4 (1.30)	6.93 (1.57)	6.94 (1.58)
		Control	3.93 (1.22)	3.94 (1.33)	4.20 (1.32)
	Positive focusing	re- Experimental	3.80 (1.20)	7.06 (1.66)	7.13 (1.59)
		Control	3.73 (1.09)	3.74 (1.16)	4.20 (1.32)
	Re-focusing plans	on Experimental	3.86 (1.30)	7.20 (1.47)	7.33 (1.54)
		Control	4.06 (1.09)	3.66 (1.17)	4.06 (1.22)
Cognitive flexibility	Alternatives	Experimental	45.33 (12.67)	57.60 (7.41)	58.26 (7.89)
		Control	46 (12.66)	46.33 (13.01)	46.53 (12.53)
	Control	Experimental	34.20 (9.61)	43.13 (5.02)	43.80 (4.37)
		Control	34.60 (9.31)	34.80 (9.68)	34.86 (9.98)
	Alternatives to human behavior	Experimental	8.86 (2.19)	11.06 (1.16)	11.60 (1.29)
		Control	9.20 (2.30)	9.06 (2.08)	9.33 (2.16)
Uncertainty intolerance	Experimental		76.53 (17.34)	54.73 (12.71)	54.93 (12.93)
	Control		77.20 (17.60)	77.33 (16.93)	77.34 (17.41)

Table 3 shows the mean and standard deviation of pretest/post-test and follow-up scores for cognitive emotion regulation, cognitive flexibility, and uncertainty

intolerance in the experimental and control groups.

Multivariate analysis of covariance with repeated measurements was used to test the hypotheses.

Table 3. Results of Multivariate Analysis of Covariance with Repeated Measures

Variable	Title of test	Intercept	Value	F	Sig
Emotional schema therapy	Wilks's lambda	Time	0.001	101.796	0.001
		Group	0.098	11.306	0.001
		Group* Time	0.001	130.477	0.001

Based on the results obtained in Table 4, it can be concluded that the main hypothesis of the research regarding the effectiveness of emotional schema therapy is

confirmed, given that at least one of the criterion variables is significantly affected by the independent variable ($p < 0.001$).

Table 4. Results of univariate analysis of covariance with repeated measures

Variables	SS	df	MS	F	Sig	Effect Size
Self-blame	41.356	1.353	30.568	28.136	0.001	0.501
Contemplation	53.622	1.490	35.993	35.786	0.001	0.561
Catastrophizing	64.022	1.344	47.625	31.809	0.001	0.532
Blaming others	55.822	1.311	42.592	34.210	0.001	0.550
Undercounting	52.289	1.301	40.191	26.186	0.001	0.483
Acceptance	58.400	1.493	39.112	33.754	0.001	0.547
Positive re-evaluation	39.467	1.581	24.959	33.241	0.001	0.543
Positive re-focusing	52.289	1.448	36.119	27.338	0.001	0.494
Re-focusing on plans	65.067	1.598	40724	47.117	0.001	0.627
Alternatives	740.956	1.080	686.335	8.908	0.001	0.241
Control	409.356	1.053	388.910	9.354	0.001	0.250
Alternatives to human behavior	30.689	1.355	22.653	10.251	0.001	0.268
Uncertainty intolerance	2383.622	1.112	2144.411	62.927	0.001	0.692

Based on the results in Table 5, it was determined that the effect of the emotional schema therapy intervention was positive and significant, and the experimental group, compared to the control group, obtained lower scores in

negative cognitive strategies and higher scores in positive cognitive strategies of cognitive emotion regulation, psychological flexibility, and uncertainty intolerance.

Table 5. Bonferroni Post Hoc Test Results for Pairwise Comparisons

Variables	(I) Factor 1	(J) Factor 1	Mean Differences (I-J)	SE	Sig
Self-blame	Pre-test	Post-test	1.433	0.244	0.001
	Pre-test	Follow-up	1.700	0.286	0.001
Contemplation	Pre-test	Post-test	1.567	0.258	0.001
	Pre-test	Follow-up	1.568	0.250	0.001
Catastrophizing	Pre-test	Post-test	1.700	0.315	0.001
	Pre-test	Follow-up	1.733	0.283	0.001
Blaming others	Pre-test	Post-test	1.600	0.281	0.001
	Pre-test	Follow-up	1.733	0.283	0.001

Undercounting	Pre-test	Post-test	-1.333	0.301	0.001
	Pre-test	Follow-up	-1.367	0.303	0.001
Acceptance	Pre-test	Post-test	-1.467	0.282	0.001
	Pre-test	Follow-up	1.400	0.263	0.001
Positive re-evaluation	Pre-test	Post-test	-1.468	0.210	0.001
	Pre-test	Follow-up	1.600	0.234	0.001
Positive re-focusing	Pre-test	Post-test	-1.633	0.282	0.001
	Pre-test	Follow-up	-1.733	0.295	0.001
Re-focusing on plans	Pre-test	Post-test	-1.467	0.236	0.001
	Pre-test	Follow-up	1.734	0.233	0.001
Alternatives	Pre-test	Post-test	-6.300	1.042	0.001
	Pre-test	Follow-up	-6.733	1.982	0.001
Control	Pre-test	Post-test	-4.567	0.504	0.001
	Pre-test	Follow-up	-4.933	1.425	0.001
Alternatives to human behavior	Pre-test	Post-test	-1.333	0.378	0.001
	Pre-test	Follow-up	-1.433	0.453	0.001
Uncertainty intolerance	Pre-test	Post-test	-10.733	1.351	0.001
	Pre-test	Follow-up	-10.833	1.353	0.001

The results of Table number 5 showed that the effect of emotional schema therapy intervention on cognitive emotion regulation, uncertainty intolerance, and psychological flexibility in male students with social anxiety disorder was permanent in a three-month follow-up.

Discussion

The purpose of this study was to investigate the effectiveness of emotional schema therapy on cognitive regulation of emotion, uncertainty intolerance, and psychological flexibility in male students with social anxiety disorder. The results indicated the positive effectiveness of cognitive schema therapy in regulating the emotional cognition of students with exam anxiety. These findings aligned with some researchers in this field (Mousavi et al., 2024; Pirayeh et al., 2023). In explaining these findings, it can be said that social anxiety disorder is, first of all, a cognitive-emotional disorder (Rozen & Aderka, 2023). In this disorder, the person fears behaving in a way that is embarrassing and humiliating (Somma et al., 2025). The dominant view in emotional schema therapy theory is that people's interpretations of negative emotions and their response style determine the incidence of mental disorders (Leahy, 2019). Therefore, what is taken into consideration in emotional schema therapy in patients with social anxiety is the unknown and disproportionate interpretations of these people, which leads to emotional and emotional issues and problems in them. Another thing is that social anxiety disorder affects the performance of sufferers in important social situations (Somma et al., 2025). On the other hand, emotional schema therapy focuses on emotion-related beliefs and emotion control strategies. Emphasizing strategies for managing various stressful situations can have a positive impact on people with social anxiety (Leahy, 2019). Affected by the intervention of emotional schema therapy, the affected person learns to have a real encounter with his unconventional emotional thoughts and experiences and break this cycle. Moreover, this is the validation process. Validation means showing the patient's feelings and thoughts like a mirror. Validation is related to almost all

emotional schemas (Leahy, 2019). In this treatment, the therapist accepts the patient's emotions as reality and tries to teach them to face in another way. Another important point is that beliefs and strategies about emotion determine the effect of an emotion (Leahy, 2019). Affected by the intervention of emotional schema therapy, the affected person learns to have a real encounter with his unconventional emotional thoughts and experiences and break this cycle. Moreover, this is the validation process. Validation means showing the patient's feelings and thoughts like a mirror. Validation is related to almost all emotional schemas (Leahy, 2019). In this treatment, the therapist accepts the patient's emotions as reality and tries to teach them to face in another way.

Based on the obtained results, it was found that emotional schema therapy intervention had a positive and significant effect on the dimensions of psychological flexibility in male students with social anxiety. These findings aligned with some researchers in this field (Jafarzade Jahromi et al., 2022; Mohammadkhani et al., 2022). Psychological flexibility is an adaptive coping process that includes acceptance of unpleasant emotions, disengagement from thoughts, and the ability to move in line with value-oriented life plans. In contrast, psychological inflexibility is defined as experiencing high levels of experiential avoidance, cognitive fusion, and Dysfunctional behavior that is not in line with the values that have been described (Shende & Mudar, 2023). In people with social anxiety, there are many intellectual and mental biases and cognitive errors that are the cause of dysfunctional emotions in these people. The emotional schema therapy model tries to restore the emotions associated with test anxiety by managing thoughts and reconstructing them, which is based on ineffective cognitions and corresponding negative emotions (Gorinelli et al., 2022). To manage and guide people suffering from social anxiety in facing anxiety-producing situations. Changing the intellectual background and cognitive reconstruction resulting from the emotional schema therapy model (Leahy, 2019) can proactively prepare a person suffering from social anxiety to face stressful environmental situations and reduce the emotions

experienced as a result. Positively affect.

Based on the obtained results, it was found that the effect of emotional schema therapy intervention on uncertainty intolerance in male students with social anxiety was positive and significant. This finding aligned with some researchers in this field (Jain et al., 2024; Tör Çabuk & Koç, 2024). People who are intolerant of ambiguity, in ambiguous and non-obvious situations, experience anxiety and mental and intellectual conflict, stick to their previous thought patterns, and are unable to process new information (Tör Çabuk & Koç, 2024). A person with social anxiety has deep mental conflicts with social situations, especially situations that require presence and conversation in public. What a person with social anxiety suffers from is the distress in social situations and the ambiguity caused by how to react to it. A person with social anxiety strongly believes in the occurrence of uncontrollable events in the future and the ambiguity caused by appropriate and appropriate reactions.

Conclusion

The current research is limited by location and gender and is exclusive to Hari's male students. The results of the present study are limited to students with social anxiety disorder. The sample selection is purposeful, and the generalizability of the findings in this situation can be more complex than that of a random sample. In the present study, only cognitive and emotional regulation, psychological flexibility, and uncertainty intolerance have been evaluated.

According to the effectiveness of emotion schema therapy on the dimensions of cognitive regulation of emotion, cognitive flexibility, and uncertainty intolerance in students with social anxiety disorder, it is suggested to therapists, counselors, teachers, and school administrators that such interventions be carried out in educational environments for These students should be provided.

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ORCID

Davod Ghaderi: <https://orcid.org/0000-0002-7938-7214>

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