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## Comparison of the Effect of Contextual Schema Therapy and Emotion Efficacy Therapy on Interpersonal Sensitivity, Coping Self-efficacy and Focus of Attention in Adolescent Girls with Social Anxiety

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### ABSTRACT

**Objective:** The purpose of this study was to compare the effect of contextual schema therapy and emotion efficacy therapy on interpersonal sensitivity, coping self-efficacy and focus of attention in adolescent girls with social anxiety.

**Methods:** The research method was a field experiment with a pre-test-post-test design with a control group and a one-month follow-up. The statistical population included all female students of the second secondary level between 15 and 16 years of age in Barazjan who were studying in 1400-1401 school year. At first, the Social Phobia Inventory was completed by the students and 60 students whose social anxiety score was one standard deviation above the mean were randomly selected and assigned to two experimental groups and one control group (20 people in each group). Before the implementation of the intervention, the scales of interpersonal sensitivity, coping self-efficacy, and focus of attention were completed by samples. After that, in experimental group 1, contextual schema therapy based on the protocol of Roediger et al. (2018) and in experimental group 2 emotion efficacy therapy using McKay and West (2016) protocol, during 8 sessions of 70 minutes were implemented for two months (one session every week) and the control group did not receive any intervention. To analyze the data, multivariate covariance analysis was used using SPSS-25 software.

**Results:** The results showed both contextual schema therapy and emotional efficiency-based therapy have an effect on interpersonal sensitivity, coping self-efficacy and the focus of attention of female students with social anxiety and this effect is lasting over time ( $p < 0.001$ ).

**Conclusions:** According to these results, it is suggested that the Ministry of Education and its related institutions seek to plan for the education of children and teenagers using the approach of contextual schema therapy and also therapy based on emotional efficiency.

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## Introduction

Nowadays, students face many educational needs due to the strict demand and accurate assessment of society for interaction. In the meantime, teenagers who are facing issues such as social anxiety are not able to communicate and deal with social issues well. Social anxiety is an extreme or unreasonable fear of situations where a person's behavior or performance may be checked or evaluated. This fear is caused by the expectation that the person will be judged negatively and this issue will cause him embarrassment and humiliation (Imani et al., 2019). Physical symptoms in these people include increased heart rate, having a blank state of mind, loss of control of behavior, decreased eye contact, restless behavior and blushing (Kindred & Bates, 2023). According to past researches, there is a high prevalence of social anxiety in late childhood and early adolescence, which is higher in girls than boys (Rahmanian et al., 2020). Socially anxious people cannot completely get rid of their anxiety after facing an anxiety-provoking social situation, because they constantly create negative mental images from their negative and distorted experiences in social situations. All these ideas are mixed with their social schemas and cause a feeling of shame and embarrassment about past social interactions, followed by an increase in anxiety and a feeling of pressure to avoid future social interactions (Ghadampour et al., 2018).

One of the factors affecting social anxiety is interpersonal sensitivity, which means being very aware of the behavior and feelings of others and being overly sensitive to that behavior and feelings. People with these personality traits are very busy with their interpersonal relationships, and they are attentive to the behavior and attitude of others, they are very sensitive to blame and rejection, and they adjust their behavior to minimize the risk of blame or rejection by expectations of others (Lin & Fan, 2022). Although social relationships play an important role in people's mental health, sometimes they are also a source of stress; In this case, the effect of relationships is generally negative for people (Liu et al., 2023).

In addition, one of the variables affecting social anxiety is coping self-efficacy, which refers to people's belief in dealing with stressful events and how people can deal with events in a favorable and appropriate way (Freire et al., 2020). When managing difficult situations, people must have an effective coping mechanism in order to eliminate stress and its adverse effects on their health and well-being. If they have a proper understanding of their abilities and capabilities, they will be

less vulnerable when dealing with stressful life situations (Norouzi et al., 2016). Also, facing stressful situations requires coping skills, and a person who feels competent in dealing with stressful situations has coping self-efficacy (Tolan & KARA, 2023). Coping self-efficacy skill, which enables a person to give a normal response to environmental and social stress by regulating emotions, teaches a person how to have adaptive and congenial behaviors (Morovati & Yadegari, 2019).

Focus of attention is also one of the issues faced by people with social anxiety. Focused attention and selective biases in attention, interpretation, memory, and social judgment are among the main cognitive components in the field of social anxiety and it seems that people with social anxiety disorder tend to be in social situations, transfer their attention to internal aspects, including arousal, behavior, thoughts, emotions or appearance, and show less attention to the external environment (Chen et al., 2023). Focusing attention on oneself and evaluating one's own behavior is a part of a person's wrong attempt to avoid embarrassment and humiliation. Attention to oneself increases the access of people suffering from social anxiety to their thoughts and feelings and interferes with their performance (Zareie Faskhudi et al., 2021).

Some experts believe that schema therapy can be successfully used to treat anxiety disorders, including social anxiety disorder (van Dijk et al., 2023). Schemas are patterns or deep and inclusive themes that are made up of memories, emotions, cognitions and physical feelings, formed in childhood and adolescence, as patterns. They are used to process subsequent experiences and can activate stress, dysfunctional attitude, pessimistic explanatory style, despair and helplessness in various life situations and events (Ghaderi et al., 2016). A suitable method for the treatment of anxiety disorders, is contextual schema therapy, which includes the evaluation of schemas according to the conditions that a person is facing. Contextual schema therapy is a new model of schema therapy developed by Roediger (2016). In this approach, by using contextual techniques, it is tried to identify and improve the individual's maladaptive schemas (Roediger et al., 2018). Contextual schema therapy is based on the schema therapy approach and strengthens the main foundations of the model: Conceptualization of emotional biography, emotional, behavioral and biological needs, identification of primary unmet needs and improvement of primary maladaptive

schemas and coping modes related to current and long-term emotional suffering (Stefan et al., 2023).

Ghadampour et al. (2018) showed that emotional schema therapy, due to its emphasis on the role of one's beliefs and strategies about emotions, can be an effective intervention to reduce the symptoms of social anxiety disorder, including mind rumination and cognitive avoidance, in people with clinical symptoms of anxiety. Ghaderi et al. (2016) also showed that schema therapy is effective for correcting initial maladaptive schemas and reducing the symptoms of social anxiety disorder. Schaich et al. (2020) showed in their research that contextual schema therapy is an effective way to reduce the symptoms of people with borderline personality disorder. The long-term effects of contextual schema therapy include better understanding of schemas, improvement in emotion regulation and interpersonal relationships. Roediger (2016) introduced contextual schema therapy as effective in reducing emotional problems and concluded that contextual schema therapy can be more than changing coping reactions or schema activations. Also, Baljé et al. (2016) in a study compared two treatment methods, group schema therapy and group cognitive-behavioral therapy. The findings showed that group schema therapy is more effective for people who have both social anxiety disorders and avoidant personality disorder at the same time.

Also, researchers believe that social anxiety is an emotional state that emerges following the evaluation of information about threatening events or the perception of a person's ability to face those events (Kouchi et al., 2021). Since emotion regulation is one of the effective factors in the emergence, maintenance, and continuation of anxiety, depression and stress; therefore, one of the effective structures related to anxiety is emotion efficacy (Ebrahimi et al., 2021). Emotion efficacy therapy is developed based on several cognitive and behavioral therapies and integrates acceptance and commitment-based therapies and dialectical behavior therapy with exposure-based therapy (McKay & West, 2016). This treatment targets low emotional efficiency. Instead of focusing on reducing emotional dysregulation and the underlying symptoms of anxiety, depression, stress and impulsivity, the skills of this type of therapy focus on increasing distress tolerance, and reducing emotional avoidance. By using the five components of emotion awareness, conscious acceptance, value-based action, conscious coping, and practicing coping skills, treatment seekers learn to make their own choices when faced with difficult emotions. Instead of ineffective reactions and

maladaptive responses, treatment seekers acquire tools that allow them to establish a new relationship with their emotions (Wells et al., 2012).

Hosseini Ardakani (2020) investigated the effectiveness of emotion-based therapy on social anxiety and interpersonal dependence of women referring to health centers and concluded that emotion-based therapy is applicable in the treatment of other mental disorders in addition to its effectiveness in the field of personality disorders. Abdi Sarkami et al. (2020) compared the effectiveness of metacognitive therapy and emotion efficacy therapy on depression and self-care in non-clinically depressed elderly. The results showed that metacognitive therapy and emotion efficacy therapy are effective in improving depression symptoms and self-care ability of non-clinically depressed elderly. Also, the research done by Akbari et al. (2015) was conducted to compare the effectiveness of transdiagnostic therapy based on negative repetitive thoughts with integrated transdiagnostic therapy in the of treatment seekers with anxiety disorders and depression, and showed that both treatments succeeded in reducing anxiety and depression compared to the control group. In research, Sakiris and Berle (2019) found emotional efficiency-based therapy to be effective in experiential avoidance and distress tolerance. They concluded that emotion efficacy therapy is effective in reducing distress intolerance, emotional avoidance and emotional dysregulation symptoms.

Koban et al. (2017) believed that social anxiety can be chaotic and destructive, which usually causes a lot of worry in people. Considering the high prevalence of this disorder and the high level of anxiety among female students, it is necessary to know the effective factors in the emergence and continuation of social anxiety and appropriate treatment methods (Mohammadi & Hafezian, 2019). Therefore, according to the great need in this field and since interpersonal sensitivity, coping self-efficacy and the focus of attention are important factors in maintaining and perpetuating social anxiety, and contextual schema therapy and emotion-based therapy can have a significant effect on these variables, therefore, the present study investigates and compares the effectiveness of contextual schema therapy and emotion efficacy therapy on interpersonal sensitivity, coping self-efficacy, and focus of attention in adolescent girls with social anxiety.

## Material and Methods

### Statistical Population, Sample and Sampling Method

The research design was a semi-experimental type with pre-test-post-test, along with control group and follow-up stage (Table 1). The experimental groups were made up of 15-16-year-old teenage girls of secondary schools. The statistical population of this research consisted of all secondary school female students of Barazjan city who were studying in the academic year of 1400-1401. The sampling method was a multi-stage cluster sampling method due to the large size of the population and compliance with the thrift principle. In the first stage, the research community was divided into district 1 and 2, then one school was selected from each district. Social Phobia Inventory was implemented among secondary female students (10th and 11th grades) and those with high social anxiety score (60 people) were selected randomly and placed in two experimental and one control group (20 people in each group). Among the entry criteria are: studying at the secondary level, completing the questionnaires, obtaining a higher-than-average score in the social anxiety questionnaire and completing the informed consent form. The dropout criteria also included non-participation in therapy sessions and failure to respond to homework and therapy exercises.

**Table 1.** Diagram of the research design

Group	Pre-test	Independent variable	Post-test	Follow-up
Experimental 1	T1	Contextual schema therapy	T2	T3
Experimental 2	T1	Therapy sessions based on emotion efficacy	T2	T3
Control	T1	-	T2	T3

### Instruments

**Social Phobia Inventory:** To measure social anxiety, the social phobia inventory (Connor et al., 2000) was used. This list contains 17 items and consists of three subscales of phobia (6 items), avoidance (7 items) and physiological discomfort (4 items). The scoring of this scale is based on a five-point Likert scale from 0 (not at all) to 4 (very much). Based on the results obtained from the interpretation of the scores, 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 non-sufferers (Connor et al., 2000). This list has high reliability and validity. Its reliability coefficients with the

retest method in groups diagnosed with social anxiety were equal to 0.78 to 0.89, and its internal consistency coefficients (Cronbach's alpha) were reported as 0.94 in a normal group. Also, 0.89, 0.91 avoidance and 0.80 physiological discomfort have been reported for the subscales of phobia (Connor et al., 2000). The construct validity of the social phobia inventory was examined by comparing the results of this test in two groups of subjects diagnosed with social anxiety disorder and normal subjects without psychiatric diagnosis, which showed a significant difference. This indicates its high validity and reliability (Salajegheh, S., & Bakhshani, 2014).

**Interpersonal Sensitivity Scale:** Interpersonal sensitivity scale was invented by Boyce and Parker in 1989, to measure interpersonal sensitivity or sensitivity to social rejection. This questionnaire contains 36 items and five subscales, which include: interpersonal awareness, need for approval, separation anxiety, timidity and fragile inner self. Answers are scored on a four-point Likert scale from 1 (completely disagree) to 4 (completely agree). The sum of the scores of all items shows the total score of interpersonal sensitivity. The highest score a person can get in this scale is 144 and the lowest score is 36. Boyce & Parker (1989) obtained Cronbach's alpha coefficients for the subscales of interpersonal awareness 0.76, need for approval 0.55, separation anxiety 0.67, timidity 0.63, fragile inner self 0.59 and the whole scale 0.86. Narimani et al. (2015) reported the reliability of this scale as 0.87 using Cronbach's alpha method. In this research, the reliability coefficient of interpersonal sensitivity scale was calculated as 0.88 using Cronbach's alpha method.

**Coping Self-efficacy Scale:** Coping self-efficacy scale is made by Chesney et al. (2006). This scale measures positive and constructive coping and focuses on a person's confidence in their ability to cope effectively. This scale has 26 items and its purpose is to evaluate positive and constructive coping from different dimensions (stopping emotions and unpleasant thoughts, problem-oriented strategy, receiving support from family and friends). The scoring of the questionnaire is in the form of a three-point Likert scale, and the method of scoring is the option 'certain can do' gets from 5 to 10, the option 'moderately can do' received 1 to 5, and 'cannot do at all' obtains a score of zero. To obtain the score for each dimension, the total scores for each of its items are added together. Chesney et al. (2006) reported the reliability coefficients of this scale using Cronbach's alpha method for the subscales of stopping emotions and unpleasant thoughts, problem-oriented coping, and receiving support from family and friends, respectively, 0.89, 0.83,



and 0.91. Also, Bahramiyan et al. (2020) investigated the construct validity of this scale by confirmatory factor analysis and confirmed it (RMSEA=0.04, GFI=0.89, IFI=0.91, CFI=0.93,  $df=1X2/73$ ). The reliability of this scale was also determined by Cronbach's alpha method for the subscales of stopping emotions and unpleasant thoughts, problem-oriented coping, receiving support from family and friends, and the whole scale, respectively, equal to 0.80, 0.63, 0.71, and 0.88 has been calculated (Bahramiyan et al., 2020). In this study, the reliability of coping self-efficacy scale was calculated using Cronbach's alpha method as 0.93.

**Focus of Attention Questionnaire:** The focus of attention questionnaire was made by Woody et al. (1997). The goal of this questionnaire is to assess adults with social anxiety's focus of attention in social interactions across two dimensions: self-focused attention (5 items) and external attention (5 items). This questionnaire has 10 items and scoring is on a 5-point Likert scale from 1 (Not at all) to 5 (Totally). Woody et al. (1997) have confirmed the reliability and validity of this questionnaire. Hedayati and Torkan (2021) reported Cronbach's alpha coefficient of self-focused attention 0.73 and 0.82 for external attention. In the present study, the reliability coefficients of the subscales of self-focused and external attention were calculated as 0.75 and 0.71, respectively, using Cronbach's alpha method.

### Data Analysis

In the pre-test phase, the social phobia inventory of Connor et al. (2000) was carried out on sampled secondary school female students, then 60 people were selected randomly among those who scored above the average. In the next step, the selected people were divided into three groups of 20 people (including two experimental groups and one control group) in a simple random manner. Before the implementation of the intervention, the participants of all three groups completed the scales of interpersonal sensitivity and coping self-efficacy and the focus of attention questionnaire in the form of a pre-test. Then, in experimental group 1, the treatment method of contextual schema therapy (Roediger et al., 2018), and for the members of experimental group 2, the emotion efficacy therapy (McKay & West, 2016) were implemented during eight sessions (two sessions per week and each session 70 minutes). The participants received them during one month. During this period, the participants of the control group did not receive any intervention. After the completion of the intervention, the research questionnaires were administered and one month after



the completion of the treatment sessions, in order to measure the continuity of the effect of the applied treatment, the research questionnaires were administered again (the questionnaires were administered in all three stages of the pre-test) , the post-test and follow-up were conducted in person, however, the implementation of the intervention was conducted virtually in order to maintain and comply with health protocols). In order to analyze the data, multivariate covariance analysis was used in SPSS 25 software. Tables 2 and 3 show a summary of the treatment sessions.

**Table 2.** Summary of contextual schema therapy sessions (Roediger et al., 2018)

Session	Description of Sessions
First	Introduction, examination of the main goals of the group, completion of pre-test questionnaires, completion of the short form questionnaire of Young's schemas by the subjects, explanation of the types of needs (physiological and emotional), the five emotional needs and the ways to reach Satisfaction, explanation of schematic model in simple language.
Second	Presenting the results of Young's schemas questionnaire to the subjects, explaining about the recognition of interpersonal schemas, helping to connect the evolutionary roots of childhood with current problems, searching for life history, realizing inefficient patterns and problematic behavior cycles. Subjects' awareness of their childhood experiences and recognition of dysfunctional thoughts and feelings.
Third	Accurate description of problem-causing behaviors, activation of mental images, corrective experience of facing social conditions, evaluation of emotional states, self-observation and revision of people's conceptualization of problems in social situations, training to draw a mental map and do it by subjects.
Fourth	Teaching confrontational mindsets, evaluating the advantages and disadvantages of confrontational styles, identifying opposing behaviors of submission, avoidance and compensation, teaching the use of chair techniques to examine the mindsets of children and inner critics, increasing focus on the present and strengthening healthy adults or methods Such as: mindfulness meditation, ball of light, surfing on emotions, identification of values and practice at home
Fifth	Teaching experimental methods and exercises for depicting important life events, Bazoudini and reframing life events and using the chair technique, expanding and replacing, using practical exercises as homework.
Sixth	Empathic confrontation, increasing motivation to change, practicing healthy behaviors through imagery and experimental techniques, creating motivation to change through encouraging self-efficacy and applying basic principles including being active, taking small steps, and changing successful behavior as parts The importance of treatment, training in the use of daily conversation notebooks and the responsiveness of healthy adults.
Seventh	Playing a role, overcoming possible obstacles, strengthening new behaviors and reviewing topics presented in the role-playing technique, elements of mental imagery, dialogue of mentalities and role playing were combined to show a scene from childhood. In this technique, the activation of the subject's mentality is supported, and in this way, the treatment seeker achieves the perspective of a healthy adult mentality.
Eighth	Reviewing past materials, answering questions, expressing gratitude, completing post-exam questionnaires

**Table 3.** Summary of therapy sessions based on emotion **efficacy** (McKay & West, 2016)

Session	Description of the sessions
First	Conducting the pre-test, describing the role and importance of emotion avoidance, distress tolerance and emotion regulation. treatment seekers learned how to observe emotions through the four components of emotion, i.e., thoughts, feelings, bodily sensations, and behavioral tendencies.
Second	Conscious acceptance as a way to increase distress tolerance and emotion regulation, emotional surfing training, practicing the advantages and disadvantages of avoiding emotion, introducing exposure, teaching distress mental unit grading scale.
Third	Learning to identify life values, how to use values-based action as a way to demonstrate mind-conscious acceptance, tolerance of distress, and a life of value. Determining the value areas of the treatment seeker, the benefits of value-based practice, teaching the moment of choice, mental rumination, and abdominal breathing training for daily practice.
Fourth	Practicing values-based action using imaginative exposure and feedback, teaching self-talk and writing techniques, explaining mind-conscious coping as a way to increase emotion regulation and value- and goal-based performance. Four steps in this stage: identifying provoking situations, identifying negative spontaneous thoughts, creating confrontational thoughts and observing-accepting-choosing confrontational thoughts.
Fifth	Guidance to practice skills based on emotional exposure, to acquire each of the emotion efficacy skills. Introducing body relaxation and self-soothing, emphasizing that conscious coping skills are used in combination with conscious acceptance and only when necessary. When the treatment seekers cannot use values-based practice or they do not improve with the practice of conscious acceptance alone, they are used, the breathing practice of symptom control, the practice of the five senses.
Sixth	Mindful coping practice through body relaxation, mindful coping practice through self-soothing, training to use cognitions to reduce emotional activation through coping thoughts and fundamental acceptance, psychological training about fundamental acceptance and Practice through reasoning with excitement and feedback.
Seventh	Learning the skill of enduring distress to prevent pain from turning into suffering, training the latest mindfulness coping skills, training to return attention and take time to rest, choosing to rest means separating from an exhausting experience and moving away from it, returning attention and focus on experiencing the present moment. Teaching strategies to pay attention to another person, to pay attention to other things, to do productive and useful things, to do enjoyable activities.
Eighth	Reviewing the emotion efficacy program with enough time for feedback and troubleshooting, imaginary or emotional exposure using emotional efficiency-based therapy skills and receiving emotion efficacy rating feedback, final words and gratitude, performing the post-test after the treatment.

## Results

### A) Descriptive findings

The research sample consisted of 60 10th and 11th grade girls who were assigned to three experimental and control groups (20 in each). Each experimental group consisted of 11 students in 10th grade and 9 students in 11th grade. In addition, 9 students in the control group were in 10th

grade and 11 students were in 11th grade. Table 4 shows the mean and standard deviation of the pre-test, post-test and follow-up scores of the experimental and control groups in the variables of interpersonal sensitivity, coping self-efficacy, and focus of attention.

**Table 4.** Mean and standard deviation of research variables by experimental and control groups

Variable	Group	Pre-test		Post-test		Follow-up	
		Mean	SD	Mean	SD	Mean	SD
Interpersonal Sensitivity	Experimental 1	94.90	14.37	63.45	9.71	67.75	10.77
	Experimental 2	86.20	11.59	62.40	9.74	69.55	11.34
	Control	88.05	18.84	95.65	12.89	94.50	13.72
Coping Efficiency	Experimental 1	135.20	53.40	205.95	31.95	185.25	38.55
	Experimental 2	177.60	46.34	227.65	24.71	210.80	54.41
	Control	178.85	40.31	151.15	42.71	152.00	36.20
Self-focused Attention	Experimental 1	16.81	3.52	9.13	1.59	10.45	1.94
	Experimental 2	16.70	2.20	11.25	1.71	12.06	2.09
	Control	17.81	4.21	17.25	3.65	15.95	3.19
Eternal Attention	Experimental 1	12.81	3.47	21.15	1.31	19.70	3.19
	Experimental 2	14.33	3.66	19.13	1.91	17.30	1.82
	Control	15.15	4.99	12.89	4.03	13.53	4.13

## B) The effectiveness of the intervention in the post-test phase

In order to investigate the effectiveness of contextual schema therapy and emotion efficacy therapy on interpersonal sensitivity, coping efficiency and the focus of attention aspects as well as the continuity of effectiveness over time, multivariate covariance analysis was used, the results of which are mentioned below.

Regarding the assumptions of covariance analysis, the assumptions of normality, homogeneity of variances and homogeneity of regression slopes were investigated. In order to check the normality of each variable, the Shapiro-Wilk test was used, and the results showed that the distribution of the dependent variables was not significant in any of the pre-test and post-test stages in the experimental and control groups ( $p < 0.05$ ). Therefore, it can be concluded that the distribution of scores is normal and cannot affect the results of the intervention.

Also, the assumption of homogeneity of variances was investigated using Levine's test, and considering the non-significance of the statistic of this test for the dependent variables ( $p < 0.05$ ), the assumption of equality of variances of experimental groups and control group was confirmed

(Interpersonal sensitivity:  $F=0.15$ ,  $p<0.863$ ; Coping self-efficacy:  $F=2.90$ ,  $p<0.063$ ; Self-focused attention:  $F=0.37$ ,  $p<0.547$ ; External attention:  $F=0.93$ ,  $p<0.338$ ).

In relation to the assumption of homogeneity of the regression slopes, the results of the  $F$  group  $\times$  pre-test interaction of interpersonal sensitivity variables ( $F=2.02$ ,  $p<0.122$ ), coping self-efficacy ( $F=0.68$ ,  $p<0.570$ ), self-focused attention ( $F=0.48$ ,  $p<0.706$ ) and external attention ( $F=1.62$ ,  $p<0.196$ ) are not significant; Therefore, the data supported the hypothesis of homogeneity of the regression slopes. As a result, this assumption was also confirmed. Considering that the assumptions of using the analysis of covariance test have been met, using this test for data analysis is unimpeded. Table 5 shows the general results of multivariate covariance analysis in the post-test stage.

**Table 5.** The results of multivariate covariance analysis to compare the mean of dependent variables' post-test scores with the pre-test controls, in the experimental and control groups

Test	Value	F Value	Hypothesis df	Error df	Sig.	Effect size
Pillai's Trace	1.08	14.98	8.00	102.00	0.0001	0.54
Wilks' Lambda	0.07	34.07	8.00	100.00	0.0001	0.73
Hotelling's Trace	10.76	63.91	8.00	98.00	0.0001	0.84
Roy's Largest Root	10.56	134.65	4.00	51.00	0.0001	0.91

As can be seen in Table 5, the four tests of multivariate covariance analysis are statistically significant. Therefore, the test and control groups have a significant difference in at least one of the dependent variables in the post-test stage. In order to compare the groups in terms of individual dependent variables, univariate covariance analysis was used in MANCOVA text, the results of which are shown in Table 6.

**Table 6.** The results of univariate covariance analysis in the MANCOVA text on the mean of dependent variables' post-test scores with the control of the pre-tests, in the experimental and control groups

Dependent variable	Source	Sum of squares	df	Mean Square	F value	Sig.	Effect size
Interpersonal sensitivity	Group	14319.19	2	7159.59	113.87	0.0001	0.81
	Error	3332.41	53	62.88			
coping self-efficacy	Group	76789.64	2	38394.82	69.03	0.0001	0.73
	Error	29481.14	53	556.25			
Self-focused attention	Group	606.80	2	303.40	70.17	0.0001	0.73
	Error	229.17	53	4.32			
External attention	Group	730.96	2	365.48	55.58	0.0001	0.68
	Error	348.51	53	6.58			

According to the results of Table 6, the F values of univariate covariance analysis in interpersonal sensitivity variables ( $F=113.87$ ,  $p<0.0001$ ), coping self-efficacy ( $F=69.03$ ,  $p<0.0001$ ), self-care ( $p<0.0001$ ,  $F=70.17$ ) and external attention ( $p<0.0001$ ,  $F=55.58$ ) are significant. According to these results, there is a significant difference between the average post-test scores of the variables of interpersonal sensitivity, coping self-efficacy, self-focused attention and external attention after controlling the pre-test scores in the experimental and control groups. Also, according to the effect size, therapeutic interventions have the most effectiveness on interpersonal sensitivity (effect size=0.81), self-focused attention (effect size=0.73), coping self-efficacy (effect size=0.72), and external attention (effect size = 0.68).

In the following, in order to investigate the significant differences of the variables between the two experimental groups and the control group, the post-test average of the experimental and control groups was compared in terms of dependent variables. Table 7 shows the results of the comparison of the average post-test scores of the dependent variables in the experimental and control groups through the modified *Bonferroni* post hoc test.

**Table 7.** Bonferroni's post hoc test results to compare the modified means of the dependent variables in the post-test stage in the experimental and control groups

Variable	Group (I)	Group (G)	Statistical Indicators		
			Mean Difference	Mean Error	Sig.
Interpersonal sensitivity	Contextual Schema Therapy	Emotional Efficiency	-4.16	2.80	0.427
		control	-36.30	2.79	0.0001
	Emotional Efficiency	control	-32.14	2.54	0.0001
Coping self-efficacy	Contextual Schema Therapy	Emotional Efficiency	1.23	8.31	1.000
		control	79.52	8.29	0.0001
	Emotional Efficiency	control	78.29	7.54	0.0001
Self-focused Attention	Contextual Schema Therapy	Emotional Efficiency	-2.70	0.73	0.002
		control	-8.24	0.73	0.0001
	Emotional Efficiency	control	-5.54	0.67	0.0001
External attention	Contextual Schema Therapy	Emotional Efficiency	2.42	0.90	0.029
		control	8.85	0.90	0.0001
	Emotional Efficiency	control	6.43	0.82	0.0001

According to the results of Table 7, the difference between the mean of interpersonal sensitivity in the contextual schema therapy and the control groups ( $p < 0.0001$ ) and also between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on reducing interpersonal sensitivity of female students with social anxiety is confirmed. Also, the results of Table 7 show that the difference in the mean of sensitivity between individuals in the contextual schema therapy and the emotion efficacy therapy groups is not significant ( $p < 0.427$ ). In other words, there was no significant difference between the effect of contextual schema therapy and emotion efficacy therapy on reducing interpersonal sensitivity, and both treatment methods were equally effective. In addition, according to the results of Table 7, the difference in the mean of coping self-efficacy in the contextual schema therapy and the control groups ( $p < 0.0001$ ) and also between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on increasing the coping self-efficacy of female students with social anxiety was confirmed. Also, the results of Table 7 show that the difference in the means of coping self-efficacy in the contextual schema therapy and the emotion efficacy therapy groups is not significant ( $p < 1.000$ ). In other words, there was no significant difference between the effect of contextual schema therapy and emotion efficacy therapy on increasing coping self-efficacy and both treatment methods were equally effective.

In this regard, according to the results of Table 7, the mean difference of self-focused attention in the contextual schema therapy and the control groups ( $p < 0.0001$ ) as well as between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on reducing self-focused attention of female students with social anxiety is confirmed. Also, the results of Table 7 show that the mean difference of self-focused attention between the contextual schema therapy and the emotion efficacy therapy groups is significant ( $p < 0.002$ ). In other words, there is a significant difference between the effect of contextual schema therapy and emotion efficacy therapy on reducing self-focused attention, and this difference is in favor of the contextual schema therapy group.

Finally, according to the results of Table 7, the difference in the mean of external attention in the contextual schema therapy and the control groups ( $p < 0.0001$ ) and also between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on increasing the external attention of female students with social anxiety is confirmed. Also, the results of Table 7 show that the difference in the mean of external attention in the contextual schema therapy and the emotion efficacy therapy groups is significant ( $p < 0.029$ ). In other words, there is a significant difference between the effect of contextual schema therapy and emotion efficacy therapy on increasing external attention, and this difference is in favor of the contextual schema therapy group.

### C) The effectiveness of the intervention in the post-test phase

Table 8 shows the general results of multivariate covariance analysis in the follow-up phase.

**Table 8.** The results of multivariate covariance analysis to compare the mean of dependent variables' follow-up scores with the control of the pre-tests, in the experimental and control groups

Test	Value	F Value	Hypothesis df	Error df	Sig.	Effect size
Pillai's Trace	0.91	10.71	8.00	102.00	0.0001	0.46
Wilks' Lambda	0.14	21.50	8.00	100.00	0.0001	0.63
Hotelling's Trace	6.04	36.99	8.00	98.00	0.0001	0.75
Roy's Largest Root	5.98	76.25	4.00	51.00	0.0001	0.86

As can be seen in Table 8, the four tests of multivariate covariance analysis are statistically significant. Therefore, the experimental and control groups have significant differences in at least one of the dependent variables in the follow-up phase. In order to compare groups in terms of individual dependent variables, univariate covariance analysis was used in MANCOVA text, the results of which are shown in Table 9.

**Table 9.** The results of univariate covariance analysis in the MANCOVA text on the mean of dependent variables' follow-up scores with the control of the pre-tests, in the experimental and control groups

Dependent variable	Source	Sum of squares	df	Mean Square	F value	Sig.	Effect size
Interpersonal sensitivity	Group	9253.36	2	4626.68	78	0.0001	0.75
	Error	3116.54	53	58.80			
coping self-efficacy	Group	45179.47	2	22589.74	21.79	0.0001	0.45
	Error	54935	53	1036.52			
Self-focused attention	Group	300.29	2	150.14	29.33	0.0001	0.53
	Error	271.33	53	5.12			
External attention	Group	320.87	2	160.44	19.94	0.0001	0.43
	Error	426.50	53	8.05			



According to the results of Table 9, the F values of univariate covariance analysis in the variables of interpersonal sensitivity ( $F=78.68$ ,  $p<0.0001$ ), coping self-efficacy ( $F=21.79$ ,  $p<0.0001$ ), self-care ( $p<0.0001$ ,  $F=29.33$ ) and external attention ( $p<0.0001$ ,  $F=19.94$ ) are significant. According to these results, there is a significant difference between the mean of follow-up scores of interpersonal sensitivity variables, coping self-efficacy, self-focused attention, and external attention after controlling the pre-test scores in the experimental and control groups. Also, according to the effect size, therapeutic interventions have the most effectiveness on interpersonal sensitivity (effect size=0.75), self-attention (effect size=0.53), coping self-efficacy (effect size=0.45), and external attention (effect size=0.43).

In the following, in order to investigate the significant differences of the variables between the two experimental group and the control group, the means of follow-up of the experimental and control groups was compared in terms of dependent variables Table 10 shows the results of the comparison of the means of follow-up scores of the dependent variables in the experimental and control groups through the modified Bonferroni post-hoc test.

**Table 10.** Bonferroni's post hoc test results to compare the modified means of the dependent variables in the follow-up phase in the experimental and control groups

Variable	Group (I)	Group (G)	Statistical Indicators		
			Mean Difference	Mean Error	Sig.
Interpersonal sensitivity	Contextual Schema Therapy	Emotional Efficiency	-8.16	2.70	0.012
		control	-31.33	2.69	0.0001
	Emotional Efficiency	control	-23.19	2.45	0.0001
Coping self-efficacy	Contextual Schema Therapy	Emotional Efficiency	4.63	11.35	1.000
		control	63.04	11.31	0.0001
	Emotional Efficiency	control	58.41	10.29	0.0001
Self-focused Attention	Contextual Schema Therapy	Emotional Efficiency	-2.35	0.80	0.015
		control	-5.92	0.80	0.0001
	Emotional Efficiency	control	-3.58	0.71	0.0001
External attention	Contextual Schema Therapy	Emotional Efficiency	2.20	1.00	0.096
		control	6.06	1.00	0.0001
	Emotional Efficiency	control	3.86	0.91	0.0001

As can be seen in Table 10, the difference in the mean of interpersonal sensitivity in the contextual schema therapy and the control groups ( $p < 0.0001$ ) as well as between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the continued effectiveness of contextual schema therapy and emotion efficacy therapy on reducing interpersonal sensitivity of female students with social anxiety in the follow-up phase is confirmed. Also, the results of Table 10 show that the difference in the mean of interpersonal sensitivity between the contextual schema therapy and the emotion efficacy therapy groups is significant ( $p < 0.012$ ). In other words, the effect of contextual schema therapy and emotion efficacy therapy has a significant difference on the reduction of interpersonal sensitivity over time, and this difference is in favor of the contextual schema therapy group. In addition, according to the results of Table 10, the difference in the means of coping self-efficacy in the contextual schema therapy and the control groups ( $p < 0.0001$ ) and also between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on increasing the coping self-efficacy of female students with social anxiety in the follow-up phase is confirmed. Also, the results of Table 10 show that the difference in the mean coping self-efficacy between the contextual schema therapy and the emotion efficacy therapy groups is not significant ( $p < 1.000$ ). In other words, there was no significant difference between the effect of contextual schema therapy and emotion efficacy therapy on increasing coping self-efficacy over time, and both treatment methods were equally effective.

In this regard, according to the results of Table 10, the difference of the mean of self-focused attention in the contextual schema therapy and the control groups ( $p < 0.0001$ ) as well as between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on reducing self-focused attention of female students with social anxiety in the follow-up phase is confirmed. Also, the results of Table 10 show that the difference in the mean of self-focused attention in the contextual schema therapy and the emotion efficacy therapy groups is significant ( $p < 0.015$ ). In other words, there is a significant difference between the effect of contextual schema

therapy and emotion efficacy therapy on reducing self-focused attention over time, and this difference is in favor of the contextual schema therapy group.

Finally, according to the results of Table 10, the difference in the mean of external attention in the contextual schema therapy and the control groups ( $p < 0.0001$ ) and also between the emotion efficacy therapy and the control groups ( $p < 0.0001$ ) is significant. Therefore, according to these results, the effectiveness of contextual schema therapy and emotion efficacy therapy on increasing the external attention of female students with social anxiety in the follow-up phase is confirmed. Also, the results of Table 10 show that the difference in the mean of external attention between the contextual schema therapy and the emotion efficacy therapy groups is not significant ( $p < 0.096$ ). In other words, there was no significant difference between the effect of contextual schema therapy and emotion efficacy therapy on the increase of external attention over time, and both treatment methods were equally effective.

## Discussion

The purpose of the present study was to investigate and compare the effect of contextual schema therapy and emotion efficacy therapy on interpersonal sensitivity, coping self-efficacy and focus of attention (self-focused and external) in teenage girls with social anxiety in the second secondary level. The results showed interpersonal sensitivity in the contextual schema therapy group decreased compared to the control group. This finding is implicitly consistent with the research results of Ghadampour et al. (2018), Alaminiya (2015), Penney and Norton (2022) and Calvete et al. (2013). To explain this finding, it can be said that the first step in the contextual schema therapy method is self-awareness, which is very important and fundamental. By using a questionnaire, investigating situations, feelings, thoughts and behaviors, the treatment seeker gains awareness of his mentalities. In this method, treatment seekers are taught to record stressful situations using a table, then write down their feelings, thoughts, body sensations and behavior. This method helps them to become aware of their sensitivities in interpersonal relationships and create a healthier view of situations. When teenagers gain more insight into their problems and get to know their roots in childhood, they will try harder to manage their behaviors and reach treatment goals faster. In addition, the results showed that the emotion efficacy therapy reduced the interpersonal sensitivity of adolescent girls with social anxiety disorder. This finding is implicitly consistent

with the research results of Abdi Sarkami et al. (2020), Nourizadeh Galenkash et al. (2017) and Erözkan (2011). In emotional efficacy therapy, people learn that judging themselves, others, and the world can increase feelings of inadequacy, anxiety, and depression. Learning to ride the wave of emotion is an important part of emotion efficacy therapy. Even when a person is experiencing intense emotions, he will be able to use this skill to avoid judgment and high sensitivity. Although at the beginning of the treatment, it is a little difficult to bear the distress and surfing the excitement, but gradually with more exercises, it will become easier. In the therapy based on emotional efficiency, people are taught that pain is an inevitable part of life and that tolerance for distress can be increased by using conscious methods. Through effective communication between the therapist and treatment seeker, psychoeducation and skills training, the treatment seeker will get to know the moment of choice. The moment of choice is when a person decides how to behave, whether to act based on his emotions and increase emotions or act based on values and gradually reduce his emotions. In this therapy, people determine their values and choose to direct behaviors towards their values. In this way, treatment seeker will be able to manage their difficult emotions and experience them effectively. In addition, the findings of this research showed that the effect of contextual schema therapy and emotion efficacy therapy on interpersonal sensitivity in the post-test stage is the same, and this indicates that both treatments were effective in reducing interpersonal sensitivity in therapy seekers.

Also, the results indicated that in the follow-up phase, there is a difference between the groups of contextual schema therapy, emotion efficacy therapy in terms of interpersonal sensitivity, and both treatments have reduced interpersonal sensitivity in the follow-up phase. In the comparison between the two treatments, the contextual schema therapy has been more effective than the therapy based on emotional efficiency. To explain this finding, it can be said that since in the context therapy schema, the therapist examines the roots of social anxiety in childhood and adolescence, the primary schemas and needs of the individual are identified and examined, and the therapist can help the treatment seeker experience a healthier life according to his important needs. In contextual schema therapy, by emphasizing people's basic schemas, the effect of treatment will be more stable and continuous.

The results showed that coping self-efficacy scores increased in the contextual schema therapy group. The research results of Ghaderi et al. (2016), Roediger and Zarbock (2015) and Thomasson

and Psouni (2010) are implicitly consistent with the results of this research. To explain this finding, it can be said that various techniques are used in the contextual schema therapy method to increase the coping self-efficacy of the individual. In this way, the teenager gets to know his needs and emotions, and then he finds out how to express emotions efficiently. By using techniques such as expansion and substitution, one learns to express one's emotions in an appropriate way and to accept one's emotions and attain compassion and kindness. When people are able to accept their emotions instead of avoiding them in stressful situations, they can better manage their emotions in different situations. This method increases coping self-efficacy in the adolescent and brings him closer to the healthy adult, which is the main goal of the contextual schema therapy. Also, since this treatment method makes the treatment seeker aware of their main emotions and their causes in childhood, it makes a person more aware of his life history and this awareness brings him closer to treatment.

In addition, the results showed that emotion efficacy therapy has been able to increase the coping self-efficacy. The results of this section are consistent with the research findings of Ebrahimi et al. (2021), Morovati and Yadegari (2019), Dugyala and Poyrazli (2021) and Thomasson and Psouni (2010). In the therapy based on emotional efficiency, two effective factors are used to increase emotional efficiency, and their use increases the level of coping self-efficacy in people with social anxiety disorder. Since in social anxiety disorder, the distress tolerance of people is low, that is, they think that they cannot tolerate unpleasant emotions in difficult situations and situations, their anxiety increases. Emotion efficacy therapy teaches people how to cope with distress. On the other hand, one of the characteristics of people with social anxiety disorder is emotional avoidance, which means that these people try to avoid annoying situations and do not face those situations, which is taught to people in the therapy based on emotional efficiency. Instead of avoiding emotional experience, choose an answer that fits your values and act based on them. To facilitate values-based action in difficult situations, treatment seekers are given assignments to practice imagery-based exposure in different situations. These exercises prepare them to be able to accept and confront consciously even in difficult situations.

The results indicated that there is a difference between the scores of the contextual schema therapy and control groups in terms of the focus of attention (self-focused and external). The researches of Baljé et al. (2016) and Bamelis et al. (2014) are implicitly consistent with the results of this

research. To explain this finding, it can be said that in the contextual schema therapy method, mentalization plays a very effective role in the treatment. It means that emotions can be expressed with words. With this method, treatment seeker can be helped to understand themselves and then put themselves in the place of others and look at the problem from the perspective of others. treatment seeker can be taught to ask themselves what the situation is in anxiety-provoking situations. What has caused this excitement? What's the feeling in my body? What do I think? what do I need? How do I think the other person feels? What does the other person think? If I were that person, how would I react? How would I feel if I were that person? Using the mentalization method makes the teenager with social anxiety able to find common views with others and avoid focusing too much on himself and pay attention to others and their opinions as well. In contextual schema therapy, people are taught to distance themselves from their unpleasant thoughts and observe them, not to judge themselves, but to accept their emotions in any situation. In this way, people are gradually able to reduce negative thoughts about themselves and increase attention to the surrounding environment, others and the outside. Contextual schema therapy, using appropriate methods, teaches treatment seekers to pay attention to the present moment and engage in appropriate interaction with the environment and others instead of negative self-evaluation, worry and anxiety, and vulnerability to social environments.

The results showed that the emotion efficacy therapy is effective in adjusting the focus of attention of teenage girls with social anxiety disorder. No previous studies have been found about this finding, but we can point to several studies that have reached somewhat similar results: Akbari et al. (2015), Sakiris and Berle (2019) and Boehme et al. (2015). In emotional efficacy therapy, treatment seekers learn how to reduce mental rumination. By becoming aware of their emotions and realizing the mental ruminations that occupy their minds in the form of judging, predicting and explaining, they learn how to deal with their mental ruminations. Negative spontaneous thoughts can result from judgmental thoughts in which the treatment seeker feels threatened. These thoughts are formed from his beliefs about himself and the world around him, which can help create or increase anxiety. One of the useful methods that are taught to treatment seekers in the emotion efficacy therapy is the training of confrontational thoughts. In this way, first the negative spontaneous thoughts of people, which are more focused on themselves, are identified and then they are replaced by adaptive coping thoughts. After some time, treatment seekers learn to have a

positive attitude towards themselves and not to focus too much on themselves in social situations, but also to pay attention to external situations and others.

Finally, the results showed that in the post-test and follow-up stage, there is a significant difference between the groups of the contextual schema therapy and emotion efficacy therapy in terms of self-focused attention, and the contextual schema therapy has a greater effect on reducing self-focused attention. Also, the findings showed that in the post-test phase, the contextual schema therapy has a greater effect on external attention. To explain this matter, it can be said that in the contextual schema therapy, in addition to examining the initial maladaptive schemas, people's coping styles are also identified and suitable and healthy styles are replaced. These healthy answers gradually change a person's life and give more quality to his life.

The current research was conducted during the Corona pandemic, for this reason it was difficult to reach the students in person and as a result, the therapeutic interventions were virtual. Therefore, it is suggested that in future researches, the intervention should be implemented face-to-face and the results should be compared. Random selection of persons was not possible at all phases of the investigation. Furthermore, due to the absence of confrontation between the counselor and the client during the treatment protocol's execution, establishing good communication and therapeutic relationship was difficult. Also, during the general implementation of the first questionnaire (social anxiety) in the school, it is possible that the questionnaires were not completed with great accuracy in order to identify students with social anxiety; if a clinical interview is also conducted, people with social anxiety will be better identified. This research was carried out on secondary school girls in Barazjan city; therefore, it is necessary to be cautious in generalizing the results. It is suggested that the research be conducted on boys and other statistical populations.

According to the results of the research, it is suggested that: 1) students who suffer from social anxiety and have interpersonal sensitivity, low coping self-efficacy, and their focus is internal, should be identified and treated; 2) Clinics and treatment centers should use the methods of contextual schema therapy and emotion efficacy therapy to treat people who have problems in interpersonal sensitivity, coping self-efficacy and the focus of attention; 3) Psychologists and counselors provide necessary training to students in the fields of reducing interpersonal sensitivity, changing the focus of attention, and increasing coping self-efficacy through conferences and workshops; and 4) According to the research results, the use of the contextual schema therapy



method can be more effective in reducing self-attention and increasing external attention in the long term than the emotion efficacy therapy, so the use of the textual schema therapy method is recommended for self-focused people.

#### **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 Ethics Review Board of Bushehr University of Medical Sciences approved the present study with the code of IR.BPUMS.REC.1400.074. Also, written informed consent was obtained from the participants.

#### **Author contributions**

Dr. Manije Shehni Yailagh was responsible for leading the overall research process. Masumeh Hayati was responsible for research plan design, data collection and analysis, and Dr. Moloud Kekhosrovani was the thesis advisor. All authors discussed the results, reviewed and approved the final version of the manuscript.

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#### **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.

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