



# Effectiveness of Schema Therapy and Acceptance and Commitment Therapy in Components of Cognitive Emotion Regulation among Patients with Anxiety Disorder

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## Abstract

**Background and Objective:** Health anxiety is a broad cognitive disorder that is formed as a misconception about the symptoms and physical changes resulting from a person's beliefs about illness or health. This study aimed to compare the efficacy of schema therapy and acceptance and commitment therapy (ACT) in cognitive emotion regulation components in patients with an anxiety disorder.

**Materials and Methods:** This quasi-experimental study was carried out with a three-group pretest-posttest design. The study population included individuals referring to Bavar and Bamdad counseling centers located in Sari, Iran, in 2019. A sample size of 45 participants was selected using nonrandom sampling (i.e., targeted and voluntary sampling). The measurement tool used was Emotional Cognitive Regulation Questionnaire (Garnefsky and Craig; 2006). Multivariate analysis of covariance and univariate analysis of covariance was used to analyze the data by SPSS software (version 22).

**Results:** The obtained results of the present study showed that schema therapy and ACT were effective in cognitive emotion regulation in patients with an anxiety disorder ( $P < 0.001$ ). The ACT was more effective than schema therapy in the reduction of blaming others ( $P < 0.0001$ ) and focus on catastrophe ( $P < 0.010$ ) and increase of positive refocus ( $P < 0.012$ ). There was no significant difference in other emotional regulation components between the groups ( $P > 0.05$ ).

**Conclusion:** Considering the role of beliefs and thoughts in the anxiety disorder, it is suggested that therapists consider schema therapy and ACT in psychological interventions, including cognitive emotion regulation, for this group of patients.

**Keywords:** Anxiety disorders, Cognition, Emotional regulation, Psychotherapy

## Background

Today, one of the most critical aspects of mental health is anxiety. Anxiety disorders are currently most prevalent in the category of mental disorders within a prevalence of 8.8-29% during life [1]. One of the types of anxiety disorders is health anxiety. Health anxiety is defined as a wide range of concerns that individuals may have about their health [2] and often experienced by patients under primary care [3]. Health anxiety is a broad cognitive disorder that is formed as a misconception about the symptoms and physical changes resulting from an individual's beliefs about illness or health [4].

Anxiety is a continuum of health, and mild anxiety is related to physical feelings. On the other hand, intense fears are associated with health and mental obsession with physical feelings [5]. Emotional mental images often reinforce these thoughts leading to the experience of severe health anxiety. Individuals experiencing severe health anxiety have

diagnostic criteria for anxiety disorder based on the Fifth Diagnostic and Statistical Manual of Mental Disorders [6].

Cognitive studies suggest that individuals with an anxiety disorder are more likely to interpret physical symptoms as health weakness or serious illness than nonsufferers [7]. They are more likely to believe that they are weak and unable to cope with stress. These individuals are more inclined to overestimate the possibility of getting a disease. They may have extensive knowledge only in the field of disease and not in other fields [8]. On the other hand, the methods of dealing with such stress, psychological anxieties, and work problems can to some extent facilitate the psychological condition of the workplace [9]. Researchers believe that the way a person evaluates cognition in case of dealing with an adverse event is very important. Individuals' mental health stems from a two-way interaction between the

use of certain types of cognitive emotion regulation strategies and correct assessment of stressful situations [10].

The general concept of cognitive emotion regulation refers to the cognitive model of manipulating the entry of emotion-calling information [11]. In other words, cognitive emotion regulation strategies refer to the way individuals think after experiencing a negative incident or traumatic event [12]. It also shows that when individuals are psychologically distressed, they have difficulty coping with stressful situations in life. Difficulty in the regulation of emotions means that it is hard or impossible to deal with or experience emotions. Difficulty in regulating emotions can manifest itself in the form of excessive aggravation or inactivation of emotions and causes individuals to experience ineffective methods, such as rumination, anxiety, overeating, or alcohol abuse, when faced with excitement [13].

In addition, in a study carried out by Jafari Nodoshan et al. [14], it was observed that divorced women with distressing experiences are at lower levels of emotion, adaptability, and mental health than married women without these experiences. It can be said that divorced women face many psychological, social, and emotional problems and harms. Furthermore, the combination of these pressures causes tension in various dimensions and makes it difficult to regulate their excitement [15].

Schema therapy is an innovative and integrated method developed by Yang et al. [16]. In the context of psychotherapy, a schema is considered an organizational factor that is essential for the perception of an individual's life experiences [17]. Among individuals with low levels of perceived fear, negative life changes have minimal effect on the pattern of subsequent negative emotional experiences. This condition has been explained among those with high levels of perceived fear through pessimistic cognitive assessment, which is useful in the exacerbation of subsequent negative emotions [18].

Another treatment that is effective in various studies is acceptance-based therapy. Acceptance and commitment therapy (ACT) is a new form of behavioral therapy based on the theory of relational framework [19]. This approach emphasizes the acceptance and desire to experience internal events in comparison to cognitive behavioral therapy. The ACT assumes that humans find many of their inner feelings, emotions, or thoughts annoying and are continually trying to change or get rid of these inner experiences [20-21].

Based on the evidence, there have been data in this regard to compare the efficacy of schema therapy and ACT to cognitive emotion regulation in

patients with an anxiety disorder.

## Objectives

This study aimed to compare the effectiveness of schema therapy and ACT in the components of cognitive emotion regulation among patients with an anxiety disorder for the identification of an effective treatment for each of the variables and provision of practical strategies to improve symptoms.

## Materials and Methods

This quasi-experimental study was carried out with a three-group pretest-posttest design. The study population included individuals referring to Bavar and Bamdad counseling centers located in Sari, Iran, in 2019. The subjects were assigned to two experimental groups (receiving schema therapy and ACT) and a control group (on the waiting list) after clinical interviews and diagnosis of anxiety disorder. The subjects attended twelve 90-minute sessions of schema therapy (Young, 1990) and eight 90-minute sessions of ACT (Band and Hayes, 2004). At the end of the training course, all the three groups were retested.

The sample size of this study was 15 subjects in each group according to the voluntary sampling method. The sampling method in this study was nonrandom sampling (i.e., targeted and voluntary sampling). Moreover, the present study was approved by the Ethics Committee of Sari Branch, Islamic Azad University, Sari, Iran, with the ethics code of IR.IAU.SARI.REC.1398.080.

The inclusion criteria of the current study sample were a diagnosis of anxiety disorder, age range of 25-50 years, no history of neuroleptics during the last trimester, no history of incurable physical diseases (e.g., cancer, multiple sclerosis, and Alzheimer's disease), no severe psychiatric illness (e.g., psychotic or similar), completed conscious consent to participate in the study, and not treated or undergone other psychological interventions during the study. The exclusion criteria was the absence of more than two sessions in the treatment course. In the present study, in order to observe professional ethics, the code of ethics was obtained from the Ethics Committee of Sari Branch, Islamic Azad University.

## Emotional Cognitive Regulation Questionnaire (Garnefsky and Craig, 2006)

This is an 18-item measurement tool for cognitive emotion regulation strategies in response to life-threatening and stressful events based on a 5-point Likert scale from 1 (never) to 5 (always) regarding nine scales of self-assessment, focus on catastrophe, positive refocus, positive re-evaluation, acceptance,

and refocus on planning. The minimum and maximum scores in each subscale are considered 2 and 10, respectively, and a higher score indicates an individual with higher use of that cognitive strategy [22]. Cognitive emotion adjustment strategies in the Emotional Cognitive Regulation Questionnaire are divided into two general categories of adaptive (i.e., compromised) and nonadaptive (i.e., uncompromising) strategies. Significant subscales are regarded as positive refocus, positive re-evaluation, acceptance, and refocus on planning. The data were analyzed through descriptive statistical methods, such as mean and standard deviation, and inferential statistics, including multivariate analysis of covariance and SPSS software (version 22). The Shapiro-Wilk test was used to test the assumption that the covariance test was normal, and the Levene's test was utilized to investigate the homogeneity of the variances. In addition, the significance level was considered 0.05.

## Results

Out of 45 subjects in this study, 6 and 39 participants were male and female, respectively. In addition, 7, 25, 11, and 2 individuals were reported with a diploma, bachelor's degrees, master's degrees, and PhD, respectively. Moreover, 30 and 15 subjects were employed and unemployed, respectively. The average age of the study participants was 35 years (Table 1).

The results of the Levene's test and Box test to test the similar assumption of group variances ( $P>0.05$ ) and homogeneity of the covariates ( $P>0.05$ ), respectively, indicated that the default validation for variance analysis was multivariate. The results of the analysis of variance demonstrated that the difference in the components of cognitive emotion regulation after therapeutic interventions was significant among the three groups ( $F=18.50$ ;  $P<0.0001$ ).

Table 2 tabulates that ACT is more effective than schema therapy in the reduction of blaming others

**Table 1.** Mean and standard deviation of cognitive emotion regulation components in two experimental and control groups in pretest and posttest

Group Indicator variable		Schema therapy		ACT		Control	
		Mean	SD	Mean	SD	Mean	SD
Blaming others	Pretest	11.87	3.20	12.47	2.72	11.33	2.49
	Posttest	11.07	2.89	9.27	1.38	11.53	2.87
Focus on catastrophe	Pretest	13.20	2.78	13.00	2.72	11.87	3.11
	Posttest	11.07	1.75	9.67	1.39	11.93	2.86
Vision disclosure	Pretest	12.33	2.66	11.87	2.32	10.93	2.40
	Posttest	11.20	2.56	11.40	1.76	10.87	2.29
Positive assessment	Pretest	12.13	2.72	11.47	2.94	11.60	2.13
	Posttest	13.33	2.19	13.33	1.79	11.87	2.06
Refocus on planning	Pretest	11.87	2.32	12.00	3.18	11.40	2.69
	Posttest	13.87	1.35	14.73	1.33	11.27	2.86
Positive refocus	Pretest	12.07	1.79	11.20	2.39	12.47	1.88
	Posttest	14.20	0.94	15.13	1.35	12.80	1.89
Rumination	Pretest	12.53	2.61	13.65	2.35	11.73	2.73
	Posttest	9.67	1.58	9.20	1.56	12.60	2.82
Acceptance	Pretest	11.80	2.75	11.87	2.50	11.53	2.23
	Posttest	11.40	2.50	10.80	1.93	12.07	2.78
Self-blame	Pretest	11.13	2.06	11.53	2.69	11.13	1.99
	Posttest	9.67	1.13	9.33	1.04	11.00	0.36

ACT: Acceptance and commitment therapy  
SD: Standard deviation

**Table 2.** Posttest results of Fisher's LSD

Component	Group		Mean difference	SD	P-value
Blaming others	Schema therapy	ACT	1.999*	0.462	0.0001
		Control	-0.756	0.471	0.118
	ACT	Control	-2.755*	0.510	0.0001
Focus on catastrophe	Schema therapy	ACT	1.397*	0.512	0.010
		Control	-1.299*	0.522	0.018
	ACT	Control	-2.696*	0.565	0.0001
Vision disclosure	Schema therapy	ACT	-0.657	0.492	0.191
		Control	-0.815	0.503	0.115
	ACT	Control	-0.158	0.543	0.774
Positive assessment	Schema therapy	ACT	-0.135	0.404	0.741
		Control	1.399*	0.412	0.002
	ACT	Control	1.534*	0.446	0.002
Refocus on planning	Schema therapy	ACT	-0.468	0.445	0.300
		Control	2.773*	0.454	0.0001
	ACT	Control	3.241*	0.491	0.0001
Positive refocus	Schema therapy	ACT	-1.189*	0.448	0.012
		Control	1.983*	0.457	0.0001
	ACT	Control	3.172*	0.494	0.0001

Table 1. Continued

Rumination	Schema therapy	ACT	0.570	0.576	0.329
		Control	-3.898*	0.587	0.0001
	ACT	Control	-4.468*	0.635	0.0001
		ACT	0.749	0.544	0.178
Acceptance	Schema therapy	Control	-0.682	0.556	0.228
		Control	-1.431*	0.600	0.023
Self-blame	Schema therapy	ACT	0.864	0.425	0.050
		Control	-0.705	0.434	0.114
	ACT	Control	-1.569*	0.469	0.002

ACT: Acceptance and commitment therapy

SD: Standard deviation

( $P < 0.0001$ ) and focus on catastrophe ( $P < 0.010$ ) and increase of positive refocus ( $P < 0.012$ ). There was no significant difference in other emotional regulation components between the groups ( $P > 0.05$ ).

## Discussion

The present study aimed to evaluate the effectiveness of schema therapy and ACT in the components of cognitive emotion regulation in patients with an anxiety disorder. The obtained results showed that both treatments had a significant effect on the components of cognitive emotion regulation. However, no significant difference was observed in terms of the effectiveness of the two treatments. However, the results of the present study can be nearly consistent with the findings of studies examining schema therapy or ACT with the variables, such as anxiety, depression, or cognitive beliefs. Therefore, the obtained results of the present study are in line with the findings of a study by Morvaridi et al. [23].

In explaining the obtained findings, it can be stated that the average scores of the components of cognitive regulation of pretest and posttest excitement were significantly different among the three studied groups; consequently, the performed intervention was effective. Grads and Barsky observed that more than 9% of patients admitted to medical centers experienced anxiety, with a reported prevalence of higher than 5% in the general population. In the aforementioned study, it was shown that individuals with an anxiety disorder try to be alert and sensitive to physical changes [24].

When an individual deliberately pays close attention to his/her body, his/her perception and emotions increase and many emotions, such as itching, coughing, or yawning, have a sickly distinction that can be made by the individual attracting the attention and reactions of others. Furthermore, Thomas et al. showed that individuals with an anxiety disorder were more likely to interpret physical symptoms as health weakness or serious illness and believe them than those with a

nonanxiety disorder. They are weak and unable to cope with stress and more inclined to overestimate the possibility of getting the disease. Individuals with an anxiety disorder may have extensive knowledge only in the field of a disease and not in other fields [24].

The results of the present study also confirmed the effect of schema therapy on the components of cognitive emotion regulation in patients with an anxiety disorder. In explaining this finding based on the schema therapy approach, it can be said that changing the initial maladaptive schemas following schema therapy changes the lifestyle, attitudes, and behaviors related to a healthy lifestyle in patients. In this regard, psychological schemas are useful in dealing with individuals in unexpected situations [19]. In explaining this finding based on the positivist psychology approach, it can be said that executive function training is possibly effective since the planning and purposefulness of which lead to the pursuit of goals and success in performance; this in turn by reducing perceived fear has a positive effect on hope [25].

Another result confirmed in the present study was the effect of ACT on the components of cognitive emotion regulation in patients with an anxiety disorder. In explaining this finding, it can be said that the experimental techniques of ACT allow patients to take a more efficient approach to the concerns related to the disease by stopping intellectual rumination associated with excessive reassurance and repeated check-ups. This makes individuals have a more realistic perception of the symptoms of the disease [26].

In addition, the results of the present study are consistent with the findings of a study by Shahsavani et al. [27]. Performance in dealing with hazardous problems ultimately increases the cognitive regulation of emotions [27]. Moreover, establishing good patterns of commitment to the above-mentioned values will create more psychological flexibility in the individual. With this description, it can be said that schema therapy and ACT are effective strategies in the psychological interventions of patients with an anxiety disorder.



## Conclusions

Considering the role of beliefs and thoughts in the anxiety disorder, it is suggested that therapists consider schema therapy and ACT in psychological interventions, including cognitive emotion regulation, in this group of patients.

## Compliance with ethical guidelines

All the ethical principles were considered in the present study. The participants were informed about the purpose of the study and implementation of stages. In addition, informed consent was obtained from all the study subjects. The participants were also assured of the confidentiality of their information. Moreover, the subjects were free to withdraw from the study at any time, and the results of the study would be available to them if desired.

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## Authors' contributions

Conceptualization (Oldouz Mokhtarnejad); Methodology (Bahram Mirzaian); Investigation (Bahram Mirzaian); Writing original draft (Ramezan Hassanzadeh); Writing, Reviewing, and Editing (all authors); Funding acquisition (all authors); Resources (all authors); Supervision (Bahram Mirzaian)

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## Conflicts of Interest

The authors declare that there is no conflict of interest.

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