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**EFFECTIVENESS OF GROUP TRAINING -ACCEPTANCE AND COMMITMENT  
THERAPY (ACT) - IN REDUCING THE SIGNS AND SYMPTOMS OF GENERALIZED  
ANXIETY DISORDER AND INCREASING THE MINDFULNESS**

**SHLIER KARIMI<sup>1</sup>, MAHMOOD GOUDARZI Ph.D<sup>\*2</sup>**

1. Department of Psychology, Kurdistan Science and Research branch, Islamic Azad University,  
Sanandaj, Iran

2\*.Department of Psychology, Sanandaj branch, Islamic Azad university, Sanandaj, Iran

**\*Corresponding author: [mg.sauc@gmail.com](mailto:mg.sauc@gmail.com)**

**ABSTRACT**

Background and Objective: Acceptance and commitment therapy is a behavioral therapy that uses skills of mindfulness, acceptance and cognitive defusion to increase psychological flexibility (Herbert and Forman, 2011). Generalized anxiety can affect a person's mindfulness and cognitive avoidance and influenced them reciprocally. The main purpose of this study was to evaluate the effectiveness of group training -Acceptance and Commitment Therapy (ACT) - in reducing the signs and symptoms of generalized anxiety disorder and increasing the mindfulness. Methods: This study is a quasi-experimental design (pretest - posttest with control group). In this study, 100 sophomore students of high-school girls who studied in high-schools of Marivan in academic year of 93-94, were selected for sampling. The instruments of the standardized Penn State Worry Questionnaire (PSWQ), Cognitive Avoidance Questionnaire (CAQ) of Sexton and Dugas and Five Facet Mindfulness Questionnaire (FFMQ) of Bauer et.,al. were used in this study. In the questionnaire of PSWQ, of those who got the score higher than 43, 40 students randomly assigned to experimental and control groups. The experimental group, during a two-month period, for 12 sessions, two sessions per week and each session lasting 45 minutes, were imposed to an independent variable (group training of acceptance and commitment therapy). To test the research hypotheses, covariance analysis and descriptive statistics were used.

Results: The results of covariance analysis on the pre-test and post-test scores showed that between the experienced groups – trained group by acceptance and commitment therapy- and controlled group there is a significant difference in generalized anxiety variable, cognitive avoidance and mindfulness.

Conclusion: Based on the findings of this research, we can conclude that group training of acceptance and commitment therapy in reducing generalized anxiety disorder and declining cognitive avoidance and mindfulness were effective upon sophomore high-school girls' students.

Limitation: One of the major limitations in doing of this study was schedule of group training for students. In some cases holding those sessions was interfering with school classes' time.

**Keywords: Acceptance and Commitment Therapy (ACT), Cognitive Avoidance, Generalized Anxiety Disorder, Mindfulness**

## **INTRODUCTION**

Generalized anxiety disorder is an anxiety disorder that used to describe by chronic, pervasive and uncontrollable worry but in contrary to popular perception, which shows the average performance level of damage in this disorder, this disorder or significant injury is associated with psycho-social functioning (Wittchen, *et al.* 1994), he seldom cures spontaneously (Yonkers, *et al.*, 1996). Generalized anxiety is a chronic anxiety state that is determined by excessive and uncontrollable worry and physical symptoms associated with it (James, Minka, and Holy, 2008). In the treatment of anxiety disorders, many treatments have been used such as medications and psychotherapy. In medications, in anti-anxiety medicines as long as the medicine continuous, it clearly reduces anxiety symptoms. However, because

recurrence is possible after stopping the taking of medicine, and since these medicines are somewhat addictive potential, therefore anti-anxiety medicines are not the perfect treatment (Rozenhan and Seligman, 2013).

Generalized anxiety can affect a person's mindfulness and cognitive avoidance and influenced them reciprocally. People with generalized anxiety usually have poor mindfulness and react involuntarily (Mojdehi, Etemadi and Falsafi-Nejad, 2011). Mindfulness helps us to understand this point that negative emotions may occur. But they are not fixed and permanent part of personality; it also allows the individual rather than to respond involuntarily and hurried to events, responds with thinking and thought (Emanuel *et al.*, 2010). Mindfulness

also is a form of meditation that originated in regulations and Eastern religion teachings for Buddha (Ost, 2008).

Nowadays, we faced with third-generation of therapies that can be called under the general title of acceptance-based models, such as cognitive therapy base on mindfulness, meta-cognitive therapy and acceptance and commitment therapy. In these treatments instead of cognitive changes, it has tried to increase the person's psychological relationship with himself/herself thoughts and sentiments (Hayes and Strosahl, 2010). ACT adopted a third and a whole new way. ACT based on a basic research program of functional flexibility on language and cognition that called the Relational Frame Theory (RFT), was created (Hoffman, 2001).

Acceptance and commitment therapy is a behavioral therapy that uses skills of mindfulness, acceptance and cognitive defusion to increase psychological flexibility (Herbert and Forman, 2011). Based on acceptance and commitment therapy, psychological flexibility is the ability of clients to communicate with their experience in the present and based on what is possible for them at that moment, choose to act in a manner that is consistent with their selected values (Hayes et al., 2010).

According to Hayes and his colleagues (2010), each process has communication and interaction with other processes and a total of 15 relationships exist between them. The lines inside the hexagon represent these relationships.

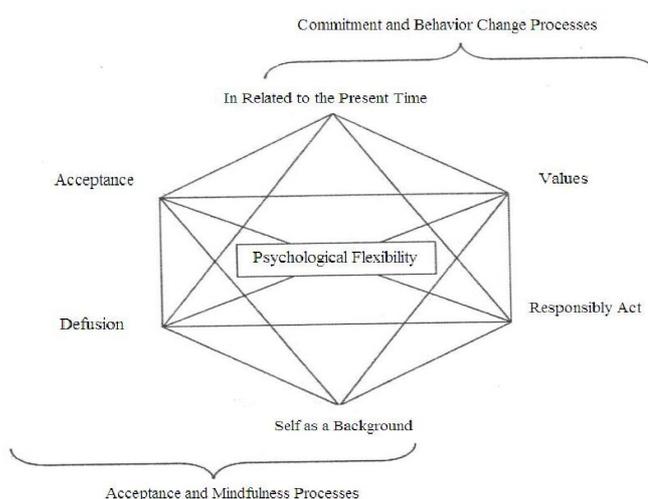


Figure 1: Six main processes of ACT (Cited in Hayes et al, 2010: p. 7)

ACT model suggests that life involves painful events, and trying to avoid the pain rather than eliminating it cause it to become more extensive (Hayes, 1999, pp. 62-60). Mindfulness exercises in ACT used to draw the attention of clients to the world, as it directly experienced and not as with what has made by their minds outcomes (Hayes et al., 2002). The efficiency of acceptance and commitment therapy in the treatment of generalized anxiety disorder has been approved during numerous studies (Mojdehi, Etemadi and Falsafi-Nejad, 2011).

Hashemi-Nasab (2014) in his research under the title of “The impact of Acceptance and Commitment Therapy (ACT) to reduce the symptoms of generalized anxiety disorder (GAD)”, illustrated that ACT reduces the symptoms of generalized anxiety disorder. Ossman and his colleagues (2006), in surviving the effect of group training in patients with social phobia, came to the conclusion that avoidance and anxiety symptoms in the treated group significantly decreased. Roemer and Orsillo (2007), also used acceptance and commitment to the treatment of GAD that had reported of anxiety, depression, fear and avoidant and clients showed significant decrease in clinical symptoms of GAD.

The studies’ results of Kiani and colleagues (2011), considered the effectiveness of group psychotherapy based on acceptance and commitment therapy on increasing the mindfulness of methamphetamine addicts. Recent research based on acceptance and commitment therapy has provided satisfactory results and logical reasons to use acceptance and commitment therapy in clinical work. The overall aim of this study is to evaluate the effectiveness of group training (acceptance and commitment therapy) in reducing the signs and symptoms of generalized anxiety disorder and increasing mindfulness. So, the main research question is that “Do interventions therapeutic approach (Acceptance and Commitment Therapy) effect on reducing the signs and symptoms of generalized anxiety disorder and increasing mindfulness?”

## **METHODOLOGY**

### **1. Research Method**

This research method in term of purpose is practical and in term of method is quasi-experimental design with pre-test and post-test with an equivalent control group.

### **2. Participants**

The study sample of this research included all sophomore high-school students in the city of Marivan (Kurdistan, Iran) in the

academic year of 93-94 who were studied in this city.

### 3. Sampling Method

By visiting schools and identifying girls students who have signs and symptoms of generalized anxiety disorder or mindfulness, by using available sampling method, 100 sophomore high-school students were selected. Then PSWQ was administered and among those who got the score higher than 43, 40 were selected by available sampling method and divided into two equal groups: control (n = 20) and experimental (n = 20).

### 4. Instruments

To collect research data the standardized Penn State Worry Questionnaire (PSWQ), Cognitive Avoidance Questionnaire (CAQ) of Sexton and Dugas and Five Facet Mindfulness Questionnaire (FFMQ) were used.

#### a) The standardized Penn State Worry Questionnaire (PSWQ)

To measure the variables of anxiety disorder and worry, the standardized Penn State Worry Questionnaire (PSWQ) is used. This is the most important instrument for evaluate the excessive and uncontrollable worry of people. This questionnaire consists of 11 negative items and 5 positive items. The scale of responding to questions is

Likert 5-point scale, 1 to 5 marks allocated to each questions and the total questionnaire scores are between 16 and 80. The questionnaire internal consistencies coefficient between the groups of clinical and normal was high and the 88% to 95% have been reported (Dehshiri, 2012).

#### b) The Five Facet Mindfulness Questionnaire (FFMQ)

To measure the variable of mindfulness, the Five Facet Mindfulness Questionnaire (FFMQ) is used. 39-item self evaluation scale is made by Bauer et.,al. in 2006. This questionnaire contained 112 items and 5 components; based on results from 4 of the 5 factors were comparable with identified factors in KIMS and the 5<sup>th</sup> factor includes items such FMI and the MQ that was defined entitled non-reactive mode to internal experience, and obtained factors were named such as: observation, act combined with vigilance, being non-judgmental to inner experience, description and non-responsiveness. Observation factor includes attention to internal and external stimulus like: sentiments, cognitions, emotions, sounds and smells. In the study of Bauer and colleagues (2006) on various samples of students, internal consistency of factors was good and alpha coefficient ranged between 0.75 (the non-response

factor) and 0.95 (the description-factor). The correlation between the 5 factors of questionnaire, ranged from moderate to strong. In a study upon 435 Iranian students, the results showed a good reliability (alpha coefficient between 0.55 - 0.83) and appropriated validity of five facet mindfulness questionnaire (Ahmadvand, Heydari-Nassab, and Shaieri, 2013 ).

**c) The Cognitive Avoidance Questionnaire (CAQ)**

To measure the respondents' avoidance, the Cognitive Avoidance Questionnaire (CAQ) of Sexton and Dugas is used. This questionnaire by Sexton and Dugas (2004) (quoted from Dugas and Robichaud, 2007) has been prepared for the efficacy of cognitive avoidance. This questionnaire in the form of 25 items, measures five cognitive strategies which include: (1) Repression of worrying thought, (2) Substitute positive thoughts instead of worrying thoughts, (3) Use attention direction to stop the worrying process, (4) Avoid situations and activities that activate worrying thoughts, change images thoughts to verbal thoughts. It is a Likert-type response spectrum. In the study of

Hamidpour and his colleagues, Cronbach's alpha coefficient was 0.86 (quoted from Alilou, 2010). Cronbach's alpha reliability of this scale in all subjects was equal to the total score of cognitive avoidance of 0.91 and respectively for subscale of thought suppression 0.90, thought substitution of 0.71, distraction of 0.89, threatening stimuli avoidance of 0.90 and for converting ideas into thoughts is 0.84 (quoted from Alilou, 2010). Test reliability by correlation with white bear suppression inventory was 0.48 (Bassak-nejad *et al.*, 2010).

**5. Procedure**

The procedure is considered by the way that after selecting subjects and replacing them in two experimental and control groups, and running the pretest, the experimental group during a two-month period, for 12 sessions-two sessions per week and each session lasting 45 minutes-were imposed to an independent variable (group training of acceptance and commitment therapy).

**6. Treatment**

Treatment protocol of group training sessions (ACT) (acceptance and commitment therapy)

Sessions	Subject
First	Introducing the therapist and group members, meditation practice, breathing exercises
Second	Acceptance practice of thoughts and sentiments, enhancing practice of the quality of life, exercise, breathing exercises
Third	Gravestone: a training to improve living standards, breathing exercises

4 <sup>th</sup> and 5 <sup>th</sup>	Acceptance practice of anxiety, breathing exercises, valuable routes, sanitation / care of your health.
6 <sup>th</sup> to 12 <sup>th</sup>	Sentiment illusion report, sentiment practice report, critical moments form, exercise to improve the quality of life, breathing exercises

**DATA ANALYSIS AND FINDINGS**

To analyze the data, descriptive and inferential statistics will be used. In descriptive statistics, indicators of frequency distribution table, percentage, mean and standard deviation were used and in the inferential statistics, univariate ANCOVA (analysis of covariance) was used. Also, in order to analyze the data, the software of SPSS v20 was used.

As illustrated in Table: 1, the mean score of generalized anxiety disorder of control group in pre-test is 47.6, cognitive avoidance of 76.7 and mindfulness of 84.8 which is higher than subjects' average score and mean score in the post-test for generalized anxiety disorder is 46.9, cognitive avoidance of 76.1 and mindfulness of 86.6, but the mean score of generalized anxiety disorder of experiment group in pre-test is 48.4, cognitive avoidance of 77.3 and

mindfulness of 85.1 that the mean score in the post-test for generalized anxiety disorder is 41.7, cognitive avoidance of 67.5 and mindfulness of 99.3 and has a significantly reduction. The amount of generalized anxiety disorder in experienced group decreased after administrating the training course of acceptance and commitment therapy, and likewise cognitive avoidance and mindfulness increased.

Hypothesis 1: ACT of group training affects on the symptoms of generalized anxiety disorder.

As seen in Table 2, the interaction of group and anxiety in pre-test is not significant. In other words, data support the hypothesis of regression slopes homogeneity (P=0.578, F=0.316). Therefore, in order to check that hypothesis, covariance analysis was used and the results are presented in Table 3.

**Table 1: Descriptive Indicators of Generalized Anxiety Disorder, Cognitive Avoidance and Mindfulness Variables in the Pre-Test and Post Test of Control and Experienced Groups**

Variable	Group	Pre-Test		Post-Test	
		Mean	Std. Deviation	Mean	Std. Deviation
Generalized Anxiety Disorder	Control	47.6	7.65	46.9	7.1
	Experiment	48.4	7.98	41.7	7.36
Cognitive Avoidance	Control	76.7	4.89	76.1	5.3
	Experiment	77.3	5.7	67.5	5.9
Mindfulness	Control	84.8	12.26	86.6	11.3
	Experiment	85.1	13.1	99.3	12.9

**Table 2: The Results Report of Homogeneity Regression Slope Hypothesis Testing**

Variables	Sum of Squares	df	Mean squares	f	Sig.
Group	0.872	1	0.872	0.179	0.675
Pre-test	369.481	1	369.481	75.857	0.142
Group * pre-test	1.539	1	1.539	0.316	0.578

Error	175.347	36	4.871		
Total	837363.000	40			

Table 3: Covariance Analysis of the Effect of ACT Group Training on Reducing Symptoms of Students' Generalized Anxiety

Variable	Changes Source	Sum of Squares	df	Mean squares	f	Sig.
Generalized Anxiety Disorder	Test Factor	1724	1	1724	330.36	0.000
	Test Factors * Groups	447	17	26.3	5.04	0.000
	Error	109	21	5.2		

As can be seen in Table 3, after doing the equality of pre-test scores, there is a significant difference between the experimental and control groups. Therefore, the absence of difference between the two groups as a null hypothesis of study is rejected. In other words, training of acceptance and commitment therapy affects on reducing generalized anxiety disorder among girls students of high-school and this effect is significant.

Hypothesis 2: ACT of group training causes reducing of cognitive avoidance.

As seen in Table 4, the interaction of group and cognitive avoidance in pre-test is not significant. In other words, data support the hypothesis of regression slopes homogeneity ( $P=0.230$ ,  $F=10.92$ ). Therefore, in order to check that hypothesis, covariance analysis was used and the results are presented in Table 5.

Table 5: Covariance Analysis of the Effect of ACT Group Training on Reducing Cognitive.

As can be seen in Table 5, after doing the equality of pre-test scores, there is a

significant difference between the experimental and control groups. Therefore, the absence of difference between the two groups as a null hypothesis of study is rejected. In other words, training of acceptance and commitment therapy affects on reducing cognitive avoidance among girls students of high-school and this effect is significant.

Hypothesis 3: ACT of group training is effective in increasing mindfulness.

As seen in Table 6, the interaction of group and mindfulness in pre-test is not significant. In other words, data support the hypothesis of regression slopes homogeneity ( $P=0.542$ ,  $F=9.029$ ). Therefore, in order to check that hypothesis, covariance analysis was used and the results are presented in Table 7.

As can be seen in Table 7, after doing the equality of pre-test scores, there is a significant difference between the experimental and control groups. Therefore, the absence of difference between the two groups as a null hypothesis of study is rejected. In other words, training of

acceptance and commitment therapy affects students of high-school and this effect is on increasing mindfulness among girls significant.

**Table 4: The Results Report of Homogeneity Regression Slope Hypothesis Testing**

Variables	Sum of Squares	df	Mean squares	f	Sig.
Group	133.868	1	133.868	16.594	0.223
Pre-test	485.197	1	485.197	60.145	0.135
Group * pre-test	88.097	1	88.097	10.921	0.230
Error	290.415	36	8.067		
Total	279782.000	40			

**Avoidance**

Variable	Changes Source	Sum of Squares	df	Mean squares	f	Sig.
Cognitive Avoidance	Test Factor	894	1	984	76	0.000
	Test Factors * Groups	647	24	26	3.9	0.046
	Error	163	14	11.7		

**Table 6: The Results Report of Homogeneity Regression Slope Hypothesis Testing**

Variables	Sum of Squares	df	Mean squares	f	Sig.
Group	2114.086	1	2114.086	11.882	0.466
Pre-test	2133.619	1	2133.619	23.232	0.539
Group * pre-test	1606.513	1	1606.513	9.029	0.542
Error	6405.480	36	177.930		
Total	473407.000	40			

**Table 7: Covariance Analysis of the Effect of ACT Group Training on Increasing Mindfulness**

Variable	Changes Source	Sum of Squares	df	Mean squares	f	Sig.
Mindfulness	Test Factor	4196	1	4196	33.5	0.000
	Test Factors * Groups	11501	25	460	3.68	0.009
	Error	1627	13	125		

**RESULTS AND DISCUSSION**

In order to assess this hypothesis which group training of ACT (acceptance and commitment therapy) has effect on reducing the signs and symptoms of generalized anxiety disorder and increasing mindfulness, ANCOVA analysis of covariance was used. The test results showed that group training of ACT (acceptance and commitment therapy) had a positive effect on reducing the signs and symptoms of generalized anxiety disorder and increasing mindfulness in sophomore girls' students of high-school.

The results of research are in line with Hashemi-Nasab (2014) and his research under the title of "The impact of Acceptance and Commitment Therapy (ACT) to reduce the symptoms of generalized anxiety disorder (GAD)", Kiani et al.,, (2011) in research of "group training based acceptance and commitment therapy on methamphetamine addicts' mindfulness", Roemer and Orsillo (2007) in research of "acceptance and commitment training on cognitive avoidance" and Petersen (2007) in his research under the title of "Acceptance and commitment therapy with current treatments

with focus on avoidance behavior". The results studies of Kiani and colleagues (2011), considered the effectiveness of group psychotherapy based on acceptance and commitment therapy on increasing the mindfulness of methamphetamine addicts. Ossman and his colleagues (2006), in surviving the effect of group training in patients with social phobia, came to the conclusion that avoidance and anxiety symptoms in the treated group significantly decreased. Roemer and Orsillo (2007), also used acceptance and commitment to the treatment of GAD that had reports of anxiety, depression, fear and avoidant and clients showed significant decrease in clinical symptoms of GAD. Dehshiri (2012) in his study showed that cognitive behavioral therapy significantly reduces subjects' anxiety with generalized anxiety disorder and also Pur-Faraj (2011), in his study on students of Amol Institute of Higher Education has found that acceptance and commitment group therapy had a significant impact on social-phobia reduction.

In explaining the current findings we can say that acceptance and commitment therapy, is a behavioral therapy that use mindfulness, acceptance and cognitive defusion to increase psychological flexibility. In the treatment of cognitive flexibility, ACT

is to increase the ability of clients to communicate with their experience in the present and the possibility of what is possible for them at that moment, they act in a manner that is consistent with the chosen values of themselves.

In this therapy, practice the techniques of behavioral commitment with defusion and acceptance, and also detailed discussions about values and goals of the individual and the need to specify values, all lead to a decrease in the severity of depression and anxiety in individuals. Although cognitive therapists by using a number of cognitive-behavioral strategies caused a change in the structure of their cognitive functions, but the aim of acceptance and commitment therapy is increasing full acceptance of a wide range of concrete experiences that includes confusion, thoughts, beliefs, sentiments and sensory-physical perceptions and ultimately leads person to improve the quality of his life.

As well, it can be said that acceptance and commitment therapy creates a self-observing in human and do it by defusion processes and mindfulness. The great advantage of this self-observing is that it considered as a setting that the content of consciousness is not threatening. In other words, it provides acceptance as a setting.

ACT interventions in this area help clients to directly experience the qualitative aspects of this self as a setting.

In the model of acceptance and commitment therapy, experiential avoidance removing are not necessarily the clients' aim, the aim is to help client to discover and clarify its value and to some extent in this case is discussed that avoiding from frightening situations may interfere with the movement towards values. Acceptance help the client that choose the activities that are in line whit his values and quit the control strategies. In the acceptance and commitment therapy, setting goals and values clarification are considered important. Values are presented as a way of life. Goals and values are client's own choices. Finally, because increasing attention and awareness toward thoughts, emotions and practical orientation are from the positive aspects of acceptance and commitment and will coordinate the adaptive behaviors and positive psychological state, even improving the individual's ability to individual and social activities and involved the interest in these activities (Bond and Hayes, 2004). So training based on acceptance and commitment therapy caused increasing the ability of mindfulness. ACT training to learners ledtheir mindfulness that is actually

one of the components of training based on acceptance, to be increased.

In explaining the findings, it can be said that effective communication, open and non-defense to present time have two characteristics: first, the client had been thought that pay attention and see to what has is his environment and internal experience and that client trained to describe what exists without judgment or evaluation. Mindfulness exercises in ACT used to draw the attention of clients to the world, as it directly experienced and not as with what has made by their minds outcomes (Hayes et al., 2002). Due to the impact of group training based on acceptance and commitment therapy in reducing individuals' anxiety, it is suggested that the school counseling in cooperation with state welfare organization do these courses for students. According to devastating impact of anxiety in the lives of students, especially teenagers and young adults, using the findings of this study can provide joy and happiness among students in school. The results of this research can be used by educational institutions and specially counselors and teachers.

This research was an attempt to evaluate the effectiveness of group training ACT (Acceptance and Commitment Therapy) in reducing the signs and symptoms

of generalized anxiety disorder and increasing the mindfulness. It is recommended to examine its efficacy in other diseases as well. One of demographic variable which could be adjusted is age. It would be useful to divide the study in various age ranges such as children, teens, or adults. The results would perhaps be varying. The same study could be carried out among both genders, because this study was conducted only on school girls and sex are not included in it. It is also recommended the further study consummate with more numbers of participants. This study was limited to reducing the signs and symptoms of generalized anxiety disorder and increasing the mindfulness only. Similar research could also be done with focus on other disorders

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