



## Effectiveness of Acceptance and Commitment Therapy on the Mental Health and Rumination of Mothers of Children with Neurodevelopmental Disorders

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### Abstract

**Introduction:** Acceptance and commitment therapy is one of the third-generation behavioral therapies in the field of mental health. The purpose of this study was to investigate the effectiveness of acceptance and commitment therapy on mental health and rumination of mothers of children with neurodevelopmental disorders.

**Method:** The method of this research was a semi-experimental pre-test-post-test type with a control group and a 1-month follow-up. The statistical population included all mothers with children with special needs in Hamedan city, of which 14 participants were randomly selected and randomly divided into 2 intervention and control groups. Psychological evaluation included an interview with a clinical psychologist and the completion of Beck's anxiety and depression questionnaires and rumination response scale. The indicators of anxiety, depression and rumination were collected at three points before the intervention sessions, after the intervention and 1 month follow-up after the end of the sessions. The data were analyzed using mixed variance analysis method and SPSS version 23 software.

**Findings:** The findings showed that the indices of anxiety, depression and rumination decreased significantly after the intervention in the way of acceptance and commitment and during the follow-up period. Therefore, acceptance and commitment therapy has been effective in treating anxiety, depression and rumination in mothers of children with children with neurodevelopmental disorders. In addition, the effects of acceptance and commitment therapy were more stable according to the follow-up period in all indicators of anxiety, depression and rumination.

**Conclusion:** The results emphasize the importance of using these interventions in the mental health and rumination of mothers of children with effective neurodevelopmental disorders and providing a new horizon in the clinical interventions.

**Keywords:** Anxiety; Acceptance and Commitment; Depression; Mental Health; Rumination; Special Needs

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## Introduction:

Although having a child gives a mother a sense of pleasure, pride and personal growth, it also creates challenges (1). So that these parents have a higher level of anxiety and depression than people who do not have children (2). In our society, for reasons such as more opportunities, mothers participate more than fathers in matters related to their children, and as a result, they interact more with their children and have endured a lot of stress (3). In addition, mothers of children with special needs experience more stress than mothers of normal children (4) and the increase in parenting stress affects the ability of parents to take care of children, which is associated with negative consequences for the child (5). Mood disorders are a group of clinical disorders characterized by a loss of control and a person suffering tremendously (6) and is on a continuum that includes normal mood swings (7). The World Health Organization has estimated that mood disorders are at the top of the list of mental illnesses and account for about 25% of the clients to health centers in the world (8).

Anxiety disorders are one of the most common psychiatric disorders in the general population (9). According to the World Health Organization, about 100 million Europeans (8) and 19 million Americans suffer from this disorder, and the prevalence of this disorder in women is twice that of men (10). Having a child with special needs causes anxiety, especially for the mother, and the parents of children with developmental disabilities suffer a lot of stress (11). Children experience disorders, feelings of worthlessness and guilt, impaired physical performance and fatigue (12). Mothers of children with problems have reported more anxiety and stress than fathers, the possible reason for this is that mothers are more involved with children's problems and are under more pressure (13).

Depression often starts from a situation where very big changes happen in a person's life and a person is forced to give up important people or important issues related to his life such as work and home (14). Research has shown that there is a positive relationship between the occurrence of negative stress and the onset of depression, and about 20 to 50 percent of people who experience severe stress become depressed (15).

According to the above, depressive disorder is one of the types of emotional disorders in which rumination is one of the diagnostic symptoms of this disease (16). In recent years, the study of thought patterns in emotional disorders and the study of unwanted thoughts and their role in the persistence of emotional disorders have attracted the attention of researchers. It has been placed a lot. One of the types of unwanted thoughts in emotional disorders is rumination. The metacognitive perspective of emotional disorders considers rumination as one of the main components in the onset and continuation of depression (17).

Rumination is known as a constant preoccupation with a thought or topic and thinking about it. These thoughts are passive, have a repetitive aspect and are focused on the symptoms and the results of the symptoms, and they hinder the solution of the problem adaptively, leading to an increase in negative thoughts (18). Although thought suppression is a common pattern in depressive disorder, there are some depressed people who ruminate on negative thoughts on purpose. These people usually believe that rumination about negative thoughts and negative emotions can give them insight and facilitate problem solving, if rumination worsens the mood, it causes the person to oscillate between thought suppression and rumination (19).

For the treatment of mood disorders, in addition to drug treatments, several psychological treatments have been invented over the years, which target their function instead of changing the form, frequency or situational sensitivity of cognitions and emotions. Therapy based on acceptance

and commitment openly accepts this approach (changing the function of thoughts and feelings instead of changing their form, content or frequency) and is rooted in a philosophical theory called functional conceptualism and is based on a research program about language and It is recognized that the theory is called the framework of mental relations and has six central processes that lead to psychological flexibility. These six processes are: acceptance, self-deception, context, connection with the present, values and committed action (20).

One of the key processes of this treatment is cognitive distortion, which consists of adjusting the verbal contexts, so that the believability of the person's thoughts is reduced and the tendency to respond to them is also reduced, while reducing their frequency or changing their form is not necessary. Treatment interventions based on acceptance and commitment have shown a significant increase in the tendency to participate in difficult activities while experiencing difficult emotions (21). The central processes of therapy based on acceptance and commitment teach people how to stop inhibiting thoughts, how not to mix with disturbing thoughts and make the person tolerate unpleasant emotions more (22).

Since no research has been done on the quality of life of this group of mothers in Iran, such research is necessary to determine the number of damages and possible damaged areas so that planning can be done according to the obtained information. It was suitable for this group of people. The main purpose of this research was to investigate the effectiveness of acceptance and commitment therapy on the mental health and rumination of mothers of children with children with neurodevelopmental disorders.

### **Research Method:**

The method of this research was a semi-experimental pre-test-post-test type with a control group and a 1-month follow-up. The statistical population of this research included all mothers with children with neurodevelopmental disorders in Hamadan city who were admitted to welfare centers. The sample group was selected as available from among the statistical population. Considering the problems related to the drop of clients and their continuous lack of cooperation, finally a sample group of 16 people was selected and randomly divided into 2 intervention and control groups.

The inclusion criteria were: 1- Having diagnostic criteria for incurable disorders in children; 2- At least diploma education; 3- age range 25-37 years; 4- Not receiving psychological treatment at the same time with the aim of treating anxiety disorder, depression.

The method of conducting the research was as follows: first, an initial interview was conducted with the qualified subjects. After explaining the purpose and necessity of the research and obtaining the implicit consent of the clients, the criteria for participating in the study were checked. When the number of subjects reached the quorum to conduct the study, the remaining people were randomly divided into two groups of 7 people. The experimental group underwent an intervention based on acceptance and commitment therapy for 8 sessions of 45 minutes. The control group did not receive any treatment. The pre-tests were performed before the intervention for two groups, and a week after the end of the sessions, the post-test was also performed. Finally, after a 1-month follow-up period, the tests were performed again on two groups.

Data were analyzed using mixed variance analysis method and SPSS version 23 software.

The following tools were used to collect data:

**Beck Depression Questionnaire (Second Edition):** It is one of the most appropriate tools to reflect depression. This questionnaire has 21 items that measure the physical, behavioral and

cognitive symptoms of depression. Each item has 4 options that determine different degrees of depression from mild to severe (23). This questionnaire measures the psychological characteristics of depression rather than physical and physiological discomforts and has a 75% correlation with Hamilton's questionnaire. The 21 items of the Beck depression questionnaire are classified into 3 groups: emotional symptoms, cognitive symptoms, and physical symptoms. The meta-analysis results of the Beck depression questionnaire indicate that its internal consistency coefficient is between 73% and 93% with an average of 86%, and the alpha coefficient for the patient group is 86% and the non-patient group is 81%. In a study on students of Tehran University and Allameh Tabatabai University, which was conducted to check the reliability and validity of the second edition of the Degus Beck questionnaire on the Iranian population, the results showed that Cronbach's alpha was 78% and the retest reliability after two weeks was 73% (24)..

**Beck's Anxiety Questionnaire (BAQ):** Beck's anxiety test was created in 1988. This test includes 21 signs and symptoms of anxiety. The subject must answer these items. severe, moderate, mild, never, so that these options are scored as 0 1 2 3 respectively. In this test, a score of 0 to 23 is a sign of mild anxiety, a score of 24 to 28 is a sign of moderate anxiety, and a score above 29 is a sign of morbid anxiety. Beck's anxiety test in Iran was translated into Farsi by Lotfian. The correlation coefficient of this test with physiological components is 0.89 (25).

**Ruminative Response Scale:** This scale was compiled by Nolen-Hoksim and Morrow, which is a 22-item scale and its items are scored on a 4-point scale from 1 to 4 and ranges from 22 to 88 (26). Using Cronbach's alpha, this scale ranges from 88% to 92%, which indicates its high internal consistency (27), intraclass correlation for five times of measurement is 75% and retest correlation for a period of more than 12 months, 67% of the report. has been (28). Cronbach's alpha in the Iranian sample is 90% (29) and the retest reliability coefficient with a time interval of 3 weeks is 83% (30).

### Findings:

A total of 14 subjects were examined, whose characteristics were examined in terms of education, age range, and employment status. According to the studied data, it was observed that in terms of education, the highest frequency in the study group is in the post-graduate level and the lowest frequency in the experimental group is related to the post-graduate level and in the control group is related to the diploma level, the average age of the participants is 25 It was 37 years old, and the average in the experimental group was  $27.72 \pm 2.52$  years and in the control group it was  $29.09 \pm 2.91$  years. And in terms of job status in both groups, the highest frequency was related to housewives. In this research, descriptive statistics methods were used, including the frequency test of the mean and standard deviation of anxiety, depression and rumination components in the pre-test, post-test and follow-up stages (Table 1).

**Table 1.** Mean and Standard Deviation of Anxiety, Depression and Rumination Components in the pre-test, post-test and follow-up Stages

	Experimental Group						Control Group					
	Pre-test		post-test		follow-up		Pre-test		post-test		follow-up	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<b>Depression</b>	16.86	5.98	7.69	4.37	7.72	4.95	15.79	3.83	14.93	3.05	15.03	<b>3.41</b>
<b>Anxiety</b>	21.26	6.74	13.37	5.82	13.63	5.93	20.74	4.84	20.26	4.17	21.81	<b>3.85</b>
<b>Rumination</b>	63.37	5.49	51.73	6.18	50.26	6.02	62.94	5.23	61.73	5.95	60.95	<b>6.37</b>

The information in Table 2 shows that anxiety, depression, and rumination in the experimental group decreased after the intervention and training on acceptance and therapeutic commitment,

and the changes remained relatively constant in the follow-up phase compared to the post-test phase one month after the treatment. But these conditions were almost the same for the control group and there was no change. In any case, deducing significant differences in these variables requires the use of appropriate tests.

Therefore, mixed analysis of variance test was used to infer the data. Examining the presuppositions of mixed variance analysis showed that the presupposition of equality of variances for the variables of anxiety, depression and rumination was fulfilled, and the presupposition of proportionality of covariance's for different stages of measurement with a single matrix for the variables was not fulfilled. However, due to the equal number of two groups, it is not necessary to fully observe the assumptions and therefore it is possible to use mixed variance analysis.

The results of mixed variance analysis to evaluate the effectiveness of the research intervention on anxiety, depression and rumination scores in the three stages of pre-test, post-test and follow-up are presented in Table 2.

**Table 2.** The Results of Mixed Variance Analysis to Investigate the Effectiveness of the Research Intervention on Anxiety scores in the three stages of pre-test, post-test and follow-up

Sources	Sum of squares	df	Mean Square	F	Sig	Eta squared	Statistical power
Test	89.04	2	44.52	13.71	0.000	51	0.97
Group x test	62.37	2	21.185	8.27	0.000	37	0.90
error	94.94	18	5.28				

As can be seen in Table 2, the difference between the two experimental and control groups is significant in the three stages of pre-test, post-test and follow-up in the variable of anxiety. Therefore, according to the results of Table 1, it can be said that the research intervention has led to a significant reduction of anxiety in the experimental group compared to the control group.

The results of the mixed variance analysis to evaluate the effectiveness of the research intervention on depression scores in the three stages of pre-test, post-test and follow-up are presented in Table 4.

**Table 3.** The Results of the Mixed Variance Analysis to Investigate the Effectiveness of the Research Intervention on Depression Scores in the three stages of pre-test, post-test and follow-up

Sources	Sum of squares	df	Mean Square	F	Sig	Eta squared	Statistical power
Test	117.85	2	58.93	35.10	0.000	0.76	0.94
Group x test	96.38	2	48.19	29.57	0.000	0.70	0.85
error	41.71	18	2.32				

As can be seen in Table 3, the difference between the two experimental and control groups is significant in the three stages of pre-test, post-test and follow-up in the variable of anxiety. Therefore, according to the results of Table 1, it can be said that the research intervention has led to a significant reduction of anxiety in the experimental group compared to the control group. The results of the mixed variance analysis to evaluate the effectiveness of the research intervention on rumination scores in the three stages of pre-test, post-test and follow-up are presented in Table 4.



**Table 4.** The Results of Mixed Variance Analysis to investigate the Effectiveness of the Research intervention on Rumination scores in the three stages of pre-test, post-test and follow-up

Sources	Sum of squares	df	Mean Square	F	Sig	Eta squared	Statistical power
Test	127.97	2	63.96	38.95	0.000	0.84	0.99
Group x test	101.47	2	50.74	30.16	0.000	0.79	0.95
error	83.73	18	4.66				

As can be seen in Table 4, the difference between the two experimental and control groups is significant in the three stages of pre-test, post-test and follow-up in the variable of anxiety. Therefore, according to the results of Table 1, it can be said that the research intervention has led to a significant reduction of anxiety in the experimental group compared to the control group.

### Discussion and Conclusion:

The findings indicate that at the end of the treatment, the depression, anxiety and avoidance scores of the intervention group were significantly reduced compared to the control group. This result shows the effectiveness of acceptance and commitment therapy on the treatment of anxiety, depression and rumination in mothers of children with neurodevelopmental disorders.

Looking at past researches in the last two decades, among the new treatments for generalized anxiety disorder, acceptance and commitment therapy is most compatible with the anxiety characteristics of generalized anxiety disorder. Also, the effectiveness of acceptance and commitment therapy on various mental health problems and some chronic diseases such as depression, psychosis, substance abuse and dependence, social anxiety, burnout and chronic pain has been observed. The acceptance and commitment therapy approach is a behavioral therapy that uses the skills of mindfulness, acceptance and cognitive dissonance to increase psychological flexibility. In the treatment of acceptance and commitment, cognitive flexibility means increasing the client's ability to connect with their experience in the present and based on what is possible for them at that moment, to want to act in ways that are consistent with their chosen values (31).

The results confirm the results obtained in the research of Ismail Panah Amlashi and his colleagues regarding the effect of acceptance and commitment on reducing obsession, depression and anxiety. In this research, there was a significant reduction in the frequency of obsessive actions, the intensity of obsessive symptoms, the amount of belief in obsessive thoughts, anxiety, and the need to respond to them, as well as a decrease in depression and anxiety scores in the measurement of acceptance and commitment after the treatment. It continued even after the treatment (32).

In another research that was conducted using two traditional cognitive-behavioral therapies and acceptance and commitment therapy on end-stage cancer patients, during the acceptance and commitment therapy session, the patients had a significantly greater reduction in depression, discomfort and anxiety than the cognitive therapy patients. - They showed traditional behavior (33).

In explaining these results, it can be said that in this treatment, the exercises of examining the inner and outer world in the treatment, creating a desire to leave the ineffective program, changing and understanding the issue of controlling the problem, introducing an alternative for control, identifying people's values, clarifying values, clarifying goals, clarifying actions and clarifying the

obstacles, examining the values of each person, deepening the previous concepts, understanding mixing and breaking and doing exercises for breaking, understanding mixing with the conceptualized self, teaching how to break from it, awareness and emphasizing to be in the present and examining the life story and Committed action as well as detailed discussions about individual values and goals and the need to clarify values all led to a reduction in the intensity of anxiety, depression and rumination of mothers of children with neurodevelopmental disorders.

In this therapy, the goal of emphasizing people's tendency towards internal experiences was to help them to experience their disturbing thoughts as just a thought and to become aware of the dysfunctional nature of their current program and to act instead of responding to it. Pay what is important to them in life and in line with their values. Here, by substituting themselves as the background, clients were able to experience unpleasant internal events in the present tense easily and were able to separate themselves from unpleasant reactions, memories and thoughts. In fact, the goal was to increase the psychological flexibility of these people. This approach, as the statistical results showed, led to a significant reduction in depression, anxiety and rumination. In fact, the central processes of acceptance and commitment therapy taught people how to let go of thought inhibition, to get rid of disturbing thoughts; Strengthen the observing self instead of the conceptualized self, accept internal events instead of controlling them, clarify their values and address them. In this treatment, people learn to accept their feelings until they distance themselves from them and pay more attention to their thoughts and thought processes and connect them to goal-oriented activities. In short, acceptance and commitment therapy tries to teach people to experience their thoughts and feelings; Instead of trying to stop them, people are asked to work towards their goals and values and to experience their thoughts and feelings (51).

By using this treatment, it is possible to reduce the psychological problems of mothers of children with neurodevelopmental disorders, including their depression and anxiety, and reduce experiential avoidance in these people, which ultimately results in increased life expectancy. Adapting to the conditions of the disease, better relationships with the people around you, and reducing problems related to depression and anxiety, including suicide, will include psychomotor slowness.

### **Research limitations:**

Among the limitations of this research were the lack of enough time to follow up the results of the treatment, the lack of examination of the fathers of children with special needs, the absence of examination of the families of these people, the small size of the studied sample, and the failure to consider other problems and crises in the lives of these families.

### **Research applications:**

It is suggested that the research should be re-tested on larger groups and fathers' groups in order to estimate the validity of this method with more confidence. Also, it is better to compare this method with other treatment methods and examine the continuation of its therapeutic effect in a longer follow-up period. In addition, it is suggested that this treatment be done individually and also in hospitals with special needs; Because this issue was one of the limitations of this research; Because considering this point, it was not possible for the subjects to attend the treatment sessions. Considering the effectiveness of this treatment on the anxiety and depression of mothers of children with neurodevelopmental disorders, the importance of using this treatment method is also emphasized in the case of people with other special diseases.

### Conflict of interest

The authors declare that there is no conflict of interest

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