

## Original Research

### Investigating The ACT Training On Reducing Obsession In Women With M.S

Fatemeh Ahmadzade zahedani <sup>1</sup>, Yadollah khoramabadi<sup>2\*</sup>

1-Department of Psychology,kabodar ahang Hamedan branch , Payamnoor University ,Hamedan Iran.

2- Assistant Professor of Department of Psychology, Kabodarahang branch , Payamnoor University , Hamedan Iran.

**Corresponding author: Yadollah khoramabadi**, Assistant Professor of Department of Psychology, Kabodarahang branch , Payamnoor University , Hamedan Iran. Email: [Ykhoramabadi@yahoo.com](mailto:Ykhoramabadi@yahoo.com).

#### Abstract

**Backgrounds:** The present study is an applied and descriptive-analytical in terms of purpose and method, respectively. The aim of this study is studying the ACT training on reducing obsession in women with M.S. This clinical trial study was conducted with pre-test, post-test and follow-up with experimental and control groups.

**Method:** In this study, subjects were selected by convenience sampling. In this study, SPSS software was used to analyze the questionnaire data and the covariance test was used to test the research hypotheses. The results showed that the value of the relevant multivariate statistics, i.e. Wilkes lambda, was significant ( $2\eta = 0.850$ ,  $p = 0.000$ ,  $F = 0.026$ ). Therefore, it can be concluded that there is a significant difference between the two groups in terms of scores of obsessive beliefs.

**Result:** Therefore, we conclude that multivariate analysis of covariance is generally significant. the results of the analysis show that the method of acceptance and commitment therapy has been effective in the rate of obsessive beliefs in obsessive patients with MS.

**Conclusion:** by implementing this approach in schools by school counselors, counseling clinics and welfare centers, many other mental illnesses can be prevented so that the next generation does not get involved in mental problems and, consequently, physical problems. Therefore, due to the effectiveness of the acceptance and commitment therapy in reducing obsessive-compulsive disorder, this treatment can be used for chronic diseases such as schizophrenia, diabetes, chronic pain, etc.

**Keywords:** ACT training, Obsession, Women, MS

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#### Introduction

Commitment and Acceptance Therapy (ACT) is one of the attention-based behavior therapies that have been shown to be effective in treating a wide range of clinical conditions. The ACT therapy was invented by Steven Hayes. The six main processes of ACT include: acceptance,

cognitive Defusion, self as context, contacting the present moment, values, committed action and psychological flexibility. This approach helps clients take responsibility for behavioral changes and make changes or insist whenever necessary. Thus, ACT balances the methods and focuses on acceptance and mindfulness in mutable areas (such as explicit behavior),

focused on changes areas and in areas where change is not possible (1). In this approach, the therapist encourages clients to commit to changes in their behavior (2). ACT takes its name (acceptance and commitment therapy) from its core message: accept what is out your personal control and commit to action that improve and enriches your life (2).

And despite the fact that over the years, families have tended to improve their balance (balance in the family means an acceptable, smooth and predictable way of doing routine things in daily life), one of the problems that upsets the family balance and causes damage to family functions is MS. This disease changes the lives of each individual patient and their families (3).

Multiple Sclerosis (MS) is a demyelinating inflammatory disease of the central nervous system of unknown cause. MS has infected more than 400,000 people in North America. Furthermore, about 500,000 people in Europe and a total of 2.5 million people worldwide are suffering from this disease. In Iran, the first scientific reports related to MS are since 1977. However, few cases of the disease have been reported in previous years and the disease has been discussed in Tehran and Isfahan medical schools since 1330. In the last ten years, the prevalence of the disease in Iran has been very significant, so that in the presented studies, the prevalence of the disease in Tehran in 1389 is 52 patients in 100 thousand people and in

Isfahan in 1390 are 72 patients in 100 thousand people which indicate the high prevalence of the disease in Iran. MS is more common in people between the ages of 40 and 20, and specifically between the ages of 20 and 30 (3). In addition to the physical problems that these people struggle with, there are a number of psychological factors that have impaired their functioning, such as: depression, stress, suicidal ideation, sexual disorders, obsessions, psychological disorders and emotional disorders. Of course, obsession is one of the most obvious factors in these patients. Obsession literally means to be surrounded and attacked, the action of a spirit that compels a person to do something from the outside. Obsession is among anxiety illness and disorders.

The term starchy behavior is often used to refer to many aspects of an obsession disorder including its rigorous social approach, its rigorous posture, and also its way of thinking. Also, when we use the word obsession, we often mean obsessive-compulsive disorder (OCD). Obsessive-compulsive disorder is a brain medical disorder that causes problems with information processing. In this disorder, it is assumed that the human mind is involved in certain thoughts and needs that do not go out of the mind and in other words, it doesn't exit the human mind and does not let it go.

In a study of the families of patients with obsessive-compulsive disorder, it was found

that these patients show a high level of expressed emotion. The study found that 82 percent of family members with obsessive-compulsive disorder had higher levels of expressed emotion. Children from families with high expressed emotion also show more psychotic reactions than children from families with low expressed emotion.

Due to the importance of the subject, during the last ten years, several researches have been conducted in the field of teaching this approach to people with MS as well as people with obsessive-compulsive disorder:

investigated the effect of acupressure on the severity of pain and fatigue in women with MS. Zare Rafi has also researched on spiritual intelligence and the style of coping with stress and the quality of life of people with MS and normal people. Furthermore, (5) investigated the effectiveness of treatment based on acceptance and commitment and cognitive-behavioral treatment on symptoms of patients with the obsessive-compulsive disorder. Masoumi has conducted a study on yoga exercises and central stability on the balance of postural abnormalities in women with sclerosis. Mohajeri studied the relationship between changes in brain gray matter in MRI with cognitive function impairment in patients with multiple sclerosis. In addition, Khorshid sokhangooy has conducted a study comparing endurance and resistance training on the functional capacity of women with multiple

sclerosis. Studies of past research have shown that there are several gaps: The first gap was in no study this approach was performed on female patients with MS and obsessive-compulsive disorder. The second gap is that no research has been conducted in Isfahan. Therefore, according to the gap mentioned, we decided to study acceptance and commitment based training to reduce obsession of women with MS. MS is one of the most common disabling diseases. People with this disease face many problems throughout their lives, including the following:

The onset of the disease is in adolescence, which is the age of employment and income generation and therefore affects all aspects of a person's life, such as mental, physical, cognitive, sexual, economic, marriage, etc. dimension as well as normal life but with so much unpredictable problems that deprives a person from a normal life. There is also a decrease in physical and recreational activities among these patients (4). This research helps clinics to develop strategies to reduce and overcome obsessive-compulsive disorder and welfare institutions and in addition counseling clinics can also benefit from the achievements of this research and it plays a significant role in helping people with the disease, and school counselors will not be deprived of the findings of this study. Another necessity of this research is that in order to update and coordinate the treatment methods of the country with the latest treatment methods in the world, addressing the

treatment method based on acceptance and commitment seems necessary.

## Research background

investigated decrease of obsession symptoms in patients with obsessive-compulsive disorder by treatment through acceptance and commitment therapy. The methods are as follows: a single case was used for three patients with obsessive-compulsive disorder and treatment resistance (5). Beck Anxiety Inventory and a process scale were used to assess patients' *Yale-Brown Obsessive-Compulsive Scale*. The results showed a significant reduction in the symptoms of obsessive-compulsive disorder, depression and anxiety scores, belief in obsessive thoughts and disturbance of obsessive thoughts.

The need to respond to them in the post-treatment measurement was also maintained. From the treatment process and the results obtained in this study, it was concluded that acceptance and commitment therapy can be an effective treatment for treatment resistant OCD patients. The statistical population of this study includes all treatment resistant OCD patients in 2011 in Isfahan who have referred to one of counseling and psychological and psychiatric services for treatment. Subjects were selected from patient by convenience sampling. The data were reported in the form of graphs and qualitatively using the mean and standard deviation. From the treatment process and the results obtained in this study, it was concluded

that acceptance and commitment therapy can be an effective treatment for treatment resistant OCD patients.

Abedini (2013) evaluated the effectiveness of group therapy based on hope therapy approach in increasing hope, reducing depression and improving the quality of life of women with MS. This is an applied and quasi-experimental study with a non-equivalent control group design. The instruments used in this study were Beck's Depression Inventory, Snyder hope scale and Quality of Life Scale for MS patients. The statistical population included women with MS who were members of the Association for Support of MS patients of Zahedan.

The results of analysis of covariance showed that the group therapy based on the hope therapy approach significantly increased hope, reduced depression and improved the psychological dimension of quality of life in women with MS compared to the control group but were not significantly effective in improving the physical dimension of quality of life. Overall, the findings of the present study show that group therapy based on the hope therapy approach is effective in increasing hope, reducing depression and improving the psychological dimension of quality of life in women with MS. Rajabi and Yazdkhasti (2013) studied the effectiveness of group therapy based on acceptance and commitment therapy on anxiety and depression of women with MS in Isfahan.

Montazeri et al. (2013) investigated the effectiveness of schema therapy on reducing depression symptoms and obsessive-compulsive personality disorder. In this study, a 32-year-old woman with obsessive-compulsive disorder was diagnosed with axis 1 and 2 disorder using a semi-structured SCID interview. The Martokubach Obsessive-Compulsive Personality Disorder Questionnaire was used to assess symptoms and the Beck's Depression Inventory was used to assess depression symptoms. In this research, the single subject research method was used with E-B design. The findings of this study, which were obtained by visual analysis of data graphs based on descriptive statistics and visual analysis at the follow-up stage to the baseline of the intervention, have been effective in reducing depression and obsessive-compulsive personality symptoms of participant. The result was that schema therapy reduced the symptoms of depression and obsessive-compulsive personality disorder in people with obsessive-compulsive personality disorder.

Azaraein (2011) studied the effectiveness of attention control training program in reducing attention bias to compulsive-obsessive stimuli and reducing the severity of obsessive-compulsive symptoms. The present study consisted of three studies which the first study examined the relationship between anxiety, depression and obsessive-compulsive disorder. Emotional strep test was used for obsessive

stimuli in 30 individuals with OCD symptoms. The results of one-way analysis of variance showed that obsessive-compulsive individuals showed more attention bias to obsessive-compulsive stimuli in comparison with the control group. Also, the bias towards obsessive stimuli has not significant relationship with the level of anxiety and depression of the subjects. The results showed that the attention control training program was associated with a reduction in attention to obsessive stimuli both after the test and in the follow-up.

Johnson & Johnson (2012) conducted a study entitled the effect of acceptance and commitment therapy on the rate of depression in type 2 diabetic patients. It was an experimental research and the statistical population included diabetic patients of the Canadian Diabetes Charity Center. Thirty patients were replaced in experimental and control groups and completed Beck's Depression Inventory and Mental Health Test before and after the intervention. The instruments used in this study included Beck BDII. The results showed that there was a significant difference between the post-test and pre-test scores of the experimental group compared to the control group. These results indicate the effectiveness of acceptance and commitment therapy in reducing depression in diabetic patients. It also shows that the effect of treatment is persistent at follow-up. Denison and Morris (2008) also evaluated multiple sclerosis (MS) by evaluating the symptoms of

depression, anxiety, and sadness. The aim of this study is to design the symptoms of the disease and create a treatment committee as an intervention group for multiple sclerosis disease with its psychological effects in such a way that the patient is accepted by the treatment committee and rest exercises begin. Treatment consists of five 15-week courses that include training sessions, discussion groups and exercises.

The results of scores are assessed by the degree of symptoms of depression, anxiety and worry as well as the level of acceptance. As a result, in the next three months, the group has a series of exercises that reduce their symptoms of anxiety and worry. And the treatment committee shows that they will make great progress in this period. Rest exercises directly control their emotional signs and symptoms and reduce depression, anxiety and worry in patients and reduce sclerosis. The purpose of study of Venice Adroit and Twitch (2014) was to evaluate the effectiveness of the acceptance and commitment therapy approach on reducing depression in housewives. This research was quasi-experimental and pre-test-post-test and follow-up with the control group. The statistical population of this study was housewives in Melbourne in 1990. The sample of this study included thirty housewives who referred to six health centers whose scores in the Beck's depression inventory were 14 to 63 and randomly divided into two groups of 15 people. In this study, the repeated measures

ANOVA model was used to test the hypotheses. The results showed that the independent variable has an effect on reducing depression in housewives and in other words, the acceptance and commitment approach has reduced depression in housewives.

### Research objectives

- Explain the level of the effect of acceptance and commitment-based training in reducing obsessive-compulsive disorder in patients with MS
- Explain the level of the effect of acceptance and commitment training on responsibility versus risk assessment of obsessive-compulsive disorder patients with MS among the control group and group of patients with MS.
- Explain the level of the effect of acceptance and commitment training on perfectionism versus the need for confidence of obsessive-compulsive patients with MS among the control group and group of patients with MS.
- Explain the level of the effect of acceptance and commitment training on giving importance to thoughts versus controlling the behavior of obsessive-compulsive patients with MS among the control group and group of patients with MS.

### Theoretical foundations of research

#### Obsession:

Thoughts, mental images, or impulses that are repeated over and over and seems are out of control or actions that a person often performs often according to certain rules (4).

### **Obsessive-compulsive disorder**

Obsessive-compulsive disorder is defined by recurrent obsessive thoughts or actions that cause distress and often disrupt a person's daily life. Obsessions are thoughts and imaginations with uninvited impulses that one considers them idiotic. Compulsive actions are deliberate repetitive behaviors with mental activities that are performed in response to obsessive thoughts. The individual performs these actions specifically "to suppress or negate discomfort or to prevent a frightening event, although this intention may not always be obvious to the person observing these behaviors".

### **Conceptual definition of MS:**

Multiple sclerosis (MS) is one of the most common diseases of the central nervous system in young people, in which the myelin tissue of the person is attacked and also causes sensory and motor disabilities.

### **Prevalence**

According to the DSM-5, the 12-month prevalence of OCD in the United States is 1.2 percent, which is similar to the international prevalence (1.1 to 1.8 percent). Women are slightly more likely to be infected in adulthood

than men, although men are more likely to be infected in childhood. Epidemiological studies have shown that the prevalence of obsessive-compulsive disorder during life is 2 to 3%, which is almost "twice the prevalence of schizophrenia".

Obsessive-compulsive disorder is more genetic and familial. And first-degree members appear to be more susceptible to it. Also, studies related to the transmission of obsessive-compulsive disorder in families show that this disorder occurs to some extent among first degree family members. Men are likely to develop obsessive-compulsive disorder between the ages of 6 and 15 and women between the ages of 20 and 29. And this disorder occurs earlier in men than women (4). The disorder appears to be more prevalent in women than men.

### **Acceptance and Commitment Approach Training:**

The acceptance and commitment approach is one of the postmodern treatment models that were known as ACT for short in the 1980s by Steven Hayes (1987).

Acceptance and commitment-based therapy uses acceptance and mindfulness processes and commitment and behavior change processes to create psychological flexibility. An intervention based on acceptance and

commitment includes various techniques in the areas of acceptance, diffusion, creating a perfect sense of self, being in the present, mindfulness, clarifying values, and committing to those values.

## Research hypotheses

The acceptance and commitment approach is effective in reducing the obsession of obsessive-compulsive patients with MS among the control and experimental groups.

The approach of acceptance and commitment is effective in responsibility versus risk assessment of obsessive-compulsive patients with MS among the control and experimental groups.

The acceptance and commitment approach is effective in perfectionism versus the need for confidence of obsessive-compulsive patients with MS among the control and experimental groups.

The acceptance and commitment approach is effective in giving importance to thoughts versus controlling the behavior of obsessive-compulsive patients with MS among the control and experimental groups.

## Research method

This clinical trial study was conducted with pre-test, post-test and follow-up design with experimental and control groups. In this study, subjects were randomly selected and

therapeutic goals were explained to the group and their informed consent to participate in treatment was obtained. And the control group was on the waiting list. After performing the pre-test, which includes the above test, they were divided into experimental and control groups. The experimental group was then treated as a group and once a week for one hour by the method of acceptance and commitment. Therapeutic sessions were held by researcher in Ayatollah Kashani Hospital. After the end of 8 sessions, post-test intervention was performed on all subjects (experimental and control).

The independent variable in this study was the treatment methods (including acceptance and commitment therapy) and the dependent variable was the score of the participants. The test in the study included Maslow's obsessive-compulsive disorder diagnostic questionnaire. The test in the study included Maudsley Obsessive – Compulsive Inventory. The statistical population of this study includes obsessive– Compulsive female patients with MS referred to Kashani Hospital in Isfahan province, who have been diagnosed with MS by neurologists.

The primary sample consisted of 100 people among which 49 had Obsessive – Compulsive disorder by performing Maudsley Inventory. And out of this number, 30 people were randomly selected by lot. Some of them refused to come due to extreme fatigue and some due to the long distance and finally the number was

reduced to 21 people who were randomly divided into 2 groups of 10 (control group) and 11 people (experimental group). The independent variable in this study is the implementation of acceptance and commitment therapy in obsessive-compulsive women with MS, which was applied to the experimental group in 8 sessions of 60 minutes and the control group did not receive this intervention. The dependent variable in this study is pre-test, post-test and obsessive-compulsive disorder scores (RT), perfectionism versus need for confidence (PC), giving importance to thoughts versus thought control (ICT). At the end of the treatment sessions in the experimental and control groups, patients completed these measurement instruments before and after treatment. The reliability coefficient obtained from the OBQ-44 retest method for the total score and its subscales were estimated to be 82%, 79%, 83% and 78%, respectively, which indicates the stability of the test scores to distance. In this study, the Cronbach's alpha coefficient for the whole test and the three RT, PC and ICT subscales were 92%, 85% and 80%, respectively, indicating a high alpha coefficient.

## Research Findings

In the present study, the reliability coefficients of the Obsessive Beliefs Questionnaire were calculated using Cronbach's alpha method. The total score and subscales of RT, PC and ICT

were estimated .... respectively which indicate the optimal reliability of the questionnaire.

Then, Kolmogorov-Smirnov test was used to evaluate the normality of the scores, which due to the significant level ( $p < 0.05$ ) normality of the data was accepted.

According to the present research design which is of pre-test-post-test type with two groups of control and experiment, multivariate analysis of covariance was used to analyze the data and test the research hypotheses and to control the effect of pre-test and post-test. In this type of analysis, before using this statistical method, the presuppositions of this test should be examined in order to be sure of the obtained results.

One of the presuppositions of this test is to investigate the homogeneity of variance of the two groups in the post-test stage. To evaluate it, the Levene variance homogeneity test was used, which its results are shown in Table (2).

The calculated Levene test was not statistically significant for any of the studied subscales. (Responsibility  $p = 0.58 > 0.05$  and  $F(1 \text{ and } 19) = 0.31$ , perfectionism  $p = 0.08 > 0.05$  and  $F(1 \text{ and } 19) = 3.29$ , giving importance to thoughts  $p = 0.12 > 0.05$  and  $F(1 \text{ and } 19) = 2.57$ . Therefore, the assumption of homogeneity of variances was confirmed.

One of the other assumptions of the test is to check the homogeneity of variance-covariance

matrices, for which the box test was used. The results are presented in Table (3).

Table (3) homogeneity test of variance-covariance matrices in pre-test and post-test stage

For pre-test ( $p = 0.736$ ,  $0.05 < p < 0.05$  and  $F = 0.593$  and Box's  $M = 4.309$ ) and for post-test ( $p = 0.564$ ,  $0.05 < p < 0.05$ ,  $F = 0.807$  and Box's  $M = 5.86$ ) was calculated. The significance of the box test is more than 0.05, so it is concluded that the variance-covariance matrix is homogeneous.

Another important assumption of multivariate analysis of covariance is the homogeneity of regression coefficients. It should be noted that the test of homogeneity of regression coefficients was examined through the pre-test interaction of the subscales of responsibility, perfectionism and giving importance to independent thoughts and independent variable (treatment method) in the post-test stage. The results are presented in Table (4).

As can be seen, the relevant multivariate statistic, i.e. Wilkes lambda, is not significant at 95% significance level ( $\alpha = 0.05$ ) ( $p = 0.089$ ,  $0.05 < p < 0.05$ ,  $F = 2.812$  and Wilks' lambda = 0.566). Therefore, the interaction of these pretests with the independent variable is not significant and the assumption of regression coefficient homogeneity is also established. Due to the assumptions of multivariate analysis of covariance, we are allowed to use this statistical test.

## Investigation of research hypotheses

### The main hypothesis

There is a significant difference between the control and experimental groups by acceptance and commitment approach in reducing obsessive-compulsive disorder in patients with MS.

To evaluate the significance of differences between the post-test scores of obsessive beliefs after controlling the effect of pre-test in the experimental and control groups, multivariate analysis of covariance was used, the results of which are presented in Table (5).

As the results of Table (5) show, the value of the relevant multivariate statistics, i.e. Wilkes lambda, is significant ( $\eta^2 = 0.850$ ,  $p = 0.05 < p < 0.000$ , and  $F = 26.490$ ). Therefore, it can be concluded that there is a significant difference between the two groups in terms of scores of obsessive beliefs.

Therefore, we conclude that multivariate analysis of covariance is generally significant; In other words, the results of the analysis show that acceptance and commitment therapy has been effective in the rate of obsessive beliefs in obsessive-compulsive patients with MS.

Considering that the mentioned multivariate analysis of covariance was significant, it

should be examined whether each of the dependent variables was affected separately from the independent variable or not. In order to compare the mean post-test scores of obsessive beliefs subscales after controlling for the pre-test effect in the two groups (review of research sub-hypotheses), analysis of covariance (ANCOVA) is used.

### The first sub-hypothesis

Acceptance and commitment approach in responsibility versus risk assessment of obsessive-compulsive patients with MS. There is a significant difference between the control and experimental groups. The results of analysis of covariance are presented in Table 6.

As can be seen in Table (6), there is a significant difference between the mean post-test scores of the responsibility subscale after eliminating the pre-test effect ( $\eta^2 = 0.69$ ,  $p = 0.000$ ,  $05/0 >$  and  $f(1 \ \&18) = 40.21$ ). In fact, by controlling pre-test among obsessive-compulsive patients with MS of the experimental and control groups, there are significant differences in terms of responsibility for risk assessment. Therefore, the first sub-hypothesis is confirmed.

### Second sub-hypothesis

There is a significant difference between the control and experimental groups in terms of the acceptance and commitment approach for

perfectionism versus the need for confidence of obsessive-compulsive patients with MS.

The results of analysis of covariance are presented in Table (7).

As can be seen in Table (7), there is a significant difference between the mean post-test scores of the perfectionism subscale after removing the pre-test effect ( $\eta^2 = 0.62$  and  $05/0 > 000/0 = p$  and  $F(1 \ \&18) = 29.37$ ). In fact, by controlling pre-test among obsessive-compulsive patients with MS of the experimental and control groups, there is a significant difference in terms of perfectionism versus the need for confidence. Therefore, the second sub-hypothesis is confirmed.

### Third sub-hypothesis

Acceptance and commitment approach in giving importance to thoughts versus controlling the behavior of obsessive-compulsive patients with MS. There is a significant difference between the control and experimental groups.

The results of analysis of covariance are presented in Table (8).

As can be seen in Table (8), there is a significant difference between the mean scores of the post-test giving importance of thoughts subscale after removing the pre-test effect ( $\eta^2 = 0.35$  and  $p = 0.006 < 0.05$  and  $F(1 \ \&18) = 9.80$ ). In fact, by controlling pre-test among

obsessive-compulsive patients with MS, there are significant differences between experimental and control groups in terms of giving importance to thoughts versus controlling behavior. Therefore, the third sub-hypothesis is confirmed.

## Conclusion

According to the main hypothesis of the study, there is a significant difference between the control and experimental groups regarding the approach of acceptance and commitment in reducing the obsession of obsessive-compulsive patients with MS. There is a significant difference between the control and experimental groups in terms of obsessive beliefs scores ( $p = 0.000$ ). Thus, the statistical null hypothesis is rejected and it is found that the linear combination of the three dependent variables and the amount of post-tests of the subscales of responsibility, perfectionism and giving importance to thoughts after adjusting the differences of the three covariate variables (pre-tests of obsessive beliefs subscales) are affected by the independent variable (treatment method). In other words, the results of the analysis indicate the effectiveness of the acceptance and commitment approach in the rate of obsessive beliefs in obsessive-compulsive patients with MS. The mean of total scores in the post-test stage in the experimental group is lower than the mean scores of the control group. In other words, it can be said that the acceptance and

commitment therapy has significantly reduced the obsession of obsessive-compulsive patients with MS and increases the skills that play an important role in achieving mental health and independence of patients' minds. The above finding is consistent with the findings of other researchers that the acceptance and commitment approach is effective in reducing the extent of obsessive beliefs. In a study conducted by (5) entitled "Reducing the symptoms of obsession in patients resistant to treatment with obsessive-compulsive disorder through acceptance and commitment therapy, The results showed that acceptance and commitment therapy can be an effective treatment for obsessive-compulsive patients resistant to treatment. Abedini (2013) conducted a study on the effectiveness of group therapy based on the hope therapy approach in increasing hope, reducing depression and improving the quality of life of women with MS. Finally, the findings showed that group therapy based on hope therapy approach has been effective in increasing hope, reducing depression and improving the psychological dimension of quality of life in women with MS. Rajabi and Yazdkhasti (2013) examined the effectiveness of group therapy of acceptance and commitment on depression and anxiety in women with MS. The results showed that in the post-test phase, the scores of anxiety and depression and the experimental avoidance of the experimental group significantly decreased compared to the control group. And this reduction has not changed significantly during

the one-month follow-up. Therefore, group therapy of acceptance and commitment has been effective in treating anxiety and depression in women with MS. Other researches by Johnson and Johnson (2012), Adroit and Twitch (2014), etc. also confirm the above results.

According to the first sub-hypothesis, there is a significant difference between the control and experimental groups in terms of acceptance and commitment approach in responsibility versus risk assessment of obsessive-compulsive patients. The results of the analysis showed that with controlling pre-test among obsessive-compulsive patients with MS, there is a significant difference between the experimental and control groups in terms of responsibility for risk assessment ( $p = 0.000$ ). Therefore, the first sub-hypothesis is confirmed. Acceptance and commitment therapy also had the greatest effect on the responsibility subscale in the sample group. In other words, the results of the analysis show the effectiveness of the acceptance and commitment approach in responsibility versus risk assessment in obsessive-compulsive patients with MS. The mean scores of the responsibility subscale in post-test were lower in the experimental group compared to the control group. In other words, it can be said that acceptance and commitment therapy significantly increases the responsibility for risk assessment and ultimately reduces the obsession of obsessive-compulsive patients

with MS. The result of this study is consistent with (5) research on the approach of acceptance and commitment in responsibility versus risk assessment of obsessive patients. It is also consistent with Abedini's research with a single-subject design in three patients resistant to obsession which was done by the Bill-Brown obsessive-compulsive Disorder Scale, the Beck Anxiety Inventory, and a process scale.

According to the second sub-hypothesis, there is a significant difference between the control and experimental groups in the acceptance and commitment approach in terms of perfectionism versus the need for confidence of obsessive-compulsive patients with MS. By controlling pre-test among obsessive-compulsive patients with MS, there is a significant difference between the experimental and control groups in terms of perfectionism versus the need for confidence ( $p = 0.000$ ). Therefore, the second sub-hypothesis is accepted. In other words, the results of the analysis show the effectiveness of the acceptance and commitment approach in perfectionism against the need for confidence in obsessive-compulsive patients with MS. The mean scores of the perfectionism subscale in the post-test stage are lower in the experimental group compared to the control group. In other words, it can be said that the acceptance and commitment therapy significantly reduces perfectionism versus the need for confidence and ultimately reduces the obsession of patients with obsessive-compulsive disorder with MS.

The results of this research are the same as Neshat Doost and Abedi research on the acceptance and perfectionism approach.

According to the third hypothesis, there is a significant difference between the control and experimental groups in terms of the acceptance and commitment approach with regard to give importance to thoughts versus controlling the behavior of obsessive-compulsive patients with MS. By controlling pre-test among obsessive-compulsive patients with MS, there were significant differences between experimental and control groups in terms of giving importance to thoughts versus controlling behavior ( $p = 0.006$ ). Therefore, the third sub-hypothesis is accepted. The results of this study are identical to the research of Johnson Warad (2012) on the effect of acceptance and commitment therapy on giving importance to thoughts in obsessive-compulsive disorder in type 2 diabetics. In other words, the results of the analysis show the effectiveness of the acceptance and commitment approach in giving importance to thoughts versus behavior control in obsessive-compulsive patients with MS. The mean scores of the subscale of giving importance to thoughts in the post-test stage are lower in the experimental group compared to the control group. In other words, it can be said that the acceptance and commitment therapy significantly increases giving importance to thoughts versus behavior control and ultimately reduces the obsession of obsessive-compulsive patients with MS. Obsessive-

compulsive disorder is a chronic disorder with a set of symptoms. This disorder affects the patient's social and occupational function and leads to meaningful damage, greatly reducing their function and depriving the patient of the ability to perform daily tasks. Because of the early onset of obsessive-compulsive disorder, it affects many aspects of a person's life for a long time. Studies suggest that one of the most important features of obsessive-compulsive disorder is that it is resistant to treatment. Also, in the last ten years, the prevalence of MS in Iran has been very significant, and in addition to the physical problems that these people are struggling with, there are a number of psychological factors that have affected their function. Obsessive-compulsive disorder is obvious in these patients. Complaints of obsessive thoughts and actions are seen in patients with MS. Also, the family members of obsessive-compulsive disorder sufferers experience considerable stress, which in turn causes a lot of discomfort and problems for patients with MS. Therefore, considering the degree of obsession, treatment of patients with this disorder can be an effective help in maintaining the health and mental well-being of a large number of families.

Commitment and Acceptance Therapy (ACT) is one of the attention-based behavioral therapies that have been shown to be effective in treating a wide range of clinical conditions. The view of acceptance and commitment assumes that people find their inner feelings,

emotions, and thoughts annoying. And they are always trying to change or get rid of these inner thoughts and feelings. This attempt of human beings to control their inner experiences is not only ineffective, but on the contrary, it intensifies the feelings and emotions of the thoughts that the person has tried to control. This approach helps patients take responsibility for behavioral changes and change or insist whenever he needed to. So ACT balances practices. In this approach, the therapist encourages patients to commit to changes in their behavior.

In the last decade in Iran, special attention has been paid to the acceptance and commitment therapy. Due to the importance of the variable effect of obsession, especially obsessive-compulsive disorder, a different approach can be used, the best of which is acceptance and commitment, which increases skills that play an important role in achieving mental health and independence of mind. This view is from the third wave generation of behavior therapy. Research on this theory is advancing very rapidly. Due to the importance of the subject, during the last ten years, several researches have been conducted in the field of teaching this approach on people with MS as well as people with obsessive-compulsive disorder.

Given that the hypothesis has been confirmed, it is possible to use the acceptance and commitment therapy to reduce obsession and subsequently prevent emotional disorders such

as depression, anxiety disorder, insomnia, mental rumination, etc. individually and in groups for people with obsessive-compulsive disorder.

The present study has been performed on female subjects. Therefore, care should be taken to generalize the results to male groups. Other limitations of the present study are the lack of cooperation of the subjects and refusal to participate in the sessions, the small number of research subjects, and the lack of review in the follow-up stage.

According to the results of this study, it is suggested that this study be performed in larger samples, longer-term follow-up period, and the use of male and female subjects in different regions and cities to be able to generalize the results comprehensively. It is also suggested that in future research this treatment method be compared with other methods to better understand its effectiveness compared to other methods.

Also, by implementing this approach in schools by school counselors, counseling clinics and welfare centers, many other mental illnesses can be prevented so that the next generation does not get involved in mental problems and, consequently, physical problems. Therefore, due to the effectiveness of the acceptance and commitment therapy in reducing obsessive-compulsive disorder, this treatment can be used for chronic diseases such as schizophrenia, diabetes, chronic pain, etc. Also, showing the

effectiveness of new methods of psychotherapy and non-drug treatment, in the form of scientific and controlled researches along with pharmacotherapy methods and psychiatric services, can be an effective step in promoting the culture of referral to psychotherapists for treatment of patients with obsession.

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### Conflict of interest

There is no conflict of interest for the authors of this article.

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### Tables and Charts:

**Table (1).** Training sessions

First session	<ol style="list-style-type: none"> <li>1. Getting familiar with members and establishing a therapeutic relationship with members</li> <li>2. Concluding a medical contract</li> <li>3. Raising the issue of secrecy</li> <li>4. Talking about goals</li> <li>5. Performing Pre-test.</li> </ol>
Second session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. Creative hopelessness</li> <li>4. Challenge with the members change program</li> <li>5. Giving an assignment</li> </ol>
Third session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. Saying that control is a problem</li> <li>4. Discussion about the inner and outer world</li> <li>5. Giving an assignment</li> </ol>
Forth session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. Expressing the discussion of clean pain and dirty pain</li> <li>4. Discussion of experimental acceptance / desire</li> <li>5. Giving an assignment</li> </ol>
Fifth session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Raising diffusion - self as a background</li> <li>3. Giving an assignment</li> <li>4. Behavioral commitment</li> </ol>
Sixth session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. Mindfulness in the present</li> <li>4. Choices and values</li> <li>5. Giving an assignment</li> </ol>
Seventh session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. Specifying values</li> <li>4. Setting goals</li> <li>5. Check the obstacles</li> <li>6. Commitment to action and change</li> <li>7. Giving an assignment</li> </ol>
Eighth session	<ol style="list-style-type: none"> <li>1. Review the reaction to the previous session</li> <li>2. Assignment review</li> <li>3. performing post test</li> </ol>

**Table (2).** Levene variance homogeneity test in the post-test stage in subscales obsessive beliefs

subscales	F	df1	df2	Significance level (p)
responsibility	31/0	1	19	58/0
Perfectionism	29/3	1	19	08/0
Giving importance to thoughts	57/2	1	19	12/0

**Table (3).** homogeneity test of variance-covariance matrices in pre-test and post-test stage

stage	Box's M	F	Significance level (p)
Pre-test	309/4	593/0	736/0
Post-test	86/5	807/0	564/0

**Table (4).** Homogeneity test of regression coefficients in post-test

stage	Wilks' lambda	F	Significance level (p)
Post test	566/0	812/2	089/0

**Table (5).** summary of the results of MANCOVA analysis of post-test scores of obsessive beliefs by controlling the effect of pre-test

	value	F	Df assumption	Df error	Significance level (p)	squares
Wilks' lambda effect	150/0	490/26	3	14	000/0	850/0

**Table (6).** Results of ANCOVA analysis of responsibility post-test scores in two groups

subscale		Sum of squares	Degree of freedom	Mean squares	F	Significance level (p)	squares
	Pre test	18/359	1	18/359	92/73	000/0	80/0
	group	39/195	1	39/195	21/40	000/0	69/0
	error	46/87	18	86/4	-	-	-

**Table (7).** Results of ANCOVOA analysis of post-test scores of perfectionism in two groups

Subscale		Sum of squares	Degree of freedom	Mean squares	F	Significance level (p)	squares
perfectionism	Pre test	33/528	1	33/528	41/178	000/0	90/0

	group	99/86	1	99/86	37/29	000/0	62/0
	error	30/53	18	96/2	-	-	-

**Table (8).** Results of ANCOVA analysis of post-test scores of giving importance to thoughts subscale in two groups

subscale		Sum of squares	Degree of freedom	Mean squares	F	Significance level (p)	squares
giving importance to thoughts	Pre test	23/344	1	23/344	88/12	002/0	42/0
	group	10/262	1	10/262	80/9	006/0	35/0
	error	10/481	18	73/26	-	-	-