**Original Article**

# The Effectiveness Of Acceptance And Commitment-Based Therapy On Mood Regulation, Executive Function And Reduction Of Behavioral Symptoms, After Cessation Of Drug Use In Maintenance Therapies

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**Abstract:**

**Background**: The aim of this study was to evaluate the effectiveness of acceptance and commitment-based therapy in mood regulation, executive function and reduction of behavioral symptoms after cessation of drug use in maintenance therapies.

**Method**: The research method was quasi-experimental and the pre-test and post-test design with the control group were used. For this purpose, among the addicts under maintenance treatment, who had referred to the addiction treatment centers of Frieden city after cessation of drug use, 30 people were selected using the available sampling method and were randomly divided into two experimental and control groups. In the pre-test and post-test, the Wisconsin Berg (1948) card classification test, the Stroop test (1935), the Madsley Addiction Profile Test (1998), and the Clark Watson (1988) Positive and Negative Mood Test were performed on the subjects. Then, the acceptance and commitment treatment program was performed for 6 weeks in 6 sessions of 90 minutes, and after the post-test, the data were analyzed using analysis of variance and covariance.

**Results**: The results showed that there was no significant difference between the pre-test and post-test scores of the experimental group compared to the control group.

**Conclusion**: Therefore, according to the obtained results, it can be concluded that treatment based on acceptance and commitment to mood regulation, executive function and reduction of behavioral symptoms after cessation of drug use has not been effective in maintenance therapies.

**Keywords**: Acceptance and commitment-based therapy, mood regulation, executive function, reduction of behavioral symptoms.

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## Introduction

Addiction is one of the most important issues of the present age that has become widespread worldwide and the number of victims of drug use is increasing every day. The results of the statistics on the situation of addiction in the country by the spokesman of the Anti-Narcotics Headquarters, a statistic that warns that the official number of addicts in the country has reached 2 million and 808 thousand people and people aged 15 to 64 are the most drug users ,this is despite the fact that five years ago, the prevalence of addiction was not significant. The results of the survey show that the pattern of drug use and gender of drug users is changing rapidly and the use of industrial drugs such as glass has dropped significantly and opium is still at the top of traditional drugs. Now, based on these statistics, which are approved by the Anti-Narcotics Headquarters, it can be concluded that the prevalence of addiction has doubled in a period of 5 years. About 45% of consumers are under 29 years old and about 30% are between 30 and 39 years old.

The Director General of the Research and Training Office of the Headquarters stated that the average age of onset in the sample population was 21 years and while 53% of the sample population had a job, he added : 64% of consumers had undergraduate education and 63% of the sample population were married. Also, drug users mentioned the first place to start their consumption in order of priority, friends' houses, their homes, ruined places, parks, alleys and streets, which therefore requires parents to monitor their children's traffic and how they communicate with friends and manage their children's free times. The prevalence rate of consumption in relation to the population in some provinces such as Kerman, Mazandaran, Khuzestan, West Azerbaijan, Lorestan, Sistan and Baluchestan, Kermanshah, Fars, Tehran, Khorasan Razavi, Qom and Alborz was higher than the national average that all opposing institutions are needed in this holy jihad, they should try harder to control this sinister phenomenon [1].

Drugs change mood, behavior and cognitive functions and are one of the most obvious psychological and social ills, the dependence of which is a complex disorder with biological, psychological, social and spiritual causes. Addiction causes a set of cognitive, behavioral, emotional, and physiological symptoms during which a person engages in substance abuse while having significant problems related to substance use. Therefore, addiction must be considered both physically and mentally. According to research, personal factors such as mental disorders and disorders such as anxiety and depression are among the causes of addiction and drug abuse. Addiction is a chronic and recurrent disorder whose onset and persistence is affected by the interaction of various genetic, psychological, social, and environmental factors [2].

Consumption of various psychotropic substances can have detrimental effects on people's cognitive function. The study of how cognitive functions are disrupted by drug use reveals profound changes in different parts of the cerebral cortex and subcortex that control the functions of the human psychological nerve. Among people with substance abuse disorders, there is a decrease in the gray matter and white matter of the brain and changes in the microstructures of the white matter.

Drug addiction is a type of motivational disorder that occurs due to blockage of neural circuits related to memory and learning, etc. Studies of brain images on drug addicts have shown that the pattern of brain activity and the quality of white matter, which are related to attention and memory, are different in these people than in normal people [2].

Other problems with addicts who have stopped using drugs include mood swings and emotional problems. Such as depression, dysphoria, feelings of dissatisfaction and apathy, irritability, feelings of loneliness, etc., whose moods and emotions can be regulated using therapies based on acceptance and commitment. In addition to the above, executive dysfunction such as problem solving, planning, cognitive flexibility, response inhibition, attention and concentration, as well as behavioral symptoms such as aggression, impulsivity and irresponsibility, are other issues and problems of addicts after stopping drug use [3].

Treatment based on acceptance and commitment is a kind of cognitive-behavioral therapy based on functional contextualism,and it has its roots in a new theory of language and cognition called the theory of the framework of mental relations.

Treatment based on acceptance and commitment assumes that people find many of their feelings,

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emotions, or inner thoughts annoying, and they are constantly trying to change or get rid of these inner experiences. These attempts to control are ineffective and paradoxically exacerbate feelings, emotions, and thoughts that one initially tries to avoid. Acceptance and commitment-based therapy has six central processes that lead to psychological resilience, these six processes are: acceptance versus avoidance, non-fusion versus cognitive fusion. Self as a context, as opposed to self conceptualized, the relation of the present, in the face of the past and the future which has been conceptualized, the definition of values in the absence of the explicitness of values and the relation to them and treatment based on acceptance and commitment, in contrast to the separation of commitment, has two parts of the mind awareness and action and experience in the present time and people are taught to live in the present moment by accepting feelings and emotions and refraining from experiential avoidance. And better deal with the effects of drug withdrawal [4].

Therefore, based on a review of theoretical foundations and research, it can be concluded that commitment-based acceptance therapies can improve mood swings, cognitive and behavioral functions, and increase a person's self-awareness of unpleasant experiences and feelings in order to increase the self-awareness of unpleasant feelings in the face of critical situations and to be able to control their behaviors. Therefore, the purpose of this study is to answer whether therapies based on acceptance and commitment can be effective in empowering the individual in the areas of mood, executive functions and behavior?

***Research Purposes***

Determining the effectiveness of acceptance and commitment-based therapy in mood regulation, executive functions ( Such as memory, reasoning, planning ) and reduction of behavioral symptoms after cessation of drug use in individuals undergoing maintenance therapy.

**Theoretical foundations of research**

***Executive Functions***

Izadi (2012) [4] considers executive functions as complementary skills that enable us to organize and define our goals and then keep those goals active in our memory and act in a controlled manner. In addition, executive functions prevent confusion and disruption that prevent us from achieving our goals.

In another definition of executive function, it is the ability to abstract and the ability to change cognitive strategies and use environmental feedback to change cognitive context (cognitive flexibility) and problem solving.

According to Meltz (2007) [9], executive functions are considered as an umbrella for complex cognitive processes that create purposeful behavior, including goal setting, planning, organizing behavior over time, Flexibility, attention, working memory and self-regulation processes.

***Mood Regulation***

In the definition of mood, which is a continuous and penetrating behavior as an emotional state that overshadows personal perception of the world, mood is created by processes that are vague and often unknown, Like a depressed mood for which no specific reason can necessarily be stated [10].

Mood is a general, stable and inner state of our emotions that is directly related to emotion and excitement. The difference with excitement is that our excitements are intensified feelings that are created inside us when we encounter environmental stimuli, and emotion is the external manifestation of excitements.

***Drug Abuse***

A pattern of repeated drug use that usually results in tolerance, withdrawal, and compulsive drug behaviors. The most important characteristic of drug abuse is a pattern of maladaptive drug use, which is characterized by significant adverse and recurrent consequences associated with repeated drug use.

In the definition of the fourth version of the Guide to Diagnosis of Mental Disorders, a set of cognitive, behavioral and physiological symptoms that indicate that a person continues to use drugs despite the significant problems that arise.

***Behavioral Symptoms***

It is a set of high-risk physical, physiological and psychological behaviors that a person engages in during or after drug use [11].

***Acceptance &Commitment-based Therapy***

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Acceptance and commitment-based therapies include the use of Hayes and Ostrosal-based therapies based on acceptance and commitment, such as admission training, motivation for change, commitment training, and the like in therapy sessions given to individuals.

Another definition of acceptance and commitment therapy is a branch of behavioral analysis based on the theory of communication framework and a comprehensive theory of language and cognition [4].

***Research Method***

The research method is quasi-experimental with two groups, experimental group and control group, which were performed as pretest and posttest. Thus, first the pre-test was performed on the experimental and control groups and then, acceptance and commitment-based treatment interventions were performed on the experimental group, but no intervention was performed on the control group,then, post-test was performed on two groups. The sample consisted of 30 people who were undergoing maintenance treatment and after stopping drug use were referred to addiction treatment centers in the city of Frieden and were randomly divided into two groups of 15 people. Data analysis method in the study was performed at two levels of descriptive and inferential statistics so that in the descriptive part is the mean and standard deviation and in the inferential part of the test is the use of analysis of variance and covariance and its assumptions using the spss23 program.

***Research Tools***

This treatment package is taken from the training package of Madzley (1998) [11].

*Table1) Acceptance & commitment-based therapy*

| Meetings | Meeting Description | Time |
|---|---|---|
| First:<br>Getting acquainted with groupmates, outline of treatment | Familiarity with group members and establishing therapeutic relationships, determining the rules governing therapeutic sessions, Explain the treatment plan and characteristics of each subject, | 90min |
| Second:<br>Familiarity with therapeutic concepts | Familiarity with the concepts of therapy and reviewing the contents of previous sessions, teaching new topics about the principles and rules of therapy (psychological flexibility, acceptance, failure, values, commitment) and providing metaphors for each | 90min |
| Third:<br>Control is the problem, not the solution | Practice mindfulness in a few minutes and feedback from the previous session, provide an objective allegory for awareness of unpleasant mental and physical emotions and feelings, provide a lie metaphor for the concept of experiential control, practice milk milk exercise to reduce the interference of unpleasant thoughts Encourage the implementation of the allegory of bus passengers and provide homework | 90min |
| Fourth:<br>Practical training in cognitive faulting and clarification of values | Practicing mindfulness and feedback from the previous session, presenting the allegory of the burial ceremony to clarify one's values, presenting the allegory of the annoying neighbor to bring unpleasant thoughts and feelings to the mind, presenting the metaphor of rope and monster and being in the path of values, presenting the practice with self-excited excitement and presentation homework | 90min |
| Fifth:<br>Cognitive fault practice | Practicing mindfulness and providing feedback from the previous session, presenting the metaphor of flowing pebbles for meaningful life in the path of values, presenting the allegory of a giant iron man for long-term contact with thoughts, body senses and unpleasant emotions and memories, and presenting homework | 90min |
| Sixth: | Rating the importance of each of the values and the degree of consistency of current behaviors, setting a goal in detail and | 90min |

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| | | |
|---|---|---|
| Assessing values and identifying values and committed action | specific, re-evaluating the values and commitment to it and presenting a permanent task, implementation after the test | |

***The Positive & Negative Emotion Scale***

The Positive and Negative Emotion Scale was developed in 1998 by Madzley [11] To assess two moral dimensions, positive emotion and negative emotion. This scale has 20 terms. Each word phrase contains a positive or negative emotion. The Positive and Negative Emotion Scale is a self-report tool and the subject should determine in a 5-point Likert scale (very low = 1 to very high = 5) how much he experiences each of these expressions. In this test, 10 expressions belong to each subscale (positive emotion and negative emotion) and the range of changes for each subscale is between 10 and 50.

***Wisconsin***(1) ***Card Classification Test***

The Wisconsin test is designed to assess abstract reasoning and the ability to adapt one's cognitive strategies to environmental challenges. The Wisconsin Card is therefore believed to involve a wide range of executive actions, including planning, organizing, abstract reasoning, concept formation, cognitive retention, the ability to change, and inhibit impulsive responses.

***Madzley***(3) ***Addiction Profile***

The questionnaire was developed by Madzley in 1998 [11] at the Madzley Institute to assess the consequences of treatment for drug abuse, high-risk behaviors, physical health, mental health, and individual and social functioning of patients (addicts) in the United Kingdom. 60 items are assessed during an interview and questionnaire process. Its validity have been confirmed in European population samples.

The results of the retest indicated the validity of the questionnaire. Its coefficient was reported to be 0.96 for 8 types of narcotics and 0.77 for high-risk behaviors, physical and psychological symptoms, and individual and social performance. The duration was 12 seconds and Cronbach's coefficient of this test is 0.87. The Cronbach's alpha obtained in the behavioral reduction variable in the present study is in the Madzley addiction profile test (0.68).

***Results***

*Investigation of research hypotheses*

***Table (2).*** *Analysis of normality of mood adjustment variable according to independent t-test and one-way variance*

| | ***Variables*** | ***T*** | ***F*** |
|---|---|---|---|
| ***Pre-test*** | *Positive mood adjustment* | -0.097 | 0.859 |
| | Negative mood adjustment | 1.549 | 2.398 |
| ***Post-test*** | *Positive mood adjustment* | 1.318 | 1.738 |
| | Negative mood adjustment | -1.179 | 1.389 |

**Hypothesis 1: Acceptance and commitment-based therapy is effective in regulating mood after cessation of drug use in people undergoing maintenance therapies.**

According to the hypothesis and analysis of the information obtained from the two groups, as it is known, according to the T obtained at the level (0.5 and the two-domain test) and due to the fact that the

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T obtained from the T table (2.048) was smaller Assumption zero is confirmed. In other words, there is no significant difference between the means.

**after cessation of drug use in people undergoing maintenance therapies.**

**Hypothesis 2: Acceptance and commitment-based therapy is effective in executive function**

***Table (3): Independent T of mood adjustment variable (positive mood) in pre-test of experimental and control groups***:

| | *Standard deviation error* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** |
|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | **0.02151** | 2.80000 | 0.362 | 28 | 0.927 |
| ***Assuming that the variances are unequal*** | **0.02151** | 2.80000 | 0.362 | 27.097 | 0.927 |

***Table (4): Independent T of mood adjustment variable (positive mood) in post-test of experimental and control groups :***

| | *Standard deviation error* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** |
|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 2.73078 | 3.60000 | 0.198 | 28 | 0.318 |
| ***Assuming that the variances are unequal*** | 2.73078 | 3.60000 | 0.198 | 25.671 | **O**.318 |

***Table (5) ANOVA of mood regulation (positive mood) in the pre-test of experimental and control groups***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 58.800 | 1 | 58.800 | 0.859 | 0.362 |
| ***Within the group*** | 1917.200 | 28 | 68.471 | | |
| ***Total*** | 1976.000 | 29 | | | |

***Table (6)ANOVA of mood regulation (positive mood) in the post-test of experimental and control groups :***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 97.200 | 1 | 97.200 | 1.738 | 0.198 |
| ***Within the group*** | 1566.000 | 28 | 55.529 | | |
| ***Total*** | 1663/.200 | 29 | | | |

***Table (7): Analysis of normality of executive performance variable according to independent t-test and ANOVA***

| | *Executive function variable* | ***T*** | ***F*** |
|---|---|---|---|
| ***Pre-test*** | *Completion error* | -0.097 | 0.009 |
| | *Interference score* | 1.549 | 2.398 |
| ***Post-test*** | *Completion error* | -0.716 | 0.512 |
| | *Interference score* | -1.179 | 1.389 |

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***Table (8): Independent T of executive performance variable in pretest (completion error)***

| | *SD* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 1.77 | 0.13 | 0.924 | 28 | 0.097 | 0.901 | 0.016 |
| ***Assuming that the variances are unequal*** | 1.77 | 0.13 | 0.924 | 28.00 | 0.097 | | |

***Table(9): Independent T of executive performance variable in post-test***

| | *SD* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 0.30 | 0.933 | 0.480 | 28 | 0.716 | 0.960 | 0.003 |
| ***Assuming that the variances are unequal*** | 0.30 | 0.93 | 0.480 | 27.988 | 0.716 | | |

***Table (10): ANOVA Executive performance variable in pre-test of two experimental and control groups:***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | Significant level |
|---|---|---|---|---|---|
| ***Between groups*** | 0.133 | 1 | 0.133 | 0.009 | 0.924 |
| ***Within the group*** | 398.667 | 28 | 14.238 | | |
| ***Total*** | 398.800 | 29 | | | |

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***Table (11): ANOVA Executive performance variable (performance error) in pre-test of experimental and control groups:***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 6.533 | 1 | 6.533 | 0.512 | 0.480 |
| ***Within the group*** | 357.333 | 28 | 12.762 | | |
| ***Total*** | 363.867 | 29 | | | |

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***Table (12): Independent T of executive performance variable in pretest (interference score)***

| | *SD* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 0.06 | 3.20 | **0.**133 | 28 | 1.549 | 0.346 | 0.919 |
| ***Assuming that the variances are unequal*** | 0.06 | 3.20 | 0.135 | 23.684 | | | |

***Table (13): Independent T of executive performance variable in post-test (interference score)***

| | *Standard deviation error* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 1.47056 | -1.73333 | 0.248 | 28 | -1.179 | 0.627 | 0.241 |
| ***Assuming that the variances are unequal*** | 1.47056 | -1.73333 | 0.248 | 26.834 | -1.179 | | |

***Table (14): ANOVA Executive variable in pre-test (interference score) :***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 76.800 | 1 | 76.800 | 2.398 | 0.133 |
| ***Within the group*** | 896.667 | 28 | 32.024 | | |
| ***Total*** | 973.467 | 29 | | | |

***Table (15): ANOVA Executive performance variable in post-test (interference score):***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 22.533 | 1 | 22.533 | 1.389 | 0.248 |
| ***Within the group*** | 454.133 | 28 | 454.133 | | |
| ***Total*** | 476.667 | 29 | | | |

***Table (16): Analysis of normality of behavioral symptom reduction variable according to independent t-test and ANOVA:***

| ***Behavioral symptom*** | ***Pre-test*** | ***Post-test*** |
|---|---|---|

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| | | |
|---|---|---|
| ***reduction variable*** | | |
| ***T test*** | 0.714 | 0.417 |
| ***F test*** | 0.511 | 0.174 |

***Table (17): Independent T , behavioral symptom reduction variable in pretest:***

| | *SD* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 1.95 | 1.4 | 0.481 | 28 | 0.714 | 0.054 | 4.037 |
| ***Assuming that the variances are unequal*** | 1.95 | 1.4 | 0.483 | 20.935 | 0.714 | | |

***Table (18): Independent T, behavioral symptom reduction variable in post-test:***

| | *SD* | *Mean difference* | *Significant level* | *Degrees of freedom* | ***T*** | *Significant level Equality of variance* | ***F*** |
|---|---|---|---|---|---|---|---|
| ***The variance is assumed to be equal*** | 2.079 | 0.6 | 0.680 | 28 | 0.417 | 0.297 | 1.129 |
| ***Assuming that the variances are unequal*** | 2.079 | 0.6 | 0.680 | 24.026 | 0.417 | | |

***Table (19): ANOVA Pre-test of behavioral symptoms reduction variable:***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 14.700 | 1 | 14.700 | 0.511 | 0.481 |
| ***Within groups*** | 806.367 | 28 | 28.795 | | |
| ***Total*** | 820.967 | 29 | | | |

***Table (20): ANOVA variable of behavioral symptoms reduction in post-test:***

| | *Total squares* | *Degrees of freedom* | *Average squares* | ***F*** | *Significant level* |
|---|---|---|---|---|---|
| ***Between groups*** | 5.633 | 1 | 5.633 | 0.174 | 0.481 |
| ***Within groups*** | 907.733 | 28 | 32.419 | | |
| ***Total*** | 913.367 | 29 | | | |

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**Hypothesis 3: Acceptance and commitment based therapy. It is effective in reducing behavioral symptoms after cessation of drug use in people undergoing maintenance therapy.**

According to the results obtained in the table, the value of F obtained is smaller than the value of F in the table (4.20), so the assumption of zero was accepted and it was concluded that there is no significant difference between the means.

According to Table 7 in the analysis of the normality of executive functions at the level of 0.05 and according to the confirmation of the null hypothesis, there is no significant difference between the executive performance of pre-test and post-test between the experimental group and the control group.

According to Table 8, the obtained T (-0.97) in the pre-test with confidence (0.05) is smaller than the table T with a degree of freedom of 28 (2.048), the null hypothesis is confirmed and it means that There is no significant difference between the two groups in the pretest.

According to Table 4-9, the obtained T (-0.716) in the post-test with confidence (0.05) is smaller than the table T with a degree of freedom of 28 (2.048), the null hypothesis is confirmed and this means There is no significant difference between the two groups in the post-test.

According to the results obtained in Table 4-10, the value of F obtained (0.924) is smaller than the value of F in Table (4.20). Therefore, the null hypothesis was accepted and it was concluded that there is no significant difference between the means. According to the results obtained in Table 4-11, the value of F obtained (0.512) is smaller than the value of F in Table (4.20), so the null hypothesis is accepted and it is concluded that there is no significant difference between the means.

According to Table 4-12, the T obtained (1.549) in the pre-test with confidence (0.05) is smaller than the T in the table with a degree of freedom of 28 (2.048), the null hypothesis is confirmed and it means that There is no significant difference between the two groups in the pretest.

According to Table 13, the obtained T (-1.179) in the post-test with confidence (0.05) is smaller than the T of the table with a degree of freedom of 28 (2.048), the null hypothesis is confirmed and it means There is no significant difference between the two groups in the pre-test.

According to the results obtained in Table 15, the value of F obtained (1.389) is smaller than the value of F in Table (4.20), so the null hypothesis was accepted and it was concluded that there is no significant difference between the means.

According to the results obtained in Table 4-14, the value of F obtained (2.398) is smaller than the value of F in Table (4.20), so the null hypothesis is accepted and it is concluded that there is no significant difference between the means.

According to Table 16 in the analysis of the normality of the reduction of behavioral symptoms at the level of 0.05 and according to the confirmation of the null hypothesis, there is no significant difference between the reduction of pre-test and post-test behavioral symptoms.

According to Table 18, the obtained T (0.417) in the post-test is confidently (0.05) smaller than the table T with a degree of freedom of 28 (1.70), the null hypothesis is confirmed. This means that there is no significant difference in the post-test.

According to the results obtained in Table 19, the value of F obtained (0.511) is smaller than the value of F in the table (4.20), so the null hypothesis is accepted and it is concluded that there is no significant difference between the means.

According to the results obtained in Table 20, the value of F obtained (0.174) is smaller than the value of F in Table (4.20), so the null hypothesis was accepted and it was concluded that there is no significant difference between the means.

**Discussion**

The effectiveness of acceptance and commitment based therapy was not confirmed according to the post-test results on mood regulation and no significant difference was seen between the means of post-test in the experimental group and post-test in the control group. And it has no effect on the mood of people undergoing maintenance treatment after stopping drug use. According to the results of other researches, the therapy based on acceptance and commitment increases the motivation of people to improve and increases the self-efficacy of the person and consequently improves the mood and excitement of the person. This treatment also

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acquaints the person with real experience, which accelerates the regulation of mood in the person [7,9]. As the results of the study show, the reasons why the hypothesis was not accepted in this study and based on the analysis of the data, there was no significant difference between the means of post-test of the experimental group and post-test of the control group on adjusting the mood of people undergoing maintenance treatments are: The effect of interventions other than the independent variable (acceptance and commitment-based therapy), the effect of lack of control of demographic factors including gender, age of subjects, level of education and characteristics and personality of subjects that affected the research hypothesis and obtained results contrary to the hypothesis . Due to the fact that mood is directly related to other factors such as personality and individual differences, hereditary backgrounds, upbringing and environment, nature and family factors, in this study, these interfering factors have not been controlled and have led to Have a significant effect on the independent variable.

The effectiveness of acceptance and commitment-based therapy on executive functions has not been confirmed due to post-test results. There was no significant difference between the means of post-test of the experimental group and post-test of the control group on the executive functions of individuals undergoing maintenance therapies after cessation of drug use. The results obtained in the study were not in line with the research conducted in Iran by Anti-Narcotics (2015)[1] , Beautiful (2013)[9] and colleagues. Experiences and how to deal with the problem and deal with it has been an important factor in improving executive performance. Impairment in the levels of executive functions, which include many different activities of the person, including memory, decision making, planning, response inhibition, etc., causes many problems in the person that training based on acceptance and commitment, and collision Properly with this disorder, it provides logical and appropriate solutions.

As the results of the study show, the reasons that led to the rejection of the hypothesis in this study and caused there was no significant difference between the means of post-test of the experimental group and post-test of the control group on the performance of people undergoing maintenance treatments, except Demographic factors such as gender, age of the subject, level of education, characteristics and personality of the subjects, other factors were also involved, such as the drop in subjects who did not attend several sessions of treatment and this affected the results of the study. Due to the fact that improvement in functional areas requires long-term effort and motivation, and the treatment sessions were in the form of group training sessions, and the treatment could not be paid on a case-by-case basis, and was held in a relatively short time (6 sessions), failed to meet the researcher's expectations.

In other words, acceptance and commitment-based therapy has no effect on reducing behavioral symptoms. According to covariance tests, the results obtained were not consistent with the research conducted in Iran by Samad Shirinzadeh Zadok (2018)[10] , Mohammadzadegan et al (2013)[3], Faizi Manesh and Yahya (2017)[6].

Drugs affect cognitive behavior and functions and cause complex disorders with biological, psychological, social, and spiritual symptoms. Addiction creates a set of cognitive, behavioral, emotional, and physiological symptoms in which a person experiences substance abuse while having significant problems with substance use. Therefore, addiction must be considered physically and mentally [8].

**Conclusion**

According to the test results, there was no significant difference between the means of the post-test of the experimental group and the post-test of the control group on reducing the behavioral symptoms of people undergoing maintenance treatments after cessation of substance use. In other words, acceptance and commitment-based therapy has no effect on reducing behavioral symptoms. Because addiction causes many clinical and behavioral symptoms in the form of physical, psychological, and social symptoms, acceptance-based therapy can greatly improve and reduce these symptoms. Reasons that the hypothesis was not accepted in this study and no significant difference was seen between the means of the two groups, other than the lack of control over variables such as demographic factors, factors such as characteristics and decline of subjects, conditions and how to conduct treatment sessions as a group and not Case-by-case, and therapist experiences have also influenced the research findings.

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