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Effectiveness of Acceptance and Commitment Therapy in Depression and Anxiety in People with Substance Use Disorder

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Abstract

Background: The comorbidity of substance use, mood disorders, and anxiety has been proven in various studies, leading to many clinical implications.
Objectives: This study aimed to evaluate the effectiveness of acceptance and commitment therapy (ACT) in depression and anxiety in individuals with substance use disorder.
Methods: This quasi-experimental study utilized a pretest-posttest design with a control group. The statistical population consisted of all people with substance abuse in Urmia in 2019, including 220 subjects. The sample consisted of 50 individuals with substance use disorders selected by purposive sampling and randomly assigned to experimental and control groups. The experimental group was trained in eight sessions, each lasting 90 min, based on the ACT protocol by Hayes et al. (2004), while the control group did not receive any intervention. The data were obtained using the Beck Depression Inventory and Beck Anxiety Inventory. Pretest and posttest were performed in both groups. The collected data were analyzed by multivariate analysis of covariance (MANCOVA) using SPSS23 software.
Results: The results showed that after controlling for the pretest effects, a significant difference was observed between the mean posttest scores of the two groups in both depression and anxiety ($P < 0.05$).
Conclusions: Acceptance and commitment therapy is an appropriate strategy to effectively improve depression and anxiety in people with substance use disorder.

Keywords: Acceptance and Commitment Therapy, Anxiety, Depression, Substance Use Disorders

1. Background

Substance use disorder is one of the most complex social ills and a physiological/psychological condition resulting from drug dependence (1). Substance use disorder is a psychotic situation with a lack of control over consumption and obsessive-compulsive symptoms (2). In recent years, drug abuse has been deteriorating, especially among young people. In Iran, the statistics indicate that the tendency to abuse drugs more occurs in the age group of 18 to 30 years (3). Death rates in the world are best justified by high drug use. The drug crisis has attracted a great deal of attention among health professions worldwide (4). Substance dependence and abuse have become a socio-therapeutic matter because physical and psychological consequences of addiction reduce life quality and satisfaction, individual actions, and the mental health of drug users. Research shows that drug users have many psychiatric outcomes associated with mental and substance use disorders (5).

A wide range of internal and external conditions can affect a person's tendency to substance use, including depression. Depression is referred to at least two weeks of depressed mood, apathy, and lack of pleasure in everything (6). Chalana et al. (7), in a one-year follow-up study of addicts on treatment, showed that people with recurrent relapses reported a depression score almost twice the other group, and more than 16% of them had very severe depression. Tendency to use drugs is a coping strategy. In other words, substance abusers cannot identify, describe, accept, and tolerate negative emotions; for this reason, they are looking for quick ways to manage stressful situations with adverse effects. Therefore, it can be said that substance abuse is a way to prevent negative emotions such as depression (8).

Anxiety is accompanied by symptoms such as fear, anx-

iety, and ringing in the autonomic nervous system, such as palpitations, sweating, and high blood pressure. Anxiety can also cause many problems by interfering with normal daily functioning (9). Previous studies have also suggested it as a risk factor for alcohol consumption and early problems associated with these disorders among young people (10). Severe anxiety and frustration can reduce the person's control over their behavior and problem-solving ability and predispose them to substance abuse. According to Garland et al. (11), anxiety is a mediating factor in the process of dependence and relapse; anxious life events were also the background of heavy drug use. From psychologists' perspective, a negative perception of what is happening (such as a perceived inability to cope) and what can happen increases negative emotions such as anxiety and depression.

Anxiety disorders and depression have the highest comorbidity rates among psychiatric diagnostic classes (12). About 45 to 67% of people with depressive disorders meet the minimum diagnostic criteria for an anxiety disorder (13).

One of the main problems of all communities, especially developing nations, is substance abuse and the increasing age range of substance use. According to research by Olafsdottir et al. (14), stress, anxiety, and depression are associated with substance use disorders. Therefore, the relevant factors must first be identified, eliminated, and treated to reduce substance abuse. Many therapies derived from the third wave of psychotherapy (mindfulness therapy, roof-based therapy, dialectical behavior therapy, etc.) have improved depression, anxiety, psychological health, and life expectancy in people with substance abuse. They can be used to treat mindfulness for depression (15), anxiety, and depression (16), but the treatment used in this study, which is derived from the third wave of psychotherapy, is based on acceptance and commitment.

Acceptance and commitment therapy (ACT) is one of the methods to improve the psychological symptoms of patients with depression and anxiety disorders by creating and promoting psychological resilience (17). Psychological flexibility means creating and promoting the choice of the solution that is more appropriate among the existing ones, the solution that avoids disturbing thoughts, feelings, desires, and memories (18). Acceptance and commitment therapy increases psychological flexibility through psychological acceptance training, psychological awareness, cognitive failure, clarification of values, and motivation for committed action (19). Unlike cognitive-behavioral therapies, this therapy does not directly focus on changing thoughts and feelings, but teaches people to be aware, accept situations, and observe judgment and evaluation (20). This method helps people identify their values and improve the concept of committed and value-based action by explaining and using metaphors (21). Little research has been done on the effectiveness of ACT in depression and anxiety in people with substance use disorder. For example, Alfonso et al.'s study (22) showed that group therapy based on acceptance and commitment effectively reduced cravings, stress, and anxiety in people with substance use disorder. Kiani et al. (23) also showed the effectiveness of ACT in the cognitive regulation of methamphetamine abusers, reducing stress and anxiety in people with substance use disorders. In a meta-analysis, De Groot et al. (24) showed that ACT was effective in helping people quit drugs and reduce their psychological symptoms. Karimi et al. (25) showed that ACT significantly reduced depression symptoms in people with substance use disorder. Also, Mahmoudi and Ghaderi (26) showed that group ACT reduced anxiety and depression in addicts released from Tabriz Central Prison. The study of Hemmat et al. (8) showed that acceptance and commitment group therapy could effectively reduce anxiety and depression in methadone users.

The incidence of depression and nonclinical anxiety is high but appears to be higher in people with substance abuse due to decreased physical function and financial, family, and psychological problems (such as emotion regulation disorders, rumination disorders, psychological inflexibility, etc.). People with substance abuse have many problems, especially depression and anxiety, and psychological interventions are necessary to improve them. Acceptance and commitment therapy is an appropriate method derived from the third wave of psychotherapy to improve substance abusers' psychological traits. Many problems, symptoms, and manifestations of people with substance abuse, such as violations in emotion regulation, psychological inflexibility, thoughtless behavior, and low anxiety tolerance, make this treatment valuable in such people. The main processes of ACT are to train people how to stop thinking, get rid of disturbing thoughts, and cope with unpleasant emotions (27). Also, little research has been performed on the effectiveness of ACT in depression and anxiety in people with substance use disorder. Thus, this study can have implications for families with substance use disorders, addiction counseling centers, and services.

2. Objectives

This study aimed to evaluate the effectiveness of acceptance and commitment therapy (ACT) in depression and anxiety in individuals with substance use disorder.

3. Methods

3.1. Population and Design

The current applied quasi-experimental study utilized a pretest/posttest design with a control group. The statistical population consisted of all people with substance abuse referred to the counseling centers Rahe Sabz, Khial, Honare Zendegi, Marefat, Rahe Omid, and the Addiction Treatment Center in Urmia, Iran, in 2019 (n = 220 people). The study sample consisted of 60 individuals with substance use disorders selected by purposive sampling, but in the end, because the participation in the research was voluntary, the subjects were dropped; therefore, 50 people (25 people per group) were selected as a sample. The selected individuals were randomly divided into two equal groups (25 in the experimental group and 25 in the control group); one of the groups was randomly selected as the experimental group and the other as the control group. Inclusion criteria were as follow: (1) a score higher than 19 on the Depression Scale and higher than 16 on the Beck Anxiety Scale; (2) confirmation of the coexistence of depression and anxiety symptoms based on a structured clinical interview; (3) having a minimum of middle-school education; and (4) filling out the informed consent form, committing to attending treatment sessions on time. Exclusion criteria were as follow: (1) having severe withdrawal symptoms; (2) having severe suicidal thoughts; (3) having a psychotic disorder or depression disorders with psychotic symptoms; (4) failure to complete the informed consent form and dissatisfaction with continuing cooperation in the research; (5) absence from more than two treatment sessions; (6) history of using psychiatric drugs and receiving psychological interventions in the last six months; and (7) lack of cooperation in doing homework and completing questionnaires.

3.2. Study Questionnaires

3.2.1. Beck Depression Inventory, Second Edition

The Beck Depression Inventory, Second Edition, is an edition of the Depression Inventory and a self-report index for measuring depression symptoms in various clinical and nonclinical populations, developed by Beck, Steer, and Brown in 2000. This test is a 21-item screening tool performed in groups and individually. Each question had four options, and each answer was scored on a scale of 0 to 3. The maximum total score was 63, and the minimum was zero. Higher total scores indicated more depression. Depression severity was determined as no (score 0 - 9), mild (score 10 - 18), moderate (score 19 - 29), and severe depression (score 30 - 63) according to the Beck depression standard. Beck et al. reported the internal consistency of this scale from 0.73 to 0.92, and Cronbach's alpha coefficients of 0.86 for the patient group and 0.81 for the non-patient group. In the study of Stefan-Dobson and Mohammadkhani (28), Cronbach's alpha coefficient of this test was reported to be 0.96. The validity and reliability of the questionnaire were measured in internal studies. Fata et al. (29) used this questionnaire on a sample of 94 Iranians, and the Cronbach's alpha coefficient, the two-half correlation coefficient, and the one-week retest validity coefficient were reported as 0.91, 0.89, and 0.94, respectively. In the present study, the scale's reliability was obtained as 0.86 by Cronbach's alpha method.

3.2.2. Beck Anxiety Inventory

This 21-item self-report questionnaire was designed by Beck et al. in 1988. To measure the severity of clinical anxiety symptoms in individuals, we scored questions using a four-point Likert scale (0 = never to 3 = always), so a minimum score of 0 and a maximum of 63 are obtained, with higher scores indicating more anxiety. A score of 0 to 7 shows no anxiety, 8 to 15 mild anxiety, 16 to 25 moderate anxiety, and 26 to 63 severe anxiety. The correlation of items was obtained between 0.30 and 0.71, indicating the optimal validity of the instrument, while its reliability was reported as 0.92 by Cronbach's alpha method in 1,086 patients with anxiety and emotional disorders. Its reliability was also reported to be 0.75 with a one-week retest method (30). In another study in the United States, Fydrich et al. examined 40 outpatients with anxiety disorder and reported instrumental convergence validity with the subspecies trait anxiety of 0.58, state anxiety of 0.47, and reliability of 0.94 using the Cronbach's alpha method (31). In Iran, Kaviani and Mousavi (32) reported the instrument's reliability as 0.92 with Cronbach's alpha method and 0.83 with the one-month retest method. In the present study, the scale's reliability was 0.74 by Cronbach's alpha method.

The research method was as follows. After coordination with the Vice-Chancellor for Education and Research of Urmia University of Medical Sciences, the necessary coordination was made with the counseling centers Rahe Sabz, Khial, Honare Zendegi, Marefat, Rahe Omid, and the Addiction Treatment Center in Urmia. Among those who scored above 19 on the Depression Scale and above 16 on the Anxiety Scale, clinical interviews were conducted to select 60 people willing to participate by purposive sampling. They were randomly assigned to experimental and control groups.

Before submitting the questionnaires and collecting information, the sample was individually informed after receiving necessary explanations about the research objectives and scope. After obtaining the written consent of individuals to participate in the intervention, questionnaires were provided to complete. In the next step, the

experimental group received ACT in eight sessions of 90 min. These sessions are summarized in Table 1. The control group had appointments with the therapist but received no specific active treatment. The posttest data were collected two weeks after the intervention. Due to the voluntary participation in the research and subjects' drop-out, 50 people were examined as the research sample. To meet ethical principles, we ensured information confidentiality and the preparation of subjects individually for the study. Data were analyzed by descriptive statistics and multivariate analysis of covariance (MANCOVA) in SPSS-23 software.

4. Results

The mean age was 39 $\pm$ 5.54 years in the experimental group and 41 $\pm$ 6.43 years in the control group. Based on patients' demographics, no difference was observed between the experimental and control groups (Table 2). Also, descriptive statistics are presented in Table 3.

As seen, the scores of depression and anxiety reduced in the posttest in the experimental group, which implies the improvement of depression and anxiety in individuals, but they did not change in the control group.

Then, MANCOVA was performed to investigate the research hypothesis after its assumptions were investigated. The Kolmogorov-Smirnov test was used to study the normal distribution of data. The results showed that the distribution of dependent variables in the pretest/posttest was normal, and the data had a normal distribution ($P < 0.05$). We used the Mbox test to examine the homogeneity of variances from the Levin test and assess the assumption of covariance homogeneity. Therefore, the MANCOVA assumptions of variance-covariance matrix normalization and variance equality were confirmed and established. A summary of MANCOVA for the effectiveness of ACT in depression and anxiety in people with substance use disorder is presented in Table 4.

As can be seen in Table 4, the significance level of all tests allows the use of MANCOVA. These results showed a significant difference between the experimental and control groups regarding dependent variables. Eta-squared shows that the difference between the two groups was significant concerning the dependent variables. The MANCOVA results related to the mean scores of depression and anxiety in the experimental and control groups in the posttest stage are presented in Table 5.

As Table 5 shows, after adjusting for pretest scores, ACT had a significant effect on posttest depression ($P < 0.008$). In other words, these findings indicated a depression reduction in the experimental group compared to the control group. Also, ACT had a significant effect on anxiety in the posttest stage ($P < 0.045$). There was a significant difference in the mean scores of anxiety between the experimental and control groups; in other words, the findings indicated decreased anxiety in the experimental group compared to the control group. The effective rates were 0.32 and 0.86 for depression and anxiety, respectively. That is, 32% of the variance of depression and 86% of the variance of anxiety are based on ACT.

5. Discussion

This study aimed to investigate the effectiveness of ACT in depression and anxiety in people with substance use disorder in Urmia. Based on the results, ACT had a significant effect on depression and anxiety in people with substance use disorders. The present research results showed that ACT was effective in reducing depression in people with substance use disorders in the experimental group. Subjects in the experimental group reported a significant reduction in their depression after receiving the therapeutic intervention compared to the control group. This finding is consistent with the results of previous research (33, 34). Hemmat et al. (8) showed that group ACT could effectively reduce anxiety and depression in methadone addicts. Depression is one of the most common causes of dementia in people with substance abuse. This psychological disorder leads to decreased energy levels and interest, persistent guilt, difficulty concentrating, anorexia, suicidal ideation, and changes in cognitive abilities. Drug users also suffer from depression, which adds to their previous problems. People with more depression tend to chew on depressive thoughts. This rumination is often accompanied by the patient trying to find the cause of depression. This will divert the understanding of the current situation (35).

In this regard, the goal of treatment is acceptance and commitment as an alternative to the four factors of psychological flexibility (fusion, evaluation, avoidance, and reasoning). These alternatives are as follow: (1) accept it as it is, not as they show it; for example, accepting a thought (I am not attractive) only as a thought and not what that thought says (worthlessness); (2) choice: it means that instead of dealing with adverse events, one chooses important and valuable directions and goals in life; and (3) action: it means that after choosing the goals, the person is committed to moving towards them. The basis of ACT is based on the belief that the acceptance of inner experiences is a practical alternative approach to dealing with thoughts and feelings. Acceptance and commitment therapy and other mindfulness-based approaches challenge the idea that inner experiences need to be adjusted to improve psychologically. According to ACT, clients do not have to change their inner experiences to achieve what

Table 1. The Acceptance and Commitment Therapy Protocol

Session	Protocol
1	Introducing members, describing group rules, treatment approach description, and doing the pretest
2	Assessing individuals' problems from an ACT perspective and extracting the experience of avoidance, integration, and individual values
3	Specifying the inefficiency of controlling adverse events using metaphors and teaching the tendency towards negative emotions and experiences
4	Learning to separate assessments from personal experiences of bad cup metaphor and taking a position of observing thoughts without judgment
5	Communicating with the present and considering yourself as a metaphor for the chessboard and teaching mindfulness techniques
6	Identifying people's life values and measuring the values based on their importance
7	Providing practical solutions to remove barriers while using metaphors and planning for commitment to pursue values
8	Summarizing the concepts explored during previous sessions, asking members to explain their achievements to the group and their survival plan, conducting the posttest

Table 2. Comparing Demographics Between Experimental and Control Groups

Variables	Experimental, No. (%)	Control, No. (%)	Statistical Comparison	
			χ^2	P-Value
Marital status			0.000	1
Married	15 (60)	15 (60)		
Not married	10 (40)	10 (40)		
Education			1.35	0.508
High school	5 (20)	7 (28)		
Diploma	8 (32)	10 (40)		
Master or higher	12 (48)	8 (32)		
Age			3.33	0.189
25 - 30	10 (40)	5 (20)		
31 - 35	10 (40)	10 (40)		
36 - 40	5 (20)	10 (40)		
Job			1.31	0.518
Unemployed	9 (36)	7 (28)		
Self-employed	10 (40)	14 (56)		
Employed	6 (24)	4 (16)		

Table 3. Descriptive Statistics of Depression and Anxiety Before and After Intervention in Experimental and Control Groups [a]

Variables and Phases	Experimental Group	Control Group
Depression		
Pretest	26.60 ± 2.97	25.52 ± 2.20
Posttest	19.04 ± 3.66	27.20 ± 5.27
Anxiety		
Pretest	28.36 ± 6.06	28.64 ± 5.80
Posttest	20.12 ± 5.56	29.52 ± 6.48

[a] Values are expressed as mean ± SD.

they want; instead, they are helped to see how trying to control internal experiences is ineffective (36). Perhaps the reason for the effect of ACT on the symptoms of depression is that this approach targets the functioning of cognitions and emotions rather than the transformation and frequency or situational sensitivity of cognitions. Changing the function of cognition and excitement seems simpler than changing their form and content, perhaps because functional change is more objective than changing the form and content of cognition and emotion, and one can feel in control of the function of cognition and emotion.

The present study results showed that ACT was effective in reducing anxiety in people with substance use disorders in the experimental group. Subjects in the experimental group reported a significant decrease in their anxiety after receiving the treatment intervention compared to the control group, consistent with similar studies' findings (8, 33, 34, 37, 38). In the present intervention, the concept of acceptance was learned through metaphors and exercises, and the patients were asked to practice acceptance in the face of different situations, especially situations related to their illness, and report the results in ses-

Table 4. Multivariate Analysis of Covariance to Compare the Mean Scores of Depression and Anxiety in Individuals with Substance Use Disorder in Experimental and Control Groups

Status	Test	Value	F	DF Hypothesis	DF Error	P	Eta
Posttest group membership	Pilay effect	0.348	6.134	2	43	0.007	0.384
	Wilks Lambda	0.652	6.134	2	43	0.007	0.384
	Hoteling effect	0.533	6.134	2	43	0.007	0.384
	The largest root on	0.533	6.134	2	43	0.007	0.384

Table 5. Results of Multivariate Analysis of Covariance for Depression and Anxiety in People with Substance Use Disorder in Experimental and Control Groups

Dependent Variables	Source	Total Squares	DF	Average Squares	F	P	Eta
Depression	Group	295.546	1	295.546	13.81	0.008	0.322
Anxiety	Group	164.632	1	164.632	6.011	0.045	0.866

sions. In fact, non-acceptance means that the person seeks to control his inner events (illness, feelings, and thoughts that follow) and causes psychological inflexibility. In each patient, the concept of desire was introduced as an alternative to control and understand related exercises. Being inclined to experiences increased the connection to the present and thus reduced anxiety. Another critical component of ACT is the values. Patients were asked to identify their values, set goals for those values in their lives, and commit to living their lives to achieve those goals based on values. In fact, this part of the treatment helps consumers regain their motivation for life, a rich and valuable life that is primarily the goal of ACT. As a result, patients with substance abuse, by performing cognitive fault drills, were disillusioned with the disease-related thoughts and became less associated with them, leading to anxiety reduction. The self as a context, which is one of the six factors of ACT, is a transcendent sense of self that can be accessed through the processes of mindfulness and cognitive failure (39). This treatment helped consumers see themselves as independent of their illness, not to identify with the thoughts and feelings of the illness and with their body, or more precisely, with their illness. This was facilitated by the observer practice, which helped the consumer to be merely an observer, an external observer separated from the body, thoughts, and feelings, thus facilitating acceptance as a context.

The current study results indicated that the therapeutic intervention affected other components by affecting psychological resilience. Psychological resilience is the ability to communicate fully with the present as a conscious human being and change or perpetuate behavior in the service of one's worthwhile goals, using the six primary processes of acceptance and commitment therapy: Acceptance, self-failure as a context, connection with the present, values, and committed action. The purpose of acceptance is to reduce the need for thought retention, although it should not be mistaken for tolerance or submission; in fact, with awareness of inner experiences and active acceptance without an attempt to reduce them, clients are empirically confronted with the paradoxical effects of controlling thoughts and emotions, and the difference between the dysfunctional results of controlling thoughts and emotions. Through various metaphors and exercises, clients learn the difference between acceptance and tolerance and practice acceptance skills in complex internal events. With various exercises, they learn to experience intense emotions or pay attention to intense physical emotions without being harmed. Thus, instead of controlling and avoiding the symptoms of anxiety and depression, by changing the context and turning it into acceptance of all internal events, they can be experienced without being harmful (39). The purpose of this treatment is not to change the signs and symptoms but to change people's relationship with their thoughts and feelings so that they no longer see them as signs. According to a functional context that is the theoretical basis of ACT, the ultimate goal is to change the painful thoughts and feelings of the old problem, the abnormal traumatic signs that prevent a meaningful and rich life into a newer form, and the natural human experiences that are part of a rich and meaningful life. In fact, instead of just focusing on reducing the symptoms, we changed the context in which these disturbing thoughts (symptoms of depression) or avoidance (symptoms of anxiety) occurred, and then we helped them act in a way that is more in line with their values (36). In an ACT model, addressing empirical needs is not necessarily the client's goal; the goal is to help the client discover and clarify his/her values, and to some extent, to avoid scary situations, and it is argued to some extent that avoiding scary

situations may interfere with moving in the direction of values.

Acceptance helps clients choose activities in line with their values and abandon control strategies. In the ACT, setting goals and clarifying values are essential. Values are introduced as a general way of life. Goals and values are the client's own choices. This therapeutic phase serves two practical purposes: First, it encourages clients to choose their own goals and values, and second, it highlights goals that may not be clear (40). In the field of working with values in this research, clients were also trained to examine their values in different areas and determine their necessity in each area to finally focus on abandoned problems and move in the direction of values, and finally, identify goals in the direction of values. It seems that the present intervention improved the symptoms of depression and other psychological components by affecting the values of addicted people. In general, according to the characteristics of depressed people, which include avoiding or escaping from mixing with depressing thoughts and memories, trying to control thoughts and feelings, cognitive fusion, ruminating and repetitive thought patterns, negative cognitions, self-underestimation, pursuit of inconsistencies with values and mistakes in the pursuit of value goals, intervention based on ACT in the present study could help clients change the initial avoidance patterns, increase full acceptance of a wide range of objective experiences, improve quality of life and flexibility, change judgments, eliminate the power of depressive thoughts, reduce rumination, gain a sense of change, and identify their goals and values, which are effective in depression reduction in these people.

This treatment first tries to increase the person's psychological acceptance of mental experiences (thoughts and feelings) and reciprocally reduce ineffective control practices. Clients are taught that any action to avoid or control these unwanted mental experiences is ineffective or has the opposite effect and exacerbates them and that these experiences should be accepted without any internal or external reaction to eliminate them entirely. In the second step, the person's psychological awareness is increased in the present moment; that is, he/she becomes aware of all his/her mental states, thoughts, and behavior in the present moment. In the third stage, the person is taught to separate him/herself from these mental experiences (cognitive fault) so that he/she can act independently of these experiences. Fourth, the therapy tries to reduce the excessive focus on the visual self of the personal story (such as being a victim) that one may create in mind. Fifth, the therapy helps the individual to know and clearly identify his/her personal values and turn them into specific behavioral goals (clarifying values), ultimately motivating him/her to take committed action, that is, to work towards specific goals and values. That is, to work towards specific goals and values along with accepting mental experiences, these mental experiences can be depressive, anxious, obsessive thoughts, etc. This method increases the effectiveness due to its underlying mechanisms such as acceptance, awareness-raising, desensitization, presence at the moment, observation without judgment, confrontation, and release while reducing the symptoms of depression and anxiety (41).

In general, the present study focused on the effectiveness of ACT on depression and anxiety in people with substance use disorders. According to this research, ACT reduced depression and anxiety in people with substance use disorders. As a result, it can be inferred that emotional control strategies, behavioral commitment exercises, value clarification, failure, and acceptance can reduce depression and anxiety in substance abusers. The purpose of the study was to help people who were suffering from psychological problems in addition to substance abuse. As a result, this training helped them accept their thoughts and commit to making changes. In this treatment program, addicts were helped to recognize the nature of the inefficiency of their disturbing thoughts and ultimately move towards their values.

One of the limitations of this study was the lack of a follow-up due to time constraints for measuring the effectiveness of this approach after treatment. Another limitation was using self-reporting tools (questionnaires) to measure depression and anxiety, which may have made patients present a good image. In general, despite the existing limitations, due to the effectiveness of this therapeutic approach, a practical step in this study was taken to improve the psychological problems of people with substance abuse. Due to the mutual relationship between mental health and physical health, the favorable mood of people with substance abuse could help them reduce their consumption and encourage them to quit. It is suggested that the effectiveness of ACT in depression and anxiety be compared with other third-wave therapies, including metacognitive therapy, dialectical behavior therapy, metadiagnostic therapy, mindfulness therapy, etc. Also, due to the positive effect of ACT on reducing depression and anxiety symptoms in people with substance use disorder, it is suggested that this program be used to treat substance use disorder.

Footnotes

Authors' Contribution: Zohreh Hashemi designed the study and wrote the manuscript; Sanaz Eyni conducted the

statistical analysis; Matine Ebadi contributed to data collection.

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