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Comparison of the effectiveness of Acceptance and Commitment-Based Therapy (ACT) and Quality of Life therapy (QOLT) on self-destructive behaviors and emotional cognitive regulation in substance abusers

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Abstract

Introduction: The purpose of this study was to compare the effectiveness of Acceptance and Commitment-Based Therapy and Quality of Life therapy (QOLT) on self-destructive behaviors and emotional cognitive regulation in substance abusers.

Materials and Methods: In this clinical trial, forty-five men with substance dependency aged over than 20 y ears who referred to the Mashhad Substance Abuse Clinics during 2019 and they were undergoing treatment s elected through convenient sampling method. The selected men were randomly divided into 3 groups (two ex perimental groups and one control group). The experimental groups received Acceptance and Commitment T herapy (ACT) or quality of life skills training and the control group received no training. Data were collected using the Cognitive Emotion Regulation Questionnaire (CERQ) and the Self-Destructive behaviors questionn aire. Data analyzed through descriptive statistics, covariance analysis and SPSS software.

Results: The results showed that the therapeutic methods used in this study were effective on self-destructive behaviors and cognitive emotional regulation ($P<0.01$). Also, the results showed no significant difference bet ween the two treatments.

Conclusion: According to the results of this study, Acceptance and Commitment-Based Therapy and Quality of Life therapy (QOLT) are effective on self-destructive behaviors and emotional cognitive regulation in subs tance abusers.

Keywords: Acceptance and commitment therapy, Emotional cognitive regulation, Quality of life therapy, Self-destructive behaviors, Substance abuse.

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Introduction

Substance abuse or the so-called "substance addiction" is one of the most important problems in the modern world. Nowadays, substance abuse, with its destructive effect on human health, imposes huge psychological, economic, social and other costs on the individual and society, so that this phenomenon can be considered as one of the major concerns of human societies (1). Since substance abuse has detrimental effects on growth and development, it is a serious and worrying threat and is considered as a chronic, recurrent, multidimensional disorder with biological,

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cultural, psychological, social, behavioral effects and consequences (2). Despite widespread efforts to tackle this complex global problem, substance control and substance addiction strategies continue to rise, and the world is experiencing astonishing statistics on the prevalence of substance abuse over the past decade (3). Speculative diversification of substance derivatives has led to a decline in the age of consumers, with youth and adolescents in each community being considered as key and central targets (4). The results of the epidemiological study of the United Nations Office on Substances and Crime (UNODC) estimated that 455 million substance abusers aged 15 to 62 years. Of these, about 40% are addicts in the field of cannabis and about 20% are addicts with traditional and the rest are addicted to psychedelic substances. Also, according to the Centers for Disease Control Research Report 2015, approximately 17 million of substance abusers lost their lives due to physical and mental disorders (5). In Iran, post-traumatic substance abuse disorders, cardiovascular disease and depression are in the fourth category (6).

Substance abuse is a multifactorial health disorder that often has a chronic, recurring and debilitating course. Substance addiction or substance dependency (WHO) has clinical, behavioral and cognitive symptoms that is caused by social and psychological factors on the one hand and biological and pharmacological factors on the other hand (7). Social factors are more at the onset of consumption and biological factors are associated to continuing of abuse (8). The fourth edition of Statistical and Diagnostic Guide to Mental Disorders, has two distinct categories for substance-related disorders: substance abuse, and substance dependency. Substance abuse- the use of a substance, in spite of its negative or undesirable consequences, and the abuse of a substance by a person who has had frequent, but intermittent problems due to excessive use of the substance. Substance dependence means continuing to use the substance despite its negative consequences and the one who was dependent on the substance. The term psychological dependency was used when people were changing their lives so that constant abuse ensured that one focuses on the substance and its use. In this person, life should be neglected, such as work, social, and family commitments. Physical dependency occurs when the body adapts, after prolonged exposure to a substance, and gradually recognizes that its presence in the body is a normal matter but in DSM 5, it has made a very revolutionary and radical change in its class, by eliminating two independent classes of "substance abuse" and "substance dependency" and a single name replaces them with substance and substance abuse disorders. The rationale behind the two-floor merger is that DSM 5 probably concluded that there was no clear boundary between substance abuse and substance dependency and that both were on the same dimension (9).

Among the factors associated with substance tendency are the prominent role of the inability to control destructive behaviors, intolerance, and emotion regulation. People who are unable to control their destructive emotions are more likely to use addictive substances. Cognitive emotion regulation is thought of as the processes by which individuals modulate their emotions to respond to conscious and unconscious environmental expectations, and is a particular form of self-regulation. Overall, emotion regulation is one of the key factors in successful well-being and plays an important role in adapting to stressful life events (10). Dependent individuals have difficulty identifying their own and others' emotions, causing them to develop positive, constructive, and communicative emotions with others whose abnormalities are attributable to substance abuse (11). Effective emotion management reduces the risk of substance abuse when a person is pressured to use substances by peers (12).

Those with low emotion regulation are more likely to be drawn to substances to cope with their negative emotions (13). One of the theories that psychologically links the relationship between emotion regulation and substance abuse tendency is the Kantzian self-treatment theory. Khantzian believes that because substance abusers describe their negative emotions as unbearable and irritable and unable to manage these emotional states without relying on substances, they are relieved by consuming their preferred substance. Their emotional states become more tolerable for them (14). Overall, difficulty regulating emotion is one of the problems of substance abusers (2). Goldsmith in a pilot study, by manipulating emotions, showed that individuals tend to use alcohol as a coping and emotion regulation strategy. The results of research conducted by McDermott et al. supported the central role of difficulty in emotion regulation in predicting post-traumatic

stress disorder among crack / cocaine dependents. Also, other researchers showed that cocaine-dependent individuals exhibit significant deficits in emotion regulation that are associated with greater stress response and reduced impulse control (15). Ejeh et al. in a study comparing emotion regulation, found that substance abusers had a significant difference with the normal control group in terms of difficulty adjusting to the emotion regulation strategies (16). Also, Najafi et al. found that in the field of substance dependence prevention, teaching people how to improve emotion regulation can be helpful (12,13,17).

Researches have shown that another influential factor in assessing readiness for rational substance use disorder is self-destructiveness (17). By definition, self-destructive behaviors include acts such as deliberate self-harm, deliberate or non-lethal action, whether physical or poisoning by substance with the knowledge that they are potentially dangerous (16).

Leventhal has focused on the role of modeling in his research aimed at identifying the factors influencing self-destructive behaviors. The role of social influences on the self-destructive behaviors of individuals has been proven today (18). Brigham and Solomon stated in 1991 that behaviors such as smoking, inadequate exercise, alcohol, and medication to relieve stress and inappropriate diet were among the major contributors to self-destructive behaviors.

In present, stresses and social pressures are more than any other period and endanger one's mental health and leads o mental disorders and self-destructive behaviors including substance abuse (19).

Numerous studies have been conducted on the relationship between lack of emotion control and the inability to manage aggressive and self-destructive behaviors that have confirmed their significance. They showed that there is a link between self-destructive behaviors and aggression toward self and substance addiction (18-28).To treat people with substance abuse disorders caused by repeated and abnormal substance abuse, medications or alcohol and etc. that are often associated with a great deal of disorder, cognitive dysfunction and emotions. Use different treatments and effective approaches to treating substance abuse include: behavioral therapy including traditional behavioral management, cognitive behavioral therapy, motivational interviewing, medication consultant, couple therapy, and family therapy (29-34). Recently, contextual cognitive-behavioral approaches such as acceptance and commitment-based therapy (35), dialectic (36), mindfulness-based relapse prevention (37) for the treatment of substance abuse disorders are used. A key difference between contextual behavioral cognitive approaches and traditional cognitive behavioral approaches is the emphasis on mindfulness and acceptance strategies to reduce the intrinsic effects on substance use behaviors (such as context change and function, thus craving, distress, and consumption thoughts are less likely to occur) which lead to substance abuse (24). Acceptance and Commitment Based Approach is one of the famous third generation models of Cognitive Behavioral Counseling that utilizes mindfulness, acceptance and cognitive dissonance skills to enhance psychological flexibility (34). If this approach is applied to substance abuse disorders, clients, instead of consuming the substance, accept ways and minds of internal experiences (eg, in response to craving or escaping negative emotion) while moving forward in develop meaningful patterns of activity that are inconsistent with substance abuse (20). Experimental data from acceptance and commitment therapy in the treatment of multiple disorders are increasing. Acceptance and commitment therapy has shown that the 12-step approach is better for multiple substance abusers in substance abuse disorders (33,38-41). There are also acceptance and commitment-based therapies in the treatment of Marijuana dependence (35), methamphetamine (36), methadone (31), alcohol dependence (42) and smoking cessation (43).

During the last three decades, attention to quality of life as an important factor in assessing the therapeutic outcomes and effectiveness of treatment in physical and mental illnesses has increased (44,45). Quality of life is a concept that expresses the mental, physical, psychological and social impacts of the disease on the patient's daily life, which also significantly affects his or her personal satisfaction and success in life. One of the most important issues in assessing quality of life is substance abuse. Substance abuse has many consequences and has a profound effect on one's physical, mental, and social well-being. In addition, inappropriate lifestyle is one of the factors that lead one to consuming substances (46). Various treatment programs have been introduced in the past few years to treat addiction, but some patients continue to be unsuccessful in these treatments. Perhaps this is

because excessive attentions to negative emotions and symptom improvement in substance abusers and addicts have deterred psychotherapists from the abilities and strengths of psychiatric patients, including substance abusers. In this regard, QOLT is a model that seeks to create subjective well-being and life satisfaction. Based on this therapeutic approach, the 16 main areas of life are examined through a five-way model called CASIO (Circumstance Attitude Standards of Fulfillment Importance Overall Satisfaction): 1) living conditions; 2) attitudes; 3) the standards we have for ourselves and we define; 4) values; and 5) overall life satisfaction (44). In literature, there is gap about the efficacy of acceptance and commitment-based treatment in individuals with substance abuse and the effectiveness of quality-of-life psychotherapy (QOLT) in these individuals. Given the increasing trend of people with substance abuse and addiction at different levels of society as well as the importance of addressing the complex phenomenon of addiction as a "disaster of the century", the need for deep and multifaceted interventions is felt. Therefore, considering the necessity of addiction treatment centers for effective and modern therapies, the present study aimed to investigate and comapre the impact of acceptance and commitment therapies and quality of life based psychotherapy.

Materials and Methods

In this clinical trial, forty-five men with substance dependency aged over than 20 years among individuals who referred to the Mahshad Substance Abuse Clinics during 2019 and they were undergoing treatment selected through convenient sampling method.

The selected men were randomly divided into 3 groups (two experimental groups and one control group). The experimental groups received Acceptance and Commitment Therapy (ACT) or quality of life skills training and the control group received no training. This clinical trial was carried out under supervision of the ethics committee of Islamic Azad University of Neyshabur Branch and all research cases including informed consent and ethical considerations were reviewed and applied in accordance with the rules of this committee. Inclusion criteria were: substance dependency, aged over 20 years, diagnosis of substance addiction for one year prior to the study, lack of concurrent psychotherapy counseling during study, no use of psychiatric medicatinos, possibility of attending treatment sessions and training as well as volunteering was considered.

Research instrument

A) Self-Destruction Questionnaire: This questionnasire is made to evaluate the self-destructive behaviors (such as intentional self-harm, deliberate or non-fatal injuries, whether poisoning with the subastances that they were probably dangerous despite awareness about harms of substances. In Iran, Aghamohammadian et al. used the questionnaire in two parts (31-item and 10-item) to evaluate these behaviors among university students. The items are scored in 0-4 range (at al to severely). The Cronbach alpha was reported higher than 0.80 which suggest the good psychometric properties in Iranian population (47).

B) Cognitive Emotion Regulation Questionnaire (CERQ): It designed by Garnefsky and Carrage (48) and concluded 11 items to measure cognitive emotion regulation strategies in response to life-threatening and stressful life events on a five-point scale ranging from one (never) to five (always). The subscales of this questionnaire are: self-blame; other blame; focus on thought / rumination. The higher score indicates more individual use of that cognitive strategy. The psychometric properties of Cognitive Emotion Regulation Questionnaire have been confirmed in foreign studies. The results of factor analysis using principal components method identified nine predicted factors. Test-retest reliability showed that cognitive coping strategies were relatively stable and the internal consistency of the scales was confirmed by Cronbach's alpha coefficients of 0.80 (48). The Persian version of the Cognitive Emotion Regulation Questionnaire was validated by Besharat and Hasani (49,50). Besharat reported Cronbach's alpha coefficients for the subscales of this questionnaire as 0.67 to 0.89 in a preliminary study (49). After selecting the participants and dividing them into three groups randomly, the experimental groups received 10 sessions of treatment with the focus of both sessions on one of the research variables. The first experimental group received intervention based on Acceptance and Commitment Therapy (51,52) and the second experimental group received psychotherapy based on Quality of Life Improvement (44). Intervention sessions are described in the following tables:

Table 1. Description of ACT intervention sessions Session

Session	Content
1	Cognitive-emotional self-awareness skills
2	Emotion management skills
3	Cognitive fusion, thanksgiving
4	Faulting skills from depressing thoughts and feelings
5	Acceptance skills (unconditional self-reliance and other interpersonal relationships)
6	Understanding the concept of present-day communication, identifying and refining values
7	Your observer skill
8	Anger control skills (refining values)
9	Dealing with commitment, personal problem solving skills
10	Review and summary

Table 2. Description of QOLT intervention sessions

Session	Content
1	Self-esteem and self-esteem skills based on everyday issues
2	Disturbance skill and the CASIO technique
3	Disturbance skill and the CASIO technique
4	Attention awareness skills and the CASIO technique
5	Attention awareness skills and the CASIO technique
6	Cognitive tuning skills and the CASIO technique
7	Cognitive tuning skills and the CASIO technique
8	Effective communication skills and the CASIO technique
9	Effective communication skills and the CASIO technique
10	Browse concepts, questions and answers, modifying techniques and skills

Data analyzed through descriptive statistics, variance analysis and SPSS software.

Rezalt

The mean age and standard deviation of participants were 29.91 ± 6.06 years. About 35.6% of the sample were single, 37.8% were married and 26.7% were divorced. Also 33.3% if them had intermittant or elementary education while 40% had diploma and 26.7% of them had higher education. The descriptive statistics of the scores of the questionnaires were presented in Table 3.

Table 3. The scores of the questionnaires of groups in 3 phases

	ACT	QOLT	Control
Self-destructive			
Pre-test	21.47 ± 6.479	19.00 ± 7.512	22.07 ± 6.364
Post-test	13.13 ± 7.090	11.93 ± 3.348	22.80 ± 4.313
Cignitive emotional regulation			
Pre-test	82.33 ± 37.932	75.93 ± 32.504	90.47 ± 30.484
Post-test	106.13 ± 35.667	110.80 ± 29.692	81.00 ± 26.406

Multivariate analysis of covariance was used to evaluate the effectiveness of psychological therapy on cognitive emotion regulation and distress tolerance. One of the assumptions of this analysis is the equality of error variances. The results of Levon's test are presented in Table 4.

Table 4. Levene's test of equality of error variances

	F	Df1	Df2	Sig
Post-test cognitive emotional regulation	2.536	2	42	0.091
Post-test Destructive behaviors	3.242	2	42	0.049

The variance-covariance matrix equality assumption was also tested by Box test and the results showed that the hypothesis was established (F= 1.745, M= 11.245, P<0.05). Multivariate analysis of covariance was therefore performed and the results indicated a significant difference between the groups in the linear combination of components (Effect Size=

1.000, P<0.001, F=18.810, Lambda Wilks=0.501). Univariate analysis of covariance as described in Table 5 was used to investigate the differences.

Table 5. Results of covariance analysis to examine patterns of difference

Dependent variable	Cognitive emotion regulation	Self-destructive behaviors
Sum if squares	8005.298	647.852
df	40	40
Mean square	200.132	16.196
F	32.432	17.654
Sig.	0.000	0.000
Effect size	0.563	0.521

As can be seen in Table 5, there is a significant difference in both variables. In other words, the effectiveness of interventions has been effective in improving cognitive emotion regulation scores and reducing self-destructive behaviors. Benferoni test was used to investigate the differences between groups. The results showed that in both cognitive emotion regulation and self-destructive behaviors, both acceptance and commitment therapy and quality of life based psychotherapy intervention were different from the control group (P<0.01) but there was no significant difference between the two experimental groups. The effect size in cognitive emotion regulation was 0.488 in acceptance and commitment based therapy and 0.762 in quality of life therapy

Discussion

The results of this study showed the efficacy of two methods of treatment, Acceptance and Commitment Based Therapy (ACT) and Quality of Life Therapy (QOLT), on increasing cognitive emotion regulation in substance abusers referring to Mashhad clinical centers. The results of the present study were in line with the study of Forouzanfar et al. (53) in which the effect of acceptance-based treatment on distress tolerance and anxiety susceptibility in addict women was significant.

The results of the study by Keogh et al. showed that acceptance and commitment therapy has a significant effect on reducing the self-destructive behaviors and negative emotions of imprisoned addict women, which is supported by the results of this study.Regarding the unprecedented results of the present study on the positive effectiveness of interventional methods in people with substance abuse, it can be concluded that acceptance and commitment based treatment and quality of life based treatment lead to cognitive regulation and emotion management.

On the other hand, training in cognitive and behavioral techniques in these two therapies reduced negative emotions and destructive behaviors, and attempts to alleviate distress and build up of automatic emotions, and ultimately increase the scores of individuals in cognitive emotion regulation (20). Also, by teaching cognitive-behavioral techniques based on acceptance and commitment and skills to improve quality of life, a person with a history of addiction learns to manage distress and self-destructive behaviors in healthy ways. Even in certain circumstances one may not be able to control the situation, but despite these teachings he/she can control his/her responses and behavior.

learns that not all situations need to be pleasing or feel pleasant in all circumstances. Rather, a situation can have a negative and unpleasant emotional burden, but one simply sees and accepts it as a situation. This acceptance, which is taught through cognitive-behavioral training, can alleviate one's anxiety (52,54).

Also, by having behavioral contracts based on activities that lead to a higher quality of life, the individual feels a sense of responsibility for simply accepting the situation with distress and tries to calm himself.

For example, with extreme acceptance, one

In other words, the commitment strategy to change and improve the quality of life (acceptance-based and commitment-based treatment and improve the quality of life) can help one to accept different situations and behaviors than they have ever done.

On the other hand, cognitive-behavioral techniques are all focused on change and on sustaining change. This means that people learn to actively manage their behavior during these trainings. By setting realistic goals and behavioral analysis, one can achieve this self-awareness and empowerment in special situations (such as situations that require a lot of

distress). Emotional cognitive adjustment and distress tolerance are both variables that are associated with increased awareness (55) and in specific needs, the individual attains to emotional exhaustion, which expresses his or her own emotion to understand and become more emotionally and by naming one's emotions in some way cognitive emotion regulation. Suppressing and not expressing emotions can make it difficult for the emotions to be clear and ultimately capable of detecting emotions. In treatment based on acceptance, commitment, and quality of life, one's emotional burden decreases as one attains the four skills of refining emotions, hope, calm, and deeper understanding (56). Based on the results of this study, we suggest two effective and effective therapies ACT and QOLT as training techniques in addiction and substance abuse clinics and other addiction treatment and care centers.The limitations of this study include lack of cooperation with addicts, lack of regular attendance at meetings, lack of necessary support of treatment centers with researchers, and non-randomized sampling. Also, due to the new selective intervention methods in this study and the inability to predict the results, it is very motivating for the researcher to pursue this career path.

Conclusion

According to the results of this study, acceptance, commitment, and quality of life-based therapy methods are effective on self-destructive behaviors and emotional cognitive regulation in substance abusers.

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