

## Abstract

**Objective:** The aim of this study was to determine the effectiveness of behavioral activation therapy in action resilience and meta-cognitive beliefs among opiate dependent patients. **Method:** A quasi-experimental research design along with pretest-posttest-follow-up and control group was employed for the conduct of this study. The statistical population of this study consisted of all outpatient men who were on the verge of addiction withdrawal in Ahvaz city in 2016. From among them, 30 subjects were selected through convenience sampling and were randomly assigned to two experimental (15 subjects) and control (15 People) groups. Connor-Davidson Resilience Scale and Wells Metacognitions Questionnaire were the data collection tools in this study. The experimental group received eight 90-minute sessions of group behavioral activation therapy. After the end of the treatment program, both groups took post-test; and the follow-up stage was also conducted after one month. For data analysis, multivariate analysis of covariance was used. **Results:** The results showed that group behavioral activation therapy enhanced action resilience and decreased metacognitive beliefs of uncontrollability, positive beliefs about cognition, low cognitive confidence, need to control thoughts, and self-consciousness in opiate dependent patients of the experimental group compared to the control group. The results remained constant after one month. **Conclusion:** Behavioral activation therapy intervention can be a suitable treatment for reducing the cognitive problems of opiate dependent people.

**Keywords:** behavioral activation therapy, action resilience, metacognitive beliefs, opiate-dependent patients

# Effectiveness of Behavioral Activation Therapy in Opiate-Dependent Patients' Action Resilience and Metacognitive Beliefs

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## Introduction

Opioid dependence is a chronic disease that is associated with severe motivational disorders and loss of behavioral domination and leads to personality destruction. Millions of people suffer from this disorder, which often co-occurs with other mental illnesses and imposes various social and economic costs on the community (Dallas, 2013). Opioid dependence refers to a set of physiological, behavioral, and cognitive symptoms, which generally indicates the continuation of opioid use despite severe drug-related problems (American Psychiatric Association, 2013).

Research has shown that addicts have low resilience to tensions and adverse events (Anderson, 2015). Resilience helps with individuals' adaptability in the face of disasters or stresses. This attribute is supported, developed, and presented as a positive feature with the person's inner ability as well as social skills and interaction with the environment (Diener, 2013). Action resilience is one of the most important cognitive dimensions for people on the verge of withdrawal (Scragg, 2014). The identification and increase of this construct create a promising insight into drug use withdrawal.

On the other hand, meta-cognitive beliefs predict the experience of negative feelings, such as anxiety and depression in these individuals due to their thinking styles and incompatibility; in addition, the positive and negative meta-cognitive beliefs may cause continued anxiety (Pourmanadarian, Birashk, & Asgharnejad, 2012).

Giyung (2014) carried out a study on substance-dependent people and found that substance-dependent people had higher meta-cognitive beliefs than normal people. Metacognitive beliefs are among the effective factors in the mental health situation. The status of mental health is threatened by changing the meta-cognition that intensifies maladaptive practices of negative thoughts or increases general negative beliefs. Metacognitive beliefs are the ones that relate to the uncontrollability, importance, and perilousness of cognitive thoughts and experiences (Zamanzadeh, 2013). On the other hand, people with opioid dependence undergo disruption and chaos in their beliefs. Negative metacognitive beliefs about uncontrollability are significantly predictive of depression, stress, and anxiety in substance abusers (Yelmez, Gencoze, & Wells, 2014). Also positive and negative meta-cognitive beliefs have a direct relationship with the ability of individuals to cope with pathological anxiety (Cartwright & Hatton, 2011). In this regard, Mohammadifar, Kafi Anaraki & Najafi (2014) showed that two subscales of uncontrollability and the risk of cognitive thoughts and reliability could predict the changes in substance abuse behavior.

Rumination is one of the problems of people with negative meta-cognitive beliefs. Mental or intellectual rumination is known as permanent employment of a thought or subject and thinking about it, and is referred to as a class of

conscious thoughts that are characterized around a specific axis. These thoughts are repeated. These involuntary thoughts go into consciousness, distract attention and goals, and distort people's beliefs (Hamamci, 2013). To reduce such negative beliefs and increase resilience among addicts, non-pharmacological treatments can have tremendous effects on their problems (Fartousi, Talebi, & Karami, 2013).

One of the therapeutic approaches is the third wave of behavioral activation therapy that focuses on behaviors and activities (Dimidjian, Brrera, Martell, Munoz, & Lewinshon, 2011). Behavioral activation therapy has a special focus on mood disorders and other disorders, and assigns attention to most of the activities of an individual, whether related and unrelated to disease, lifestyle change, and consequences of the disease (Kanter, Bush, & Rush, 2005; translated by Mirza'ea and Fereidouni, 2012). In this type of therapy, the patient is helped to be able to recover in the first possible step and the patient is activated behaviorally and socially. By increasing the constructive interaction between the patient and healthy people and reducing the symptoms of depression, anxiety, psychological stress, and negative beliefs, the patient is engaged fully in the treatment process over a long period of time in order to maintain recovery (Dawe, & Loxton, 2014). The aim of cognition in this type of therapy is the establishment of a relationship between actions and emotional outcomes and also the systematic substitution of dysfunctional behavioral patterns with adaptive behavioral patterns. In addition, in this type of treatment, attention is paid to the quality and improvement of social function (American Psychological Association, 2013). In general, this therapy is a behavioral therapy that offers objective and simple techniques for implementation and is economically feasible due to its short duration (Kanter et al., 2012). Many studies have examined the effectiveness of this treatment. Research findings suggest that this treatment can be effective in modifying some behavioral characteristics of addicts.

Khalaf Beigi (2012) investigated the effect of behavioral activation therapy on perceived stress and anxiety in subjects with substance abuse and showed that behavioral activation therapy reduces perceived stress and anxiety in substance abusers. Also, Riazi (2012) concluded that behavioral activation therapy reduces stress and increases resilience among opiate-dependent patients. In the same way, Miles & Ander (2015) indicated that behavioral activation therapy reduces positive metacognitive beliefs about worry, uncontrollability, low cognitive confidence, and the need for thought control, cognitive awareness of substance abuse addicts. Anderson (2015) also concluded that behavioral activation therapy would increase action resilience and quality of life and would reduce perceived stress in substance abusers. Jan (2014) showed that behavioral activation therapy reduces the level of stress and anxiety in opiate-dependent addicts. Rasel (2013) showed that behavioral activation therapy reduces positive beliefs about worry, controllability, low cognitive confidence, and the need for control of the thoughts, and cognition among opioid-dependent persons.

Similarly, behavioral activation therapy has a significant effect on the reduction of metacognitive beliefs in opiate-dependent people. Finally, Patric (2012) showed that group therapy based on behavioral activation model leads to reduced mental rumination and ruminative responses among substance abusers. In the end, it is noteworthy that it is possible to exert a positive impact on the cognitive constructs of these individuals by providing them with appropriate treatment protocols.

With regard to what has mentioned, many physical, social, and economic problems are perceived in opiate-dependent people that have a negative effect on their action resilience and type of beliefs. Therefore, it should be attempted to provide a suitable treatment approach for the cure for cognitive disorders in opiate-dependent people. In the present study, it is sought to see whether behavioral activation therapy is effective in opiate-dependent patients' action resilience and metacognitive beliefs.

## **Method**

### **Population, sample, and sampling method**

A quasi-experimental research design along with pretest, post-test, and control group was employed for the conduct of this study. The statistical population of the study consisted of all addicts presenting to the outpatient addiction center of Ahvaz (affiliated to Welfare Organization) in 2016. In this study, 30 opiate addicts were selected via non-random sampling method and were randomly divided into two equal groups. The entry criteria of the present study included informed consent for participation in the research, 20 to 45 years of age, a minimum education of secondary school degree, the availability of criteria for the diagnosis of opioid dependence based on the criteria of the fifth edition of the Practical and Diagnostic Manual for Mental Disorders, the non-receipt of other non-medical treatment methods, and no experience of any stressful events, such as divorce or the death of loved ones in the past six months. The exit criteria were absenteeism of more than one meeting and incomplete completion of questionnaires. After expressing the research objective for sample members, the informed consent was received from the participants in the research.

### **Instruments**

1. Connor-Davidson Resilience Scale: This questionnaire was developed by Connor & Davidson (2003) and contains 25 items that are scored on a Likert scale from zero (always false) to five (always true). The Cronbach's alpha reliability coefficient of this scale was reported equal to 0.91 and the convergent validity of this questionnaire was obtained by correlating it with Ahvaz's Psychological Hardiness Scale ( $r = 0.64$ ) (Hosseini, 2012). In the present study, Cronbach's alpha coefficient of this scale was obtained equal to 0.78.

2. Wells Metacognitions Questionnaire: This questionnaire is a 30-item self-report tool that has been developed by Wells et al. (2004). It measures

individuals' beliefs about their thinking. Responses in this scale are based on a four-point Likert scale: 1 = disagree to 4 = strongly agree. It consists of five subscales, namely positive beliefs about worries, negative beliefs about uncontrollability of thoughts and danger, cognitive confidence, beliefs about need to control thoughts, and cognitive self-consciousness. Zamanzadeh (2013) obtained Cronbach's alpha reliability of 0.81 for the whole questionnaire and the coefficients of 0.60, 0.74, 0.72, 0.71, and 0.77 for positive beliefs about worries, negative beliefs about uncontrollability of thoughts and danger, cognitive confidence, beliefs about need to control thoughts, and cognitive self-consciousness, respectively (Zamanzadeh, 2013). In the present study, Cronbach's alpha coefficients were obtained equal to 0.78, 0.81, 0.83, 0.80, and 0.79 for positive beliefs about worries, negative beliefs about uncontrollability of thoughts and danger, cognitive confidence, beliefs about need to control thoughts, and cognitive self-consciousness, respectively.

### **Procedure**

Following the referral to the drug addiction center, the researcher prepared a list of opiate dependent addicts. After consultation with the center's psychologist and according to a specialist interview conducted by the psychiatrist and psychologist of the center, opiate addicts who were in the maintenance phase were identified. Then they were interviewed individually and 30 volunteers who were willing to attend the sessions and the research process were selected. In the next step, 15 subjects were randomly assigned to the experimental group and 15 ones were assigned to the control group. Before the implementation of the intervention in the experimental and control groups, pretest on action resilience and meta-cognitive beliefs was performed. Group therapy program based on behavioral activation therapy model (Kanter, Bush, & Rush, 2005; translated by Mirza'ea and Fereidouni, 2012) was performed on the experimental group during eight 90-minute sessions. The therapeutic plan was held once every two weeks. At the end of the intervention, a posttest was performed on both groups and a follow-up test was conducted one month later. Meanwhile, with the coordination provided with the control group, it was decided to hold behavioral activation group therapy for opioid-dependent persons after the effectiveness of the therapy was proved. Then the results were analyzed.

In this research, the intervention sessions of the activation behavioral group therapy (Kanter, Bush, & Rush, 2005; translated by Mirza'ea and Fereidouni, 2012) have been presented in Table 1.

**Table 1: Summary of the Sessions of the Behavioral Activation Group Therapy (Kanter, Bush, & Rush, 2005; translated by Mirza'ea and Fereidouni, 2012)**

<i>Session</i>	<i>Content</i>
<b>First</b>	The administration of the pretest, establishment of a therapeutic relationship with addicts, and teaching of behavioral contracts in the form of written or verbal agreement between the therapist and the patients, and examining the barriers to achieving these goals .
<b>Second</b>	Training and focusing on the activation of behavior, the individuals interaction with the environment, and the training of appropriate strategies: Concentration on the interaction between the individual and the environment by changing the obvious behaviors. Behavioral activation strategies were based on principles of silence, formation, deletion, mental review, periodic distraction, procedural skills training, and observational thinking .
<b>Third</b>	Psychological training about group healing processes: Briefings were held on the general field of the disease, selection of appropriate therapeutic approaches, individuals' status, motivational issues regarding the interaction with other people (family and treatment staff), and the use of others' experiences .
<b>Fourth</b>	Concentration on aspects of stress and anxiety; using positive verbal reinforcement through hope therapy; using positive verbal reinforcement by expressing positive statements to each other; and stating promising ideas on the patient's small improvements .
<b>Fifth</b>	Concentration on resilience and changing mental and emotional states through the use of allegory in the course of psychological training; explaining processes, such as teaching resilience, improvement of tolerance, and acceptance of mental states in the form of allegories and group discussions .
<b>Sixth</b>	Concentration on cognitive beliefs, cognitive judgments, and their control, and management of patients' stress. Lifestyle, stress, and negative thoughts were identified. Personality; control, adaptation, and prediction of stress; identification and prevention of negative consequences and irrational and metacognitive attitudes were examined .
<b>Seventh</b>	Teaching about the psychosocial components of the present situation, coping skills training, behavioral rehabilitation training, determination and therapy skills training; and access to and optimal use of psychologists and caregivers .
<b>Eighth</b>	A wrap-up of the sessions was made, the group members were asked about the sessions, in the end, follow-up perspectives were presented, and the posttest was performed .

## Results

The descriptive statistics of the variables of action resilience and metacognitive beliefs for both groups and test type are presented in Table 2.

**Table 2: Descriptive statistics of action resilience and metacognitive beliefs for each group and test type**

<i>Variable</i>	<i>Experimental group</i>		<i>Control group</i>	
	<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
<b>Action resilience</b>	(6.31)99.18	(6.86)114.95	(5.75)97.40	6.29(97.60)
<b>Positive beliefs about worry</b>	(6.71)34.61	(5.32)19.81	(6.51)23.89	(7.06)33.34
<b>Beliefs about uncontrollability</b>	(7.32)20.94	(6.2)17.87	(6.51)21.93	(6.86)22.04
<b>Low cognitive confidence</b>	(6.37)19.77	(5.42)18.12	(7.51)19.11	(7.27)19.41
<b>Need to control thoughts</b>	(6.77)18.77	(5.81)17.34	(5.51)19.83	(5.73)19.92
<b>Cognitive self-consciousness</b>	(5.37)21.24	(7.29)20.67	(5.51)22.38	(7.59)22.83

For data analysis and control of the effect of pretest and posttest, multivariate covariance analysis was used. One of the assumptions of multivariate covariance analysis is the homogeneity of variance-covariance matrix. The results of Box's test showed that this assumption has been met ( $P > 0.05$ ,  $F = 0.82$ ,  $M \text{ Box} = 20.25$ ). Another assumption of this analysis is the equation of error variances. The results of Levene's test showed that the assumption of the homogeneity of error variances has been met in components of action resilience ( $F = 0.01$ ,  $p > 0.05$ ) and meta-cognitive beliefs ( $F = 1.80$ ,  $P > 0.05$ ). Another important assumption is the homogeneity of regression coefficients. It should be noted that the homogeneity test of regression coefficients was examined through the interaction of action resilience and the independent variable (treatment method) in the posttest ( $F = 1.19$ ,  $p > 0.05$ ) and metacognitive beliefs and the independent variable (treatment method) in the posttest ( $F = 1.45$ ,  $p > 0.05$ ). The results indicated that this assumption has also been met. Kolmogorov-Smirnov test was used to assess the normal distribution of the population. The results indicated that the distribution was normal. Therefore, multivariate covariance analysis was conducted to examine the effectiveness of the intervention in meta-cognitive beliefs and the results showed that there was a significant difference between the two groups in the linear composition of the variables (Eta squared = 0.72,  $P < 0.001$ ,  $F = 45.39$ , Wilks' lambda = 0.91). In order to examine the patterns of difference, univariate covariance analysis was used, as described in table 3.

**Table 3: Results of Univariate Covariance Analysis on Action Resilience and Meta-cognitive Beliefs Components in the Posttest**

<i>Variables</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>	<i>Effect size</i>	<i>Statistical power</i>
<b>Action resilience</b>	5150.13	45.39	0.0005	0.83	1
<b>Positive beliefs about worry</b>	401.43	176.42	0.0005	0.91	1
<b>Beliefs about uncontrollability</b>	201.77	49.94	0.0005	0.74	1
<b>Low cognitive confidence</b>	255.80	64.10	0.0005	0.79	1
<b>Need to control thoughts</b>	222.47	91.29	0.0005	0.90	1
<b>Cognitive self-consciousness</b>	237.18	68.34	0.0005	0.89	1

As it has been shown in Table 3, the results show that behavioral activation therapy is effective in all the components of action resilience and metacognitive beliefs. To evaluate the effectiveness of this treatment, multivariate covariance analysis was used in the follow up data. The results indicated the existence of a significant difference between the two groups in the linear composition of the variables (Eta squared = 0.48,  $P < 0.001$ ,  $F = 31.12$ , Wilks' lambda = 0.82). In order to examine the patterns of difference, univariate covariance analysis was used, as described in 4.

**Table 4: Univariate covariance analysis examining action resilience and metacognitive beliefs in follow-up**

<i>Variables</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>	<i>Effect size</i>	<i>Statistical power</i>
<b>Action resilience</b>	110.33	39.01	0.0005	0.60	1
<b>Positive beliefs about worry</b>	387.40	167.72	0.0005	0.87	1
<b>Beliefs about uncontrollability</b>	198.92	68.39	0.0005	0.66	1
<b>Low cognitive confidence</b>	249.65	94.87	0.0005	0.76	1
<b>Need to control thoughts</b>	201.10	86.87	0.0005	0.70	1
<b>Cognitive self-consciousness</b>	197.54	65.09	0.0005	0.69	1

As it has been shown in Table 4, the results show that behavioral activation therapy has had a lasting effect on all the components of action resilience and meta-cognitive beliefs. In other words, behavioral activation therapy has led to a continued increase in action resilience and reduction of metacognitive beliefs of the experimental group in the follow-up stage.

### **Discussion and Conclusion**

The findings showed that behavioral activation group therapy had an impact on action resilience and metacognitive beliefs among opiate-dependent addicts. This finding is consistent with the research findings obtained by Jan (2015), Anderson (2015), Riazi (2012), Moradi et al. (2013), and Khalf Beigi (2012). To explain these findings, it can be argued that opioid addicts can have a low level of resilience in coping with life challenges due to their perceived psychological challenges, conflicts, and stressful conditions. Opiate-dependent people are emotionally immature, rebellious, and uncontrollable and have strong hostility and stress. The intervention of behavioral activation therapy in opioid-dependent addicts causes them to actively participate in the recovery process with more flexibility and hardiness due to the fact that this therapy leads to the cessation of the old pattern of inability in resilience and action resilience and to the provision of motivation for individual changes. Due to the fact that small changes in resilience were rewarded and strengthened in this therapy, the level of internal resistance increased. As this treatment protocol was executed in a group format, participants received desired feedback on their problems. They also learned that they can be responsible for their actions and show a deep reconstruction of action resilience in coping with their problems. Moreover, effective communication

and effective rejection techniques caused opioid-dependent addicts to recognize behavioral symptoms of non-resilience. With the dominance of their active role in adjusting the problems and stressors during the addiction period, their internal and active resistance to their problems experiences an increase. Then, the spirit of perseverance, the sense of responsibility, and purposefulness increase in them, and the states of isolation and helplessness were reduced in them.

As a result, it can be argued that group therapy based on behavioral activation in opiate-dependent addicts can identify the behavioral characteristic of action resilience problems and challenges. In this therapy, these addicts started reconstructing and restoring themselves behaviorally and motivationally. In addition, they enhanced the practical program of internal rewards based on high endurance by means of the development technique and, thereby, their action resilience increased. In conclusion, behavioral activation therapy is effective in increasing the opioid-dependent individuals' resilience (Rasel, 2013).

Moreover, behavioral activation group therapy was effective in metacognitive beliefs of opiate-dependent addicts. This research finding is in the same line with the research findings reported by Miles, & Andr (2015), Patric (2012), and Rasel (2013). To interpret this finding, one may argue that opioid-dependent addicts hold ineffective beliefs and negative metacognitive beliefs about recovery due to their inappropriate psychological and physical conditions. Based on self-regulation theory of executive action, psychological disorders continue when irrational beliefs arise from one's metacognitive knowledge and are activated and processed in difficult situations. However, in this study, it was revealed that behavioral activation therapy group is effective in reducing the metacognitive beliefs, including positive beliefs about worry, beliefs about uncontrollability, low cognitive confidence, need to control thoughts, and cognitive self-consciousness among opiate-dependent addicts. It can be concluded that behavioral activation group therapy reduces negative consequences of the inability in complete recovery by providing techniques pertaining to the control of disturbing thoughts and providing problem-solving behavioral-motivational techniques among the addicts in the maintenance phase. Group therapy based on behavioral activation in these individuals leads to increased behavioral efficiency, positive reinforcement, and a strong sense of self-control of behaviors and, thereby, has changed addicts' addiction to their minds and negative behaviors and has made it possible to relax the individuals in such a way that these people can have positive behavior towards and a high awareness of their relatively healthy condition considering their physical and mental status. Due to the group administration of the therapy and similar patient feedback, patients are more likely to perceive more appropriate enabling beliefs and activate their behaviors based on receiving internal rewards. Since opioid-dependent addicts receive appropriate behavioral activation exercises and, thereby, they show the metacognitive beliefs that cause the persistence of concerns and worries to a lesser extent. In addition, addicts experience lower

degrees of negative self-assessment, negative emotions, such as anxiety and depression, uncontrollable conditions, and negative beliefs. Moreover, they develop self-esteem beliefs and goals and show increased personal growth. This therapy led to a decrease in obsessions with fear of self-criticism based on the creation and enhancement of motivation. It can also be maintained that behavioral activation group therapy in opioid-dependent group, based on the provision of techniques, makes it possible for a person to discover his/her innate capacity for behavioral change, and this leads this individual finds him/herself to be in charge of changing his/her state of mind by means of intrinsic motivation and to reduce the intensity of beliefs about the loss of his/her recovery time, severe worry about thoughts, negative and relatively uncontrollable imaginations, low cognitive confidence, and need to control thoughts, and cognitive self-consciousness.

Among the research limitations, we can refer to the individual and intrinsic differences in the effect of the therapy as well as mental and psychological conditions of the sample units during the completion of the questionnaire, which might have affected their posttest scores. This was beyond the researcher's control. In addition, the limited intervention duration and no comparison with other therapies were among the research limitations. Finally, considering that behavioral activation therapy leads to reduced metacognitive beliefs in opiate-dependent addicts, this therapeutic approach is effective in reducing addicts' psychological trauma and can be applied at the same time with detoxification methods to reduce the metacognitive beliefs of opiate-dependent addicts. Considering the low action resilience and emotional, behavioral, and physical problems in addicts, activation interventions can be a good therapeutic alternative to mitigate their problems. It is suggested that researchers and therapists consider the strategies of spiritual therapy as a protective method in preventive and therapeutic interventions in addiction treatment centers.

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