

## Abstract

**Objective:** This study was carried out to determine the effects of cognitive behavioral therapy in improving coping strategies and symptoms of drug addiction patients. **Method:** In a quasi-experimental study, the number of 90 drug-dependent patients referring to clinics existing in the city of Uremia to stop taking drugs was divided into two experimental (n=45) and control (n=45) groups, using random sampling method. The experimental group received 12 sessions of cognitive-behavioral treatment based on Carroll style while the control group received only methadone and the physical pills. All the participants completed coping strategies questionnaire at the beginning, during (after three months), and three months after treatment (follow-up). They were assessed for the rate of improvement in symptoms of addiction and process of addiction treatment by Maudsley Addiction Profile, as well. **Results:** The results proved the positive effectiveness of cognitive-behavioral therapy and its survival. **Conclusion:** Cognitive behavioral therapy is very influential in the boost of coping strategies and the improvement of mental and physical health in drug dependent patients.

**Keywords:** Drug-Dependent Patients, Coping Strategies, Cognitive Behavioral Therapy

# The Effect of Cognitive-Behavioral Therapy on the Improvement of Coping Strategies and Addiction Symptoms in Drug-Dependent Patients

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## Introduction

At present, substance abuse disorder along with its unfavorable consequences is one of the most important problems ahead of world health status (Daly & Marlat, 2005). Some personality traits increase the risk of substance abuse. Low self-confidence, lack of social and coping skills and the use of naive methods for resisting against life pressures are among these risky features (Bakhsipoor, AliLoo & Irani, 2008). In the first decade of the twenty first century, a construction called “coping” entered the psychology literature (Jafari, shahidi & Abedin, 2009) and has been of interest as a mediator factor between stress and physical or mental disorders. Folkman & Lazarus (1991) believe that “coping” is cognitive and behavioral efforts to overcome “stress” or reduce its effects as much as possible. “Coping” with an agent is considered as an important mediator variable in the relationship between stressful events and consequences such as anxiety and stress (Tremblay & King, 1993). Lack of “coping” skills is a risk factor in the initiation of substance abuse in adolescents (Toufani & Javanbakht, 2001). Addicts use different coping styles, among which ineffective method of behavioral avoidance is the most common coping one (Samoui, 2009). Tufani & Javanbakht (2001) have reported that addicts use problematic coping strategies, cognitive assessment and social support seeking less and less; rather, they use more of physical coping strategies and emotional control strategies. Hajipour (2002) did a research on a group of drug addicts and showed that these individuals have more dysfunctional attitudes and use more of the coping strategies based on emotions and somatization. The results of studies have shown that relapse takes place very slower in the patients with severe mental trauma who are trained with coping strategies (Kaden, 2003). Given Marlat preventive model of relapse, defection of general coping skills leads to the reduction of self-efficacy and increases the possibility of substance abuse as a “coping” strategy in risky situations. Kaden et al (1989) believe that the patients with severe mental trauma who are under treatment based on teaching coping skills reach better results since these types of treatments have a special structure and the aims of them are limited to relapse prevention. According to this model, the initial goal of relapse prevention treatment programs is to help individuals establish effective behavioral and cognitive strategies for coping with interpersonal situations and negative emotional feelings.

According to studies, it seems that 20 to 90 percent of the addicts under treatment suffer relapse (Dabaghi, Asgharnejad & boulhory, 2008). Review of the past studies shows that treatment with drug without mental and social intervention is not so successful (Rozen et al, 2006). So the importance of the issue starts from this point that treatment centers urgently need psychological treatment programs for changing attitudes of substance dependents. For this purpose, it is necessary to pay attention to cognitive and behavioral treatments more than before. Behavioral-cognitive treatment model is one of the

significant psychological and interventional addiction treatment models in relapse prevention (Miller, Willbourne & Hettema, 2003). Behavioral-cognitive treatment in addiction and its relapse is based on cognitive impairments and lack of behavioral skills in the face of internal and external pressures and the development of a sense of happiness followed by escaping from negative emotional moods (Ministry of Health and Medical Education, 2002). This model consists of a group of behavioral-cognitive interventional methods which can help the recognition of faulty and inefficient cognitions in addicts and, thereby, measures can be taken towards reforming and changing coping skills in patients to reach efficient results and reestablish and foster their social skills so that they are not to take refuge in substance abuse when encountering risky situations (Litt, Kaden & Kabela-Cormier, 2009). In relation to the effect of teaching computational skills with behavioral-cognitive approach on relapse prevention in addicts, Shahmohammadi Ghahsare, Dervizeh & Shahriari (2008) showed that, in the experimental group, relapse into substance abuse was less than the other group. The present study has been carried out with the aim of investigating the effect of this treatment on the improvement of coping skills and reduction of addictive symptoms.

## **Method**

A quasi-experimental design along with pretest-posttest and control group was used for this study. Subjects of the study included the addicts who referred to the treatment center of Uremia, situated to the north-west of Azerbaijan in Iran from January to March, 2009 to take methadone. Among all clients, 90 people were randomly chosen. These criteria were considered for the inclusion of participants in the study: the history of substance dependence for the minimum of 2 years and maximum of 15 years, aged between 20 and 50 years old, and physical and mental health.

## **Instrument**

1. Demographic Questionnaire: this questionnaire was developed to gather information on the participants' educational status, age, gender, accommodation, marital status, judicial conviction, history of substance dependence, way of abuse, amount of abuse, type of substance, frequency of abuse, and abstinence of participants.

2. Maudsley's Addiction Profile (MAP): this questionnaire was developed for the assessment of the consequences of substance abuse treatment, risky behaviors, physical health, mental health and social and individual function of addicts in England. Validity and reliability of this test were confirmed for subjects in Europe (Marsden et al, 2001). The result of test-retest reliability confirms its reliability. Its coefficient was reported as 0.96 for 8 types of

substances and 0.77 for risky behaviors, physical and mental symptoms, and social and individual function.

3. Questionnaire of Lazarus coping strategies: this questionnaire consists of 66 items based on Lazarus and Volex's coping strategies inventory (1985) and it assesses an expansive range of thoughts and actions which individuals carry out in facing internal and external stressful conditions. Its scoring is based on Likert scale from 0 to 3. This test consists of 8 direct coping subscales, distance taking, self-control, social support seeking, taking responsibility, escape and avoidance, problem solving planning and positive reassessment. The number of 16 questions in this test is illusory and other 50 questions assess individuals' coping strategies. Reliability of this questionnaire was evaluated on a sample of participants consisting of 750 middle aged spouses whose Cronbach's Alpha coefficient was reported as 0.70 for direct coping, as 0.61 for taking distance, as 0.72 for escape-avoidance; as 0.67 planned problem solving, and as 0.79 for positive reassessment. Vahedi also used Lionel stress questionnaire to evaluate the convergent validity of this scale and the results confirmed its validity. Factorial validity results showed that the questionnaire consisted of 10 factors which, in turn, is a kind of construct validity.

## Procedure

To administer the procedures, first, each of the participants was given an ID number for ethical issues of the confidentiality of personal information and, then, the researcher interviewed the patients (addicts) one by one and filled in Maudsley's Addiction Profile (MAP). After the completion of all MAP questionnaires, the researchers delivered the questionnaire of coping strategies to all participants in both the experimental and the control groups. In addition, the participants in the experimental group received 12 sessions of behavioral-cognitive treatment while the participants in the control group only received Methadone pills.

**Table 1: Content of behavioral-cognitive treatment sessions**

<i>Session</i>	<i>Strategies in use</i>
1 <sup>st</sup> session	Individual motivational feedback: disadvantages of substance abuse and lack of change. Advantages of changing in substance abuse, advantages of continuation of substance abuse and lack of change, disadvantages of lack of change in substance abuse.
2 <sup>nd</sup> session	Identifying high risk situations, interpersonal and intrapersonal, deriving factors (emotions, individuals, places and stuff), practical plans for coping with high risk situations.
3 <sup>rd</sup> session	Identifying predisposing factors for substance abuse, planning methods for coping with enthusiasm and tendency towards substance abuse; stopping thinking, practicing development of balance in decision making, and procrastination.

<i>Session</i>	<i>Strategies in use</i>
4 <sup>th</sup> session	Coping with negative thoughts, relation between thought and emotions, identifying negative thought models, combating negative thoughts and cognitive reconstruction.
5 <sup>th</sup> session	Seemingly unreliable decisions: individual awareness of high risk situations, functional analysis of thoughts in performing high risk behaviors.
6 <sup>th</sup> session	Planning and predicting emergency situations, encountering unexpected deriving factors or high risk situations.
7 <sup>th</sup> session	Avoidance and coping skills against direct encounters with substance abuse, role playing for practicing courageous responses.
8 <sup>th</sup> session	Criticizing and to be criticized- courageous responding against critics- conflict resolution skills- role playing.
9 <sup>th</sup> session	Anger and substance abuse management- identifying anger signs and symptoms- conflict resolution skills- cognitive reestablishment on the ground of the thoughts arousing anger.
10 <sup>th</sup> session	Investigating how to withdraw from enjoyable activities relating to substance abuse-identifying enjoyable activities as a healthy and true solution, planning for the development of enjoyable activities- developing commitment to practicing enjoyable and healthy activities.
11 <sup>th</sup> session	Problem solving skills, problem identification, presenting possible solutions, choosing a possible solution, assessment of employed solutions.
12 <sup>th</sup> session	Making friends with people who are not involved with substance abuse, stopping relation with harmful friends and acquaintances, stopping contact with substance dealers and abusers, finding an established group of supporting individuals and establishing a self-help group.

## Results

Data analysis was done on 90 individuals in two experimental (45) and control (45) groups. Descriptive statistics of the variables are presented in the following table for each group.

**Table 2: Descriptive statistics of the variables for each group**

<i>Variables</i>	<i>Test</i>	<i>Experimental group</i>		<i>Control group</i>	
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
(MAP)	Pretest	37.98	9.96	41.42	9.09
	Posttest	13.36	5.94	37.24	8.02
	Follow-up	12.47	5.95	40.44	5.18
Coping strategies	Pretest	6.58	0.70	6.48	0.62
	Posttest	8.23	0.63	7.18	0.75
	Follow-up	8.46	0.42	7.17	0.64

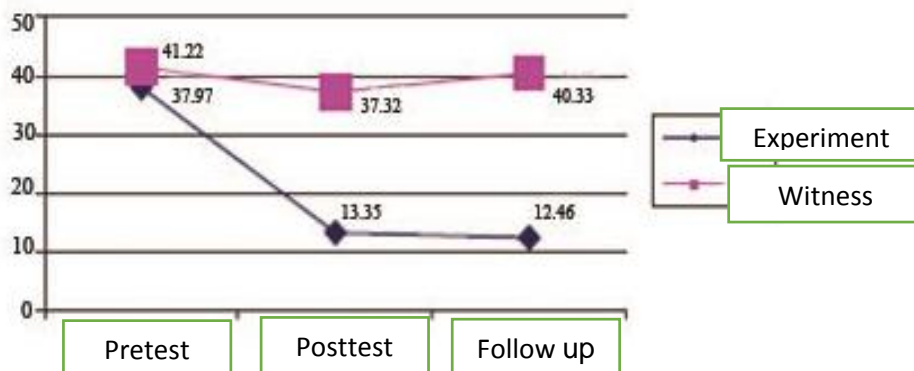
Covariance analysis was used to investigate the effectiveness of the treatment and its preservation. One of the assumptions of this analysis was the equality of error variances. To this end, Leven's test was used. The result of this analysis suggests the establishment of this assumption ( $P > 0.05$ ). The result of univariate covariance analysis is presented in the following table.

**Table 3: Results of univariate covariance analysis representing the effectiveness of cognitive-behavioral treatment on MAP and coping strategies**

<i>Variables</i>	<i>Test</i>	<i>Df</i>	<i>F</i>	<i>Sig.</i>
Maudsley's Addiction Profile (MAP)	Posttest	1	101.420	0.0005
	Follow-up	1	121.201	0.0005
Coping strategies	Posttest	1	44.420	0.0005
	Follow-up	1	60.430	0.0005

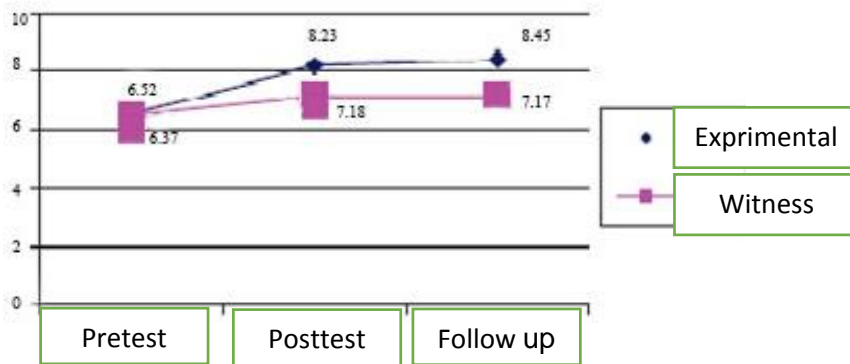
As it is shown in the above table, there is a significant difference between the groups in Maudsley Addiction Profile (MAP) both in the posttest ( $F=101.420$ ,  $P < 0.001$ ) and in the follow up ( $F=101.420$ ,  $P < 0.001$ ). Also, the results of covariance analysis for coping strategies show the existence of a significant difference between the two groups both in the posttest ( $F=44.420$ ,  $P < 0.001$ ) and in the follow up ( $F=44.420$ ,  $P < 0.001$ ). In other words, behavioral-cognitive treatment was significantly effective in reducing addiction symptoms in individuals and increasing coping strategies and this change has remained stable.

The figure of Maudsley's Addiction Profile (MAP) is presented for each group as follows.



**Figure 1: Maudsley's Addiction Profile (MAP) for both experimental and control groups**

The figure pertaining to coping strategies is presented as follows for both experimental and control groups.



**Figure 2: Coping strategies for experimental and control groups**

## Discussion and Conclusion

This study aimed to investigate the effects of cognitive-behavioral treatment on the improvement of coping strategies and reduction of addiction symptoms in addicted patients. The results showed that cognitive-behavioral treatment exerts a significant effect on the improvement of coping strategies, reduction of addiction symptoms, and decrease of drug dose in addicted patients. In the present study, it was hypothesized that cognitive-behavioral treatment leads to the improvement of coping skills and decline of addiction symptoms in addicted patients. The results of covariance analysis showed the existence of a significant difference between experimental and control groups in regard to coping strategies and addiction symptoms after the intervention and follow-up for three months. This finding is consistent with that of the studies done by Molazade & Ashuri (2010), Carroll et.al (2009), Khodayari et.al (2009), Jafari et.al (2010), Marques & Formigoni (2001), Hides et.al (2010), Hunt, Baker, Michie & Kavanagh (2009), Kealey et.al (2009), Roberts-Lewis et.al (2009), Fisher & Scott (1996), and Yen, Wu, Yen, & KO (2004). This finding can be interpreted in this way that teaching such skills as functional analysis, skill learning, and coping with tendency towards drug abuse generates the feelings of dominance and capability among the individuals which is influential in increasing motivation for treatment and staying in treatment programs and also prevention of high risk behaviors. Numerous factors affect the etiology of drug abuse whose interaction leads to the start of drug use and addiction. In this regard, some personality traits increase the risk of drug abuse. Low self-confidence, lack of adaptive and social skills, and using naive methods to deal with life stresses are regarded as risky traits of individuals (Bakhshipur et.al, 2009). Coping is highly paid attention to as a factor which affects the association between mental pressure and mental disorders. Folkman & Lazarus (1991) regard “coping” as

cognitive and behavioral efforts of an individual to dominate complications or minimize their effects. Coping is one of the variables which predict behavioral normality (Thoits, 1995). Lack of sufficient coping skills is regarded as a significant risk factor in drug consumption among adolescents (Tofani & Javanbakht, 2002). Addicts use different behavioral coping styles, the most common of which is the ineffective method of behavioral avoidance (Samoi, 2000). Tofani & Javanbakht (2002) reported that addicts use problem solving coping strategies, cognitive evaluation and social support to a less degree but they use higher rates of physical coping strategies and emotional avoidance. In the present study, it was observed that the subjects acted directly, immediately and without attention to the consequences when facing problems but after treatment, they acted more logically. Before treatment, they avoided problems, acted as if nothing has happened and they have no problem in life, but after treatment, they came to the conclusion that one should not simply ignore the problems. They tried to accept the problems and solve them. Before intervention, the subjects did not have control over their behaviors, but after the intervention, they learnt to seek clear policies, see the positive aspects of problems and exert more control over their feelings. Before intervention, they less sought familial and social support and acted based on their thoughts and beliefs. After the intervention, they tried to use the guidance of normal relatives and those who had stopped taking drugs. Before intervention, they expected the occurrence of a special event in their lives and they spent most of their time asleep. However, they endeavored to enter social communities and got close to people after the intervention. Preceding the intervention, they had no plans for resolving their problems but after the intervention, they were highly interested in having plans for improvement through measures such as joining the forums of anonymous addicts. Before the intervention, they had no motive to resume their treatment, but, after the intervention, they tried to find new ways to start a better life.

It seems that the secret of success of behavioral cognitive treatment is its emphasis on the identification of cognitive errors of patients and its endeavors to inform them of their problems. This process of identifying problems and informing individuals of their thoughts is implausible through drug treatment method. The majority of patients received treatment against addiction. They also had received cognitive-behavioral treatment and successfully ended the treatment. They might resort to addiction in dangerous situations. Therefore, it is suggested to do follow-up analyses, provide necessary conditions for the restoration of individuals' competencies and to lead the associated entities to provide facilities for constant contact of patients with their physicians. As a result, some clubs were founded by governmental health organizations and universities of medical sciences which are run by qualified experts. Those patients successfully passing the recovery period can visit such clubs free of charge. Each week, psychologists hold meetings on different topics



associated with addiction so that in risky situations, the patients can use the guidelines of other patients. It is similar to what occurs in Narcotics Anonymous (NA). One of the major limitations of the present study was that, it was not possible to control some variables such as welfare and economic status, family support, etc. due to complexity of variables. Therefore, it is suggested that future studies pay attention to this issue and consider the influential factors affecting the results of treating patients.

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