

# To Compare the Effect of Therapeutic Methadone and Cognitive Behavioral Therapy to Improve Mental Health in Individuals Dependent on Heroin

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**ABSTRACT:** This research was conducted with the aim of the comparison of the effect of therapeutic methadone and cognitive behavioral therapy to improve mental health in individuals dependent on heroin. The research method was quasi-experimental from the kind of pretest-posttest designs with control group. The study sample included participants who had a long-term history of heroin and they had repeatedly failed to leave in various methods. According to research method, 36 samples were randomly selected and the participants were randomly assigned in the two experimental groups and one control group. At the beginning of the study, the mental health questionnaire (GHQ) and drug Index (OTI) were taken from people. Each group was treated with the desired therapeutic method including therapeutic methadone and cognitive behavioral therapy, but the control group received no intervention. Before and after 14 weeks of treatment, all the participants were tested with mental health questionnaire and drug index. Data were analyzed by analysis of covariance. The results of covariance analysis showed that there was a significant difference between the method of therapeutic methadone and cognitive-behavioral methadone to improve mental health of people dependent on heroin ( $P < 0.05$ ). Therapeutic methadone and cognitive-behavioral methadone to improve mental health of people dependent on heroin have been effective.

**Keywords:** Therapeutic Methadone, Cognitive-Behavioral, Mental Health, Heroin.

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## INTRODUCTION

Addiction is a physical, mental and psychic disease which endangers health of an individual, family and society due to the progressive nature in all aspects of life (Le Moal & Kooh, 2009). Among the various methods of drug dependence treatment, methadone treatment is considered more than other methods (Mattick et al., 2005). Methadone is a synthetic narcotic substance that is consumed orally and instead of taking drug dependence, they will be given. The effect of the methadone is such that the patient can be kept stable with prescription of 20 to 80 mg per day. The duration of effect is exceeded of 24 hours (Sadock et al., 2005). According to different models explaining addiction, different treatments are also provided for addiction and a number of experts have divided them into two major groups of drug and non-pharmacological treatments. Effective treatments consider addiction as a group of approaches in which both biological and psychological components are used. On the other hand, due to the chronic nature of addiction and risk of the disease, many of the people who leave consumption of drugs, they are slipped or flared shortly after the detoxification period. Therefore, to be able to help the addicts, along with the process of detoxification, and after that in the process of rehabilitation, the use of psychotherapy techniques becomes really

necessary. Numerous reports have been presented from the effectiveness of cognitive-behavioral approaches in the treatment of addiction. Furthermore, the effectiveness of cognitive-behavioral therapies in the treatment of psychiatric disorders of comorbid with addiction has been confirmed (Curry et al., 2011). Today, one of the most common approaches used by therapists in the treatment of addiction is cognitive-behavioral approach. Fundamental assumption of this approach is that the processes of learning play an important role in the development and maintenance of addiction and drug dependence. Therefore, the same principles can be used to help people in reducing drug use. In simple words, cognitive-behavioral therapy helps to identify, avoid and deal with the patients; this means that in identification of situations where the use of the substance in them is high and avoidance of these situations in a timely and effective coping with problematic behaviors associated with substance abuse issues (Herman, 2009). Carroll et al (2011) compared cognitive-behavioral therapy with another active psychotherapy, interpersonal psychotherapy in patients with cocaine. The proportion of patients who continued treatment until the end was more than interpersonal psychotherapy in the group of cognitive-behavioral therapy; the patients, who shunned the substance three weeks or more were more than interpersonal psychotherapy in the group of cognitive-behavioral therapy and also the patients who after treatment had a continuous abstinence of 4 weeks or more, were higher in the group of cognitive-behavioral therapy. Although the study sample size was small and the difference reached statistical significance, a significant difference was found between the two treatment groups in the classification of the participants based on the severity of the abuse of cocaine. Fisher and Scott (2010) also in a study compared the effect of two therapeutic groups of the patient and a cognitive-behavioral group among drug users with a personality disorder of a control group who did not receive any treatment. There were 19 patients in each group and the results of the study showed that the outpatients under treatment with cognitive behavioral therapy group had significantly reduced consumption.

Meanwhile, their social and family relationships improved and they obtained more efficient psychological functioning. In addition, the prognosis of no return in better cognitive behavioral group was evaluated. Dole et al (2009) concluded in a study of 32 prisoners in two groups of 16 people, including the group under treatment of methadone and the group without treatment in methadone tissue that after 12 months, none of the patients under treatment with methadone had not used heroin, while all those who were not treated with methadone, had frequently been used. The study of Ryan and White (2010) showed that the addicts who refer to methadone maintenance treatment for using are in a very bad condition in comparison with the general population in terms of physical and mental health and whatever their heroin use is more, the condition is worse. Hubbard et al (2010) studied and investigated the number of 11000 addicts who referred to leave addiction using three methods of methadone maintenance treatment, hospitalization for detoxification and outpatient treatment through medication and counseling. In this study, methadone maintenance treatment was reported as the most successful strategies in reducing heroin use. In a research which Torrens et al (2011) conducted, Nottingham Health Profile was used to assess the health of patients referred for methadone treatment. The results showed a positive effect on improving mental and physical health methadone well. Methadone programs of cognitive behavioral therapy can present an effective treatment for dependence on drugs. The efficacy of cognitive-behavioral therapy methadone in the treatment of heroin use, psychiatric status and social adjustment has repeatedly been identified in backward-looking studies and confirmed in the studies with random samples. The studies show that therapeutic and cognitive-behavioral methadone can increase the quality of life, mental status and general adaptability patient for a prolonged period (Maremmani et al., 2007). Therefore, the present study has been discussed to compare the effect of therapeutic and cognitive-behavioral methadone.

## **MATERIALS AND METHODS**

The research method was quasi-experimental from the kind of pretest-posttest designs with control group. The present study is conducted in the center of Rafsanjan related to University of Medical Sciences. The number of people covered by the plan methadone in the center was 130 people who have recently been placed in methadone. These people are all male and between 25 and 35 years old and they have been failed to leave drug use. Of the people of the society with the way the code was simple sampling method to all members were coded and 36 people have been selected using Table of random numbers and placed in three groups with another random sampling using the numbers of random Table. In this study, the participants had a history of long-term heroin and failed to leave drug use. According to the research method, the participants were assigned randomly to three groups:

- The group which use methadone drug treatment;
- The group which use cognitive-behavioral treatment;
- The group which did not receive any treatment.

**Research instrument**

**General Health Questionnaire (GHQ-28)**

General health questionnaire is prepared by Goldberg and Hiler in 1972 and widely used in several studies. This is one of the most well screening tools in the studies on mental health. First, Goldberg et al designed and prepared this questionnaire for the screening of non-psychotic psychiatric disorders in treatment centers and other communities. The main and primary form of this questionnaire consisted of 60 questions which the text of the questions about health state and personal problems and generally, his general health is with emphasis on the psychological and social issues at the present time. Later, shorter forms including 12, 20, 28, 30 and 44 items are also prepared. In addition to extracting the total score of mental health status of people, this questionnaire is also comprised of four subscales which each one of them has seven questions. Each subscale questions are placed in the tandem arrangement such that from the questions one to seven are related to the subscales of physical symptoms, the questions 8 to 14 related to anxiety subscale, the questions 15 to 21 related to subscales of social dysfunction, and the questions 22 to 28 are related to depression sub-scale. Scoring the test is based on the Likert scale in which five scores obtain for each individual and four scores are related to subscales and one score is related to all items of the questionnaire. As a result, an individual total score will be from zero to eighty-four and the score of each subscale from zero to twenty-one variables. A higher score in each scale represents undesirable state of the participants.

Four subscales include: symptoms of somatization, anxiety, social dysfunction and depression; which in subscale of somatization symptoms: state of general health and physical symptoms, in subscale of anxiety: symptoms and clinical signs of the fierce urgency, insomnia, under pressure, angry and anxiety and in subscale of social function: the ability of the individual to perform daily tasks, feeling of satisfaction in doing tasks, the feeling of being bound, the power to learning and enjoying the power of the daily activities of the life and in subscale of depression: specific symptoms of depression, such as feelings of worthlessness, hopelessness, worthlessness of life, suicidal thoughts, demise and the inability to do things are assessed. The reliability of public health questionnaire of 28 questions (GHQ-28) is confirmed in different cultures. For example, Shije, Mino, Tesud (2005) reported reliability coefficient (Cronbach's alpha, 0.90) for this questionnaire through the use of this questionnaire on Japanese workers. Chung and Spears (1994) estimated the final coefficient of this questionnaire in the group of the Cambodia living in New Zealand using test-retest method with interval of 2 to 4 weeks and using Spearman's rank correlation coefficient formula in the value of 0.55 and they reported the internal consistency coefficient of the questionnaire with Likert scoring method in the value of 0.85 (Saatchi et al., 2010). Human (1997) reported the internal consistency of the questionnaire using Cronbach's alpha coefficient for the subscales, in normalization of GHQ-28 questionnaire in Iran as 0.85, 0.87, 0.79 and 0.91, respectively and this equals to 0.85 for all scales indicating public health (Fathi Ashtiani, 2009).

**The questionnaire of drug index (OTI) includes the following**

- The assessment of factors associated with addiction
- Detecting the addiction based on DSM-IV, ICD-10 or SDS
- Evaluation of six areas is performed with OTI.
- Drug use, risk behaviors of HIV, social functioning, crime, health, mental state

**Table 1.** Scoring of test of OTI.

Quantity / Frequency	Q
Abstinence	0.00
Once a week or less	0.01-0.13
More than once a week	0.14-0.99
Daily	1.00-1.99
More than once a day	2.00 or More

**Procedure**

The participants of cognitive-behavioral group were as a group cognitive-behavioral therapy for 14 sessions of 14 minutes and the group under treatment with methadone by taking the average of 10 to 20 ml of methadone syrup, duration of treatment and dosage according to the doctor without the intervention of a scholar were treated. The control group did not receive any medical and psychological treatment. Three groups of the research were studied before and after treatment with the questionnaire of drug use index and clinical interviews.

## **Cognitive-behavioral sessions**

### ***First session: stages of change***

The purpose of the change process: raising awareness

Steps to change a unified framework are suggested for understanding and facilitating behavioral change. The meetings in this sequence are for clients who may not be ready to think about changing their drug use. Those who are hesitant about change and those who are prepared to change their consumption. It is important for clients to understand the stages of change model and understand that where they are in the stages of changing now.

### ***Second session: a day in the life***

The purpose of the change process: raising awareness

Raising awareness involves adding knowledge about the person or the nature of the problem person. This meeting helps clients' awareness about their quantity and use. Clients in the early stages of change often are not aware of exactly how many times they use drugs. By asking the client to describe a typical day, this information can be gained from them in a non-threatening way.

### ***Third session: The physiological effects of alcohol***

The purpose of the change process: raising awareness

Raising awareness involves adding knowledge about the person or the nature of the problem person. This meeting focuses on clients' awareness about alcohol consumption and helps the clients identify the problems with their drug use. With complete identification and grading tests, the probabilities of alcohol use by their clients are learnt about dangerous level. The meeting also teaches about the physiological effects of alcohol and that how alcohol may affect their health.

### ***Fourth session: the physiological effects of drugs***

The purpose of the change process: raising awareness

Raising awareness includes knowledge of the clients about themselves and the nature of the problematic behavior. This session helps the clients be aware of the amount of medication and identify the problems associated with their use. With the completion of drug screening and scoring tools, the clients learn about their risk level. The meeting also teaches to the clients about the physiological effects of drugs and that how these drugs may endanger their health.

### ***Fifth session: expectations***

The purpose of the change process: raising awareness

Raise awareness includes knowledge of the clients about themselves and their problems. By identifying and verbal expression, expectations are increased about the drug use of the knowledge of the clients on the reasons of their use. This awareness increase motivation of the clients to change and provides knowledge about drug use. As the clients are ready for change, they are able to attempt in order to change their expectations or consideration of other alternatives to achieve the desired effect or their expectations.

### ***Sixth session: expressing concerns***

Goals of change process: re-evaluate their emotional relief

Re-evaluation requires further thinking and behavioral problems identifying the issue that when and how this behavior conflict with personal values. Emotional relief includes experiences and express feelings related to problem behavior.

### ***Seventh session: values***

Goals of change process: self-re-evaluation

Self-re-evaluation is to thinking again about behavioral problem and identification of time and how to contrast this behavior with personal values. With determining the values and how to explain the drug use with the values, the clients will be able to re-evaluate their process of change.

### ***Eighth session: assessment of the advantages and disadvantages***

Goals of change process:

Decisional balance (balancing the decision)

Balance includes decision to evaluate the pros and cons of a behavior. In this meeting, the members determine the advantages and disadvantages of drug use which transferring this assessment can help them to determine the importance of each case. It also enables the members to have an overall picture of drug use, including the positive and negative aspects.

***Ninth session: telecommunications***

The purpose of the change process: re-evaluation of environment (environment-oriented).

***Tenth session: roles***

The purpose of the process: re-evaluation of prospective environment (environmental)

Re-evaluation of prospective environment (environmental) discusses on determining the effect that the behavior has on the lives and the environment. Due to their roles and how the drug use has an effect on their life, they get. Environmental re-evaluation includes cognitive-behavioral impact on the environment. In the case of abusers, the possibility of the effect of drug use is arisen on family, work and their social life.

***Eleventh session: confidence and temptation***

Process goals: self-efficacy

Self-efficacy of individual confidence refers to know whether they can take the necessary steps to carry out the desired behavior. The focus of this session is to help the client to identify tempting situations and assess confidence in similar situations to abstain from drug use.

***Twelfth session: problem solving***

Process goals: self-efficacy

Self-efficacy of individual confidence refers to know whether they can take the necessary steps to carry out the desired behavior. Understanding the clients with their problem-solving skills helps them to think about all aspects of the positions and they should consider that steps leading to their response are based mostly on instincts, feelings and emotions. Their self-efficacy increases when the clients experience success in solving the problem.

***The thirteenth session: setting a goal and readiness for change***

Goals of change process: self-liberalization

Self-liberalization includes a creation of a commitment to change the behavior. In this session, the clients determine an objective on drug abuse and they will create a program to achieve this goal. The clients will use on thinking about objectives and their commitment to the liberalization process of their application.

***Fourteenth session: review and termination***

In this meeting, the clients think about group sessions which have spent and they will discuss on the progress they have made in the field of behavior change.

**RESULTS**

Descriptive statistics information gathered in the mean, median and other necessary parameters were discussed and they were analyzed in inferential statistics using ANOVA and Tukey test.

**Table 2.** Data analysis.

	Number	Mean	Median	Elongation	Skewness
Control of opioid withdrawal	12	-5.16	-4	2.17	-1.31
Therapeutic methadone for the mental health	12	20.75	21	-0.94	-0.33
Cognitive-behavioral in mental health	12	24.83	24	-1.72	0.25

As Table1 shows, in the study of therapeutic methadone and cognitive-behavioral on treatment of leaving drug and improving mental health, the highest mean is related cognitive-behavioral treatment, 24.83 and the lowest mean is related to control group in leaving drug, -5.16.

**Table 3.** The results of calculations of the covariance between therapeutic methadone and cognitive-behavioral method in improving mental health of people dependent on heroin.

	SS	F	df	Sig.
Therapeutic methods	100.04	4.78	1	0.04
Age	20.64	0.98	1	0.33

The results of analysis of covariance in Table 2 show that there is a significant difference between therapeutic methadone and cognitive-behavioral method and control of aging in improving mental health of people dependent on heroin ( $P < 0.05$ ). The difference of mean of in two therapeutic methods is 4.08.

## DISCUSSION AND CONCLUSION

The present study was conducted to compare the effect of therapeutic methadone and cognitive-behavioral therapy to improve mental health in individuals dependent on heroin. For this purpose, based on research goals, some hypotheses were developed and tested and data related to it were presented in the form of Tables. The results showed that therapeutic methadone method with cognitive-behavioral and control of aging had a significant difference on improving mental health of people dependent on heroin. The results from this research are consistent with the results of Dole et al (2009), Fisher and Scott (2010), Carroll et al (2011) in some ways. In explaining the results, it can be said that the use of methadone because it's good for patients, not only results in complete reduction or cessation of drug use, but also this is associated with improving mental health and reducing social crimes because due to being legal of drug use, social status of the person becomes a patient from a convicted person, the patient suffers from symptoms of leaving, relative mental and physical calmness almost the same gets time of the use and can become a productive individual. One of the issues that must be considered in this finding, is to improve the mental health of these individuals, abuse of the drug use by addicts is considered a form of self-medication which the addicts to solve their problems such as depression use them. Cognitive-behavioral therapy improves coping skills of the person and this can help him to use these strategies in facing with the challenges of life rather than the use of drug. Skills that can enhance capabilities of the addict against other suggestions to reuse after his recovery are assertiveness skills, since some addicts have low assertiveness, assertiveness training can also be effective in reducing risk. On the other hand, cognitive-behavioral therapy for drug addiction has components like functional analysis, training and prevention of risk. In functional analysis, the person identifies the reasons for the temptation and risk and by avoiding these factors reduces recurrence of the risk. In training to the person is helped to leave old habits associated with drug abuse and learns more healthy skills and habits. In risk prevention to the authorities in identifying and planning, coping with high-risk situations that may occur in the future, is helped and general efficient coping strategies and also specific skills to avoid temptation is trained to the person. Such training improves their self-efficacy and develops self-control strategies in high-risk situations and thus reduces the risk (Moggi et al., 2009).

### Conflict of Interest

The authors declare no conflict of interest.

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