

Examining the Effectiveness of Group Cognitive-Behavioral Therapy Based on Schema on Impulsivity of Substance Abusers

Fateme Hatami-Nasari,¹ Parviz Azadfallah,² Mansour Tork,³ Majid Eydi-Baygi,^{4*} Shayeste Gharaee-Ardakani⁵

¹ Science and Research Branch, Islamic Azad University, Tehran, Iran.

² Department of Psychology, Tarbiat Modarres University, Tehran, Iran.

³ Young Researchers and Elite Club, Tehran Science Research Branch, Islamic Azad University, Tehran, Iran.

⁴ Shiraz University, Shiraz, Iran.

⁵ Educational and Psychology Faculty, Islamic Azad University, Tehran, Iran.

ABSTRACT

Purpose: To examine the effectiveness of group cognitive-behavioral therapy (CBT) based on schema on impulsiveness of substance abusers in Karaj.

Materials and Methods: This study was quasi-experimental with pre-test, post-test and control group. The statistical population of this study consisted of male substance abusers who referred to Addiction Treatment Clinics of Karaj in 2010. The sample of the study consisted of 30 substance abusers who were selected randomly and were assigned into experimental and control groups. To evaluate the participants in pre-test and post-test, Whiteside and Lynam impulsivity questionnaire was used. Participants of experimental group received group CBT for 12 sessions but participants of control group received no interventions. After implementing the post-test, data were analyzed using covariance analysis and SPSS 16 software.

Results: There were significant differences in impulsivity variables between experimental and control groups after the implementation of CBT ($P = 0.05$).

Conclusion: The findings of this study suggest the importance of group CBT therapy in reducing impulsivity. According to results, group CBT can be a complementary aspect of medical treatment in improving psychological problems associated with addiction.

Keywords: impulsive therapy; methods; psychotherapy; group; cognitive therapy; substance-related disorders; treatment outcome.

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INTRODUCTION

Substance abuse is one of the most important public health problems in societies. The effects and consequences of substance abuse are impressive and destructive in both individual and social levels. Reduced motivation, thinking and cognition disorders, mood disorders, physical injuries at the individual level, delinquency, academic failure and disruption in interpersonal relationships are the problems resulted from substance abuse in social level.⁽¹⁾ Kaplan argues that substance acts as an incendiary, it means

that the individual has the grounds of a severe mental illness incidence and substance acts as a detector.⁽²⁾ In general, the most common psychiatric disorders among substance users can be placed into two main categories, namely, personality disorders and mood disorders. Mild cases of psychotic disorders can be considered as the manifestation of acute poisoning due to the substance and its hallucinogenic side effects. Various psychological studies have been carried out in the case of causes of the initiation of substance abuse, its continuation, and

the recurrence after the treatment. Impulsivity is one of the factors whose role in addiction is discussed in many studies.⁽³⁾ Impulsivity is the main core of many social injuries, such as pathological gambling, substance abuse, personality disorders, and crime commitment. Studies widely support the relationship between impulsivity and drug abuse. Impulsivity may be both the cause of substance abuse and its effect. Impulsivity severity can be a predictor scale for the amount of individual's resistance during quitting or the speed of substance recurrence in them.⁽⁴⁾ Thus, treatments that can reduce the severity of impulsivity will be more successful in the treatment of substance abusers. Cognitive-behavioral therapy (CBT) pattern is one of the prominent intervention patterns in addiction treatment and its effectiveness has been reported in several studies. Hides and colleagues studied 60 individuals with substance abuse disorder and depression. They implemented 20 weeks of CBT intervention and reported that participants of experimental group showed significant improvements in depression, anxiety, substance abuse and coping strategies compared to the participants of the control group.⁽⁵⁾ Soroudi and colleagues also reported the effectiveness of CBT treatment on substance use disorders.⁽⁶⁾ CBT involves the use of specific and practical strategies focused on cognition and behavior, but its emphasis on changing thoughts and cognitions in some cases has caused clients to fail in the challenge with thoughts. This approach also does not develop metacognition in patients.⁽⁷⁾ Hence, the application of novel treatments to overcome these defects seems necessary. The attempt of this study is to use findings related to the schema therapy approach with interventions related to cognitive-behavioral therapy. Young proposed schema therapy for the treatment of patients with chronic health problems who did not get enough help from the classic cognitive-behavioral therapy. These patients were considered as treatment failures in the classic cognitive-behavioral therapy. Young integrated various techniques into a coherent theory and developed schema therapy, that is a systematic approach, and expanded the boundaries of cognitive-behavioral therapy.^(8,9) Schema therapy can be short-term, medium-term and long-term depending on the patient's problem. Schema therapy is developed based on classic CBT with more emphasis on developmental origins of psychological problems in childhood and adolescence, use of motivating techniques and presence of maladaptive coping styles; which has opened new windows to the boundaries of cognitive-behavioral therapy. This treatment is often used in combination with other techniques such as CBT or

psychoactive substances. It is proved that schema therapy is beneficial in the treatment of chronic depression and anxiety, eating disorders, severe marital problems and common problems in continuity of intimate relationships. In addition, schema therapy is effective for criminals and in preventing recurrence of problems among substance abusers.⁽¹⁰⁾ Hence, the therapeutic approach that is applied in the treatment and prevention of substance use recurrence in addicts should identify the initial maladaptive schemas in terms of the issues such as emotions, cognition and physical feelings, with regard to the individuals in their relationship with others that are developed during childhood and last until adulthood.⁽¹¹⁾ So, according to what was stated, this study aims to clarify whether group cognitive-behavioral training based on schema is effective in reducing impulsivity in substance abusers in Karaj or not.

MATERIALS AND METHODS

This study is quasi-experimental with pre-test, post-test and experimental and control groups. Male substance abusers, who referred to addiction treatment clinics in Karaj in 2010, consisted the statistical population of this study. The sample of the study consisted 30 individuals who were selected in an available way and were randomly assigned to two groups of 15 individuals (experimental and control). Firstly, participants of both experimental and control group were evaluated by Whiteside and Lynam impulsivity questionnaire. Then, participants of experimental group received group cognitive therapy based on schema for 12 sessions. After that, the post-test was administered in both groups. Inclusion criteria included: age between 20 to 45 years; education of at least the third grade of junior high school; diagnosis of opioid dependence based on DSM-IV-TR and lack of regular use of anti-psychotic drugs at the time of entry into the treatment program. Exclusion criteria included: suffering from psychotic, bipolar or dissociation disorders; serious body illness that prevents the individuals to participate in the treatment program, and concurrent participating in another treatment program.

In the present study, in order to investigate the impulsivity in a sample of pre-test and post-test, the Whiteside and Lynam impulsivity questionnaire was used. This scale is designed by Whiteside and Lynam, using factor analysis method on 9 valid scales to assess impulsivity. UPPS has 46 items that each of them is graded on a four-point Likert scale (from totally disagree to totally agree).⁽¹²⁾ White Whiteside and colleagues reported the validity and internal consistency

(Chronbach's coefficient alpha) of 82% to 91% for this scale,⁽¹²⁾ and Magid and Colder reported them between 81% to 88%.⁽¹³⁾ Exploratory factor analysis was also used for this scale in Iran. In a study by Azadfallah and SohrabiFard, four main subscales extracted for Iranian population and items related to each one remained without any changes and only four items (11, 26, 29, 34) has been omitted because of their recognizability and poor load factor.

CBT Based on Schema Treatment Plan

Sessions: Group CBT sessions based on schema was conducted in 12 sessions, each session lasted 2 h per week. A summary of the group cognitive-behavioral training sessions based on schema is presented in **Table 1**.

RESULTS

Table 2 shows that the mean of pre-test and post-test in experimental group are respectively 71.27 and 57.93. The mean of pre-test and post-test of control group are

respectively 68 and 70.53.

The results of **Table 3** show that the *F* value is not significant in the mentioned subscale, so the assumption of the equality of variances is confirmed. So, considering the observance of other assumptions for data analysis, covariance analysis test can be used.

Results of **Table 4** show that the group cognitive-behavioral training based on schema on impulsivity in substance abusers was significant after adjusting of pre-test scores ($P = .05$, $F = 4.623$). Results of the above table indicate the reduction of impulsivity in participants of experimental group in post-test. Group cognitive-behavioral training based on schema reduced impulsivity in participants of experimental group.

Table 3. Levine's test for equality of variance assumption.

Variable	Index	F	df1	df2	P Value
Impulsivity		0.511	1	28	.481

Abbreviations: F: 0.511; df₁: 1; df₂: 2

Table 1. A summary of the group cognitive-behavioral training sessions based on schemas.

Sessions	Topic	Agendas
The first	Principles of the group	Introducing the group cognitive-behavioral training program with giving examples and practices.
The second	Thought and feeling	Introducing the main concepts of cognitive therapy, such as activating events, beliefs, assumptions, logical errors, automatic thoughts, schemas, emotional and behavioral consequences
The third	Reasonable errors and appropriate logic	Identifying logical errors and replacing appropriate logic by giving examples and exercises
The fourth	Oppose to logical errors	What is the opposition? How does it work? Effective opposition rules were explained in this session.
The fifth	Identifying the content of negative schemas by using vertical arrows	Determining the relationship between shallow thinking and underlying beliefs
The sixth	Classifying the beliefs and setting cognitive patterns	Participants recognize patterns and schemas of their beliefs and identify the most frequent logical errors
The seventh	Beliefs are changeable and dealing analysis	Participants accept that beliefs are not immutable and changing of beliefs is a natural process and it is done by using dealing analysis.
The eighth	Opposition and dealing discussion	In this session opposition is used for the content of schemas that were identified in the fourth session
The ninth	Changing perceptual assumptions	This session aims to review and explain perceptual changing that is the strong technique of cognitive changing.
The tenth	Changing dysfunctional behaviors	The main purpose of this session is that participants be able to choose dysfunctional behavior and work on it
The eleventh	Planning for the self-changing of the behavior	Identifying the alternative behavior and having skill in showing that behavior
The twelfth	Problem solving	Understanding the cognitive principles related to problem solving and the ability to complete the stages of problem solving

Table 2. Mean and standard deviation scores for impulsivity.

Variable	Experimental Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Impulsivity	71.72	13.09	57.93	13.38	68	12.30	70.53	13.64

Abbreviation: SD, standard deviation.

Table 4. Results of covariance analysis group cognitive-behavioral therapy based on schema on impulsivity.

Effect Source	SS	df	MS	F	P Value
Impulsivity	1066.745	1	1066.745	4.623	.041
Error	6229.699	27	230.730		
Total	131335.00	30			

Abbreviations: F: 4.623; df: 1; SS: 1066.745; MS: 1066.745

DISCUSSION

This study aimed to investigate the effectiveness of group cognitive-behavioral training based on schema on impulsivity in substance abusers in Karaj. The results of this study showed that group cognitive-behavioral training based on schema affects impulsivity of substance abusers, based on the results of **Table 4**, and this treatment reduced impulsivity in participants of experimental group. Impulsivity is the main core of social damages, such as pathological gambling, substance abuse, personality disorders, and crime commitment. Studies widely support the relationship between impulsivity and substance abuse. Moeller and colleagues also showed several evidences in their study about the relationship between substance abuse and impulsivity.⁽⁴⁾ These researchers believe that substance abusers are more impulsive than other individuals, according to self-assessing scales and laboratorial behavioral scales. These researchers claim that impulsivity can be both the cause and the effect of substance abuse. They believe that the severity of impulsivity can be a predictor scale for measuring the persistence of the individuals in duration of quitting and the speed of substance use recurrence. Matusiewicz and colleagues conducted a study to determine the effectiveness of modification of schemas on reduction of personality disorder symptoms. This group found that modification of schemas can predict the amount of reduction in symptoms of these disorders.⁽¹³⁾ Fisher and Scott showed that CBT in substance abusers with personality disorder significantly reduced substance consumption in them, their social and family relationships improved and they gain more effective psychological functioning. CBT is a psycho educational program. The main activity of this type of treatment is learning new skills and applying them in therapy sessions, at home as homework and real life situations.⁽¹⁵⁾ The main intervention in CBT therapy is the intervention in cognitive processes as a mediator of behavioral change. It seems that CBT is the gold treatment because there is a strong theory behind it and its effectiveness is approved. Studies have shown that defects in cognitive functioning are the main impairment in individuals who use cocaine.⁽¹⁶⁾

Considering what was stated, CBT involves the use of specific and practical strategies focused on cognition and behavior, but its emphasis on changing thoughts and cognitions, in some cases, causes patients to fail in challenging with their thoughts. This approach also does not develop the metacognition in patients.⁽⁷⁾ Hence, the application of novel treatments to overcome these defects seems necessary. In this regard, a group of researchers have conducted studies about the effectiveness of CBT based on schema on improving impulsivity. Nurdhal and Nysaeter, in a case study, treated six patients, all of whom had borderline personality disorder based on DSM-IV criteria, by schema therapy.⁽¹⁷⁾ These therapists treated six border patients for 60 minutes per week, during 18 to 36 months. The results showed that in five cases out of six patients schema therapy was effective and the one-year follow-up confirmed the development. Patients showed a significant reduction in interpersonal conflicts and severe changes of emotional states. One of the major components of this treatment reported by these patients was that they were able to identify and name the schema modes. Using empiricist strategies, they were able to cope with childhood memories and yet, impulsive behavior and impromptu mood in these patients significantly decreased.⁽¹⁷⁾ Young proposed schema therapy for the treatment of patients with chronic health problems who did not get enough help from the classic cognitive behavioral therapy.^(8,9) The patients were considered as treatment failure in the classic cognitive-behavioral therapy. Young integrated various techniques into a coherent theory and developed schema therapy that is a systematic approach, which enabled them to expand the boundaries of cognitive behavioral therapy. Schema therapy can be short-term, medium-term and long-term depending on the patient's problem. Schema therapy is developed based on classic CBT with more emphasis on developmental origins of psychological problems in childhood and adolescence, use of motivating techniques and the presence of maladaptive coping styles, which has opened new windows to the boundaries of cognitive-behavioral therapy. This treatment is often used in combination with other techniques such as CBT or psychotropic drugs.

CONCLUSIONS

The findings of this study suggest the importance of CBT in reducing impulsivity. According to the results, group CBT can be a complementary aspect of medical treatment in improving psychological problems associated with addiction. One of the limitations of this study is the use of self-reporting tools that increase the likelihood of reporting more or less than the real amount of symptoms and disorders. Due to the effectiveness of group cognitive-behavioral based on schema on reducing and modifying the initial maladaptive schemas among individuals, it is recommended to use and implement these interventions more comprehensive on substance abusers who are receiving the treatment. Considering the results of the present study, counseling centers are also recommended to hold regular and continuous group training classes by experienced experts in this field and establish these classes on a broader level, even across the country.

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CONFLICT OF INTEREST

None declared.

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Corresponding Author:

Majid Eydi-Baygi, MA
Department of Clinical Psychology, Faculty of Psychology and Educational Sciences, Shiraz University, Shiraz, Iran.
Tel: +98 71 8341674
E-mail: Majid_eydi@yahoo.com

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