Original Article

Effectiveness of Cognitive-Behavioral Group Therapy on Craving, Depression& anxiety among the Opiate abusers under MMT

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Objectives: This study aimed at evaluating the effectiveness of cognitive-behavioral group therapy on craving, symptoms of depression and anxiety among the patients under MMT.

Method: In this experimental study, 36 opiate addicts under MMT were selected out of all the patients referring to Iranian National Center of Addiction Studies on a judgmental sampling method and were randomly allocated to two experimental and control groups. In experimental group, a total sum of 8 sessions (one session per week) of cognitive behavioral group therapy were delivered. The main theme of these sessions were efficient management of craving, negative mood and anxiety. Data were gathered with different questionnaires including the questionnaire of demographic data, RPS for craving assessment, BDI-II for depression and BAI for anxiety. Different methods of statistical analysis were implemented.

Results: The results indicated that post test and follow-up scores of craving index were decreased significantly ($p<0.05$). Depression and Anxiety scores showed significant decrease as well.

Conclusion: Considering the above mentioned findings, we concluded that cognitive-behavioral group therapy was effective in significantly decreasing craving and symptoms of anxiety and depression in opiate addicts under MMT.

Key words: cognitive-behavioral group therapy, craving, symptoms of anxiety and depression, Opiate addiction

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Introduction

Substance abuse has been recognized as one of the major social, psychological and health related problems in current decade. The United Nations annual report indicates that 200 million (5%) of all the population between 15-44 years of age across the world are substance users, out of which 16 million (0.4 %) are Opiate users (1). In our country, Opiates are the most prevalent drug of use (2).

Substance abuse and dependence have severe negative consequences for society. Contagious physical problems like hepatitis and HIV/AIDS, addiction related crimes such as robbery, homicide, domestic violence, child abuse and social-psychological problems like divorce, unemployment, and school dropout among children who have addicted parents are among the damages of addiction (3).

These problems necessitate application of cost effective, evaluated and approved methods of treatment for substance abuse and addiction (4). In recent years, treatment of substance use disorders including medical, psychological and social interventions progressed significantly (5).

The main aim of any therapeutic intervention focus on withdrawal of physical dependence, psychological dependence and non-physical consequences like anxiety, depression, quality of life and eventually relapse prevention (6) . Methadone Maintenance Treatment is one of the well known and reliable approaches of therapy which helps abstinence and prevents relapse (7). Methadone prevents withdrawal symptoms and decreases craving through blockage of Opiate receptors (8). Nevertheless, recent researches show controversial evidence on the effectiveness of

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Methadone in decreasing craving among patients under MMT.

Craving is the main factor causing withdrawal symptoms which is defined by most patients as the tendency to use or a psychological state that demands substance use (9). There are different definitions of craving but when scholars use this term they mean a wide phenomenological spectrum including 1- prediction and expectation of positive reinforcing effect of drug, 2- intention to engage in the act of use and 3- willingness to use (10).

On the other hand, addiction to Opiate drugs is a chronic disorder that most of the time is associated with at least one other psychiatric disorder. Mood disorders and depression are the most frequent Axis-I disorders of DSM-IV-TR co morbid with addiction. Prevalence of Major Depression in these patients is about 50-60 percent and Minor Depression is about 10 percent (11).

Blanchard (12) studied 872 patients under MMT and investigated Axis I and II disorders in them. He concluded that if the opiate addict suffers one of the Axis I disorders simultaneously, he needs medical treatments joined with psychotherapy. Axis II disorders have more negative effects on therapy because these patients need special psychotherapies like cognitive-behavioral therapy or dynamic psychotherapy in addition to MMT. Depression is very common among substance abusers and in most cases is severe enough to meet the criteria for Major Depressive Disorder (13).

Cognitive Behavioral therapy is a short term method which helps substance abusers to recognize the situations with increased likelihood of use. In this way they can avoid these situations and eventually are able to effectively manage drug related problems (14). In cognitive behavioral method different techniques are implemented. Behavioral techniques are primarily focused on avoidance from stimulating situations, different response to these stimulants and offering new appropriate reinforcements. Cognitive techniques help patients to recognize thoughts which precede drug use and replace them with more healthy thoughts. In this way, patients learn to look at situations and relations in different way (15).

Different reports in recent years showed that cognitive behavior therapy has more efficacy in comparison with non-treatment, medical treatment alone and non specific treatments, and it is equally effective in comparison with other psychological interventions in different populations. For example, meta analysis of Irvin et al (16), Caroll et al (17), Kadden (18), McCrady (5), Harde et al (19), Ilgen et al (11), Friedman et al (20) Pastek (21), Pollack(22) and Grusser et al (8) showed that cognitive behavioral interventions had an effective role in decreasing use and craving while improved psychological symptoms and decreased relapse rate (23). Craving, the most important contributor of relapse and psychological symptoms that precipitate craving and relapse are among the important challenges of Methadone Maintenance Treatment. So, this study investigates the efficacy of cognitive behavioral group therapy in decreasing craving and improving psychological symptoms among patients under MMT.

Materials and method:

36 Opiate abusers who referred to Iranian National Center for Addiction Studies and took MMT were selected through judgmental sampling. The researcher called the patients under MMT and explained cognitive behavioral group therapy sessions. 36 patients who were willing to participate were randomly allocated to experimental and control group, 18 patients each. Participants of experimental group signed an informed consent and started cognitive behavioral group therapy while control group received no interventions. In experimental group, 2 patients did not attend for more than 3 consecutive sessions and 1 patient could not attend because of the timing. In control group 2 patients quit MMT for unknown reasons. So, data came from 15 patients in experimental group and 16 in control group.

The research instruments of this study were as follows:

Relapse Prevention Scale (RPS): This scale was developed by Write in order to evaluate the likelihood of relapse in substance abusers (24). The original form of this scale consisted of 50 questions around the situations which usually provokes craving for Cocaine or Crack use. Mehrabi (25) selected 47 questions of this instrument for Opiates. Based on the coping mechanism and level of craving reflected in patient's response, the likelihood of relapse can be predicted. Pilot implementation of this instrument on 40 detoxified patients showed that reliability reached to 0.94% and 0.97 % for subscales of craving and urge amount. High correlations between questions and the scale, all the questions were maintained. The correlation between first and second part of the scale was 0.85.

2- Beck Depression Inventory (BDI-II)

This is a self-report instrument which is widely used for assessment of depressive cognitions. 21 statements of this questionnaire were derived from direct observation of depressive symptoms (26). These statements are scored by the patient from 0 to 3 based on severity of symptoms. Gharaee(27) implemented this questionnaire on a sample of 94

Iranian patients and reported alpha coefficient of 0.91 and one week test-retest coefficient of 0.94. Ghassemzadeh (27) had previously translated and implemented this inventory on 125 Iranian students and reported alpha coefficient of 0.78 and two weeks test-retest coefficient of 0.73 (27).

3- Beck Anxiety Inventory (BAI)

Beck Anxiety Inventory is consisted of 21 statements and measures the severity of anxiety in adolescents and adults. This inventory was developed by Beck and his colleagues in 1988. Each statement describes one of the common symptoms of anxiety like panic and subjective symptoms. It is scored from 0 to 3 and maximum score is 63 which is an indicator of severe anxiety. Beck et al.(26) reported internal consistency of 0.92 and pre- test, post- test reliability of 0.75. Later, Beck studied content validity, construct validity and concurrent validity of this inventory and reported high efficacy in measuring the severity of anxiety. Reliability of BAI was calculated in Zahedan through test-re test method. Correlation between 2 times implementation of this inventory in a 3 weeks interval was 0.7 (28).

Results:

Present study had a total sample of 31 patients with 15 and 16 participants in experimental and control group respectively. Demographic and drug related data are presented in table 1.

Table 1- Demographic and drug related data in experimental and control group

variables		Experimental group		control			df	PV
		frequency	percentage	frequency	percentage	11.67	2	0.92
Age	30-40	6	40	7	43.75			
	40-50	7	46.7	8	55			
	50 upper	2	13.3	1	6.25			
Marital status	married	12	80	11	68.75	9.32	1	0.27
	Not married	3	20	5	31.25			
Level of education	guidance	1	6.7	1	6.25	4.41	2	0.49
	High school	11	63.3	9	56.25			
	graduated	3	30	6	37.5			
occupational status	employed	14	93.3	14	87.5	20.16	1	0.31
	Un employed	1	6.7	2	12.5			
Daily drug consumption	<1 gr	5	33.3	7	43.75	3.96	2	0.26
	1-2 gr	7	46.7	6	37.5			
	>2 gr	3	20	3	18.75			
Daily consumption times	1 time	4	26.7	3	18.75	2.48	2	0.12
	2 times	2	13.3	4	25			
	>3 times	9	60	9	56.25			
Drug use duration	10 years	6	40	5	31.25	11.29	2	0.88
	10-15	6	40	7	43.75			
	>15	3	20	4	25			
Methadone treatment duration	2 month	6	40	7	43.75	18.83	1	0.17
	2-4	9	60	9	56.25			

As table 1 indicates demographic data including age, marital status, education and occupation were not significantly different between experimental and control group. Drug related items including daily drug consumption, number of daily use, duration of drug use and duration of MMT were not significantly different as well.

Table 2 reflects the difference between mean of dependent variables (craving, depression, anxiety).

Table 2- Mean of two groups before intervention

Variable	Experimental group		Control group		t	df	PV
	mean	SD	mean	SD			
Craving	82.73	39.6	87.18	44.94	-0.29	29	0.77
Depression sign and symptom	30.60	15.25	32.25	13.51	-0.31	29	0.75
Anxiety sign and symptom	24.80	14.21	26	10.75	-0.26	29	0.79

As table 2 shows, dependent variables are not significantly different before intervention.
To determine the efficacy of cognitive behavioral group therapy in decreasing craving, depression and anxiety, the difference between pre and post test scores were calculated and compared through the dependent t analysis. The difference between pre test scores of follow up phase was calculated as well. Table 3 reflects the results of analysis related to Craving, while tables 4 and 5 show depression and anxiety analysis respectively.

Table 3- comparison the difference means of craving in two groups

Mean difference	group	mean	SD	t	df	PV
Pre test-post test	experimental	-5.46	10.83	-2.28	29	0.05
	control	-1.06	8.16			
Pre test-Follow up	experimental	-5.2	15.87	-0.38	29	0.7
	control	-3.12	14.17			

Table 3 shows that the mean score of Craving in experimental group after intervention was significantly different from control group, although in follow up it does not indicate any significant difference. It is concluded that cognitive behavioral intervention was effective in experimental group but in long term it could not affect craving.

Table 4- comparison the difference means of depression scores in two groups

Mean difference	group	mean	SD	t	df	PV
Pre test-post test	experimental	-6.6	5.84	-5.91	29	0.00
	control	2.81	2.45			
Pre test-Follow up	experimental	-6.07	6.69	-4.41	29	0.01
	control	2.43	3.72			

As table 4 indicates, mean of scores in experimental group in depression were significantly different from control group in both intervention and follow up phase. Results of independent t analysis showed that there is a significant difference between added scores of participants in intervention and follow up phase which suggests that cognitive behavioral group therapy effectively decreased the sign and symptoms of depression in Opiate addicts under MMT.

Table 5- comparison the difference means of anxiety scores in two groups

Mean difference	group	mean	SD	t	df	PV
Pre test-post test	experimental	-5.46	6.81	-3.73	29	0.001
	control	2.56	5.07			
Pre test-Follow up	experimental	-3.00	9.25	-1.69	29	0.01
	control	1.75	6.81			

Table 5 reflects that mean scores of experimental group in anxiety is significantly different from control group in both intervention and follow up phase. Results of independent t analysis showed that there is a significant difference between added scores of participants in intervention and follow up phase which suggests that cognitive behavioral group therapy effectively decreased the sign and symptoms of anxiety in Opiate addicts under MMT.

Discussion:

This study aimed to investigate the effectiveness of cognitive behavioral group therapy on craving and symptoms of anxiety and depression among opiate addicts under MMT. Results show that this intervention joined with Methadone Maintenance Treatment in comparison with Methadone Maintenance Treatment alone is more effective in decreasing craving and amelioration of depressive and anxiety symptoms.
Results of this study are consistent with many other researches which showed that cognitive behavioral interventions are effective in improvement of psychological symptoms in Opiate abusers. For example Gaudiano (29) showed that cognitive behavior therapies are among interventions which have the best empirical supports and are most effective. Pollack et al. (22) studied the efficacy of

cognitive behavior therapy on decreasing Craving. They suggest that cognitive behavior therapy works through helping patient recognize external and internal stimulants and apply effective strategies. This intervention is also effective in breaking the link between negative mood and drug use.

Clinical trials and different studies showed that craving is triggered by social settings, psychological stresses and anxiety. Cognitive behavior therapy focuses on the increasing awareness toward provoking situations which makes patient avoid or take more appropriate reaction than using drugs. Also, negative mood and anxiety have shown to have a role in using drugs. So, cognitive behavioral interventions could help patients to effectively manage their negative mood. That is the reason of the results we obtained of our treatment modality.

Last but not least is the effect of participation in a group. Ever since 12 step programs were emerged in the scene of substance abuse treatment, researchers observed that sharing time with a group of people who have the same problem has significant therapeutic effect. In our study, implementing cognitive behavioral techniques in group facilitated learning process and encouraged patients to improve their function and fell better.

References:

1. UNDODC. World Drug Report 2005.New York: United nations publication. 2005.
2. Mokri A .Brief overview of the status of drug in Iran: Archives of Iranian Medicine.2002; 5:184-190.
3. West R. Theory of Addiction, Blackwell publishing, oxford.2006;9-28.
4. World Health Organization (WHO). from http://www.who.org/infofax/understand.html.2006
5. Mckray J.R. Lessons Learned from psychotherapy Research. Alcoholism: Clinical and Experimental Research.3.2007; 83: 48-54.
6. Jualie A ., Tuker D.Changing in addictive behavior. New York: The Guilford press.1999.
7. Faggiano F .,Vigna-Taglant F.,Versino E .,Lemma P. Methadone maintenance at different dosages for opioid dependent Cochrane Database syst.Rev.3.2003.
8. Grusser, S. M., Thalemann, C. N., Platz, W., Golz, J., & Partecke, G. A new approach to preventing relapse in opiate addicts: a psychometric evaluation. *Biological Psychology.2006;71:* 231-235.
9. Badger.J., Bickel W,K. ,Giordano L.A. ., Jacobs E.A .,Loewenstein G. ., Marsch L. Altered states. The impact of immediate craving on the valuation of current and Future opioids. Journal of Health Economics.2007; 26:865-876.
10. Tiffany S.T .Cognitive concepts of craving, Alcohol Research and Health.1999;23: 215-224.
11. Ilegn M.., Jain A. Kim H. M. & Trafton. The Effect Of Stress On Craning For Methadone Depends On The Timing Of Last Methadone Dose. Journal of behavior research and therapy.2008; 46:1170-1175.
12. Blanchard, J.J. The co-occurrence of substance use in other mental disorders: editor's introduction. *Clinical Psychology Review.2000., 20:*145-148.
13. Mc Govern M.P., Fox S., Xie H., Dranke R.E.. A survey of clinical practices and readiness to adapt evidence-based practice: Dissemination research in an addiction treatment system. *Journal of substance abuse treatment. 2004;* 26: 305-312.
14. Lau M.A. & McMain, S.F. Integrating mindfulness meditation with cognitive and behavioral therapies: the challenge of combining acceptance and change-based strategies. *Canadian Journal of Psychiatry.2005; 50:*863-869.
15. Carroll K.M .,Rounsanille B.J. A vision of the next generation of Behavioral therapies research in the addictions.Addiction.2007;102:850-862.
16. Irvin J.E. ,Bowers C.A .,Dunn M.E. Efficacy of relapse prevention: a meta-analytic review. Journal of consulting and clinical psychology.1994;67:563-570
17. Carroll K.M .,Ball S.A .,Nich C. Targeting behavioral therapies to enhance naltrexone treatment of opioid dependence: efficacy of contingency management and significant other involvement. Archives of General psychiatry. 2001; 58:755-761.
18. Kadden R. M. Cognitive-behavior therapy for substance dependence: Coping skills training. *Retrieved June.2002; 28, 2002.*
19. Harde V.S ., Morral A.R., Arkes J. Marijuana use and depression among adults: testing for causal association. Addiction .2006;701:1463-1472.
20. Friedman A.S., Teraras A ., Zhu W., Mccallum J. Depression, negative self image and suicidal attempts as effects of substance use and substance dependence .Journal of addiction& disorder. 2004;23,55-71.
21. Pasteke G. A New Approach To Presenting Relapse In Opioid Addicts A Psychometric Evaluation. Biol Psychol.2006; 71: 231-235.22- Pollack M.H., Penara S.A., Bolton E., Worthinger J.J., Allen G.L., Farach F., Micheal W.G. A novel cognitive behavioral approach for treatment resistant drug dependence. Journal of substance abuse treatment.2002; 23:335-342.
23. Drummond D. C., & Glautive S. A Controlled Trial of Cue Exposure Treatment in Alcohol Dependence. Journal of Conclusion Clinical Psychology.1994; 62, 809-817.
24. Gudarzi N. Efficacy of activation psychotherapy and group equanimity on opioid drug use. doctoral dissertation of Health psychology. Tehran university.1385.
25. Mehrabi H.A. Comparison the efficacy of cognitive behavior therapy and family management on opiate addicts. M.A thesis of clinical psychology. Esfahan university.1382.
26. Beck A.T ., writte F.D ., Newman K.F ., Brossel L. Cognitive therapy of addiction. Tehran; rahgosha .1984.
27. Gharaee B. Considering identity styles and its relation to identity styles and depression in adolescents. doctoral dissertation of Clinical psychology. Tehran psychiatric institude.1382.
28. Bakhshani N.M .Considering personality dimentions with anxious events and social support in depressed patients: Testing the cognitive model of depression. Doctoral dissertation of Clinical psychology. Tehran psychiatric institute.1381.
29. Gaudiano B.A .ost (2008) methodological comparison of clinical trials of acceptance and commitmen therapy versus cognitive behavior therapy: Matching Apples with Oranges? Behaviour Research and Therapy.2009; 47 :1066–1070