

Abstract

Objective: The current study was aimed to examine the effectiveness of stress management with behavioral–cognitive mode in the promotion of hope and socio-affective adjustment of drug abusers under methadone maintenance treatment. **Method:** A quasi-experimental research design, along with pretest-posttest and control group was employed for the conduct of this study. In this regard, the number of 20 drug abusers under methadone maintenance treatment was selected by convenience sampling method and these participants were assigned into experimental group (10 individuals) and control group (10 individuals). The participants received ten training sessions and, then, completed Snyder's Trait Hope Scale and Bell's Social Adjustment Scale (BAS). **Results:** The results of the study showed that there is a significant difference between the two groups in terms of hope and affective and social adjustment. In fact, the experimental group experienced a considerable promotion. **Conclusion:** It can be concluded that stress management accompanied by behavioral–cognitive training can be an effective interventionist method for the addicts under methadone maintenance treatment.

Keywords: Stress Management, Hope, Social-Affective Adjustment, Drug Abuse

Effectiveness of Stress Management Training in Hope and Interpersonal Adjustment of Addicts under Treatment

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Introduction

Drug abuse and its prevalence is considered among the main health concerns ahead of the Health and Law Organizations in any society. Huge costs are annually spent on the treatment of addicted people and thousands of people lose their lives because of substance abuse (Angres, Bologeorges & Chou, 2013; Cleck & Blendy, 2008). In a brief estimate, eight people lose their lives every day due to drug use. On the other hand, at least 100 new individuals are infected with drug use every day and more than 10 billion tomans is annually imposed on the country (Mozaffar, Zakariai & Sabeti, 2009).

According to the UN Office for Drug Control and Crime Prevention (2005), there is the number of 200 million drug users among 15-64 year-old population around the world (cited in Karimian, Golzari & Borjali, 2012). The statistics show that the prevalence of drug use is on the rise and the age of the affected population is declining. Addiction is a disease that occasions various biological, psychological, and social consequences and there are different treatment programs in the field. The main goal of most treatment programs is to reduce or eliminate substance use (Ahmadi, Najafi, Hosseini Al-Madani & Ashoori, 2012). Long-term Residential Therapeutic Community, Bedridden Short Term Schedules, Drug-Free Outpatient Schedules, and Outpatient Methadone Schedules are among these interventions. Long-term Residential Program puts the clients under drug-free treatment in a residential society wherein the clients share their problems with counselors and the drug addicts who have recovered. In short-term inpatient programs, clients are physically stabilized and, then, they are encouraged to stay in the state of abstinence through taking some steps towards changing their lifestyles. In outpatient, drug-free programs, a wide range of psychosocial approaches, including 12-step programs are used. Finally, in outpatient methadone programs, the clients are given methadone so that their desire for drug use can be reduced and its impact can be prevented. They are also given advice and it is attempted to foster job skills in such individuals so that they can manage their lives (Halgin & Krauss Whitbourne, 2003, translated by Sayed Mohamadi, 2006).

Methadone maintenance therapies with substitution have been the main addiction treatment in the past thirty years. Researchers found that methadone can cause considerable reductions in desire for drug use, significant declines in the incidence of drug-related crime, and an increase in social functions (Rosenhan & Seligman, 2009, translated by Sayed Mohamadi, 2009). However, it seems that a wide range of factors is involved in therapeutic interventions, such as methadone maintenance programs. Oveisi & Bakhshani (2012) showed that addicted people suffer from early maladaptive schemas and these schemas have an important role in the unsuccessful addiction abstinence. According to Young theory (1999), early maladaptive schemas influence the way of thinking, feeling, and performance of patients, or the way patients communicate with others.

Hashemi, Fotoohi Bonab, Karimi & Bayrami (2010) also showed that substance abusers suffer from more irrational beliefs compared to normal individuals. They also showed that relapse of substance abuse is influenced by various psychological and environmental factors impact and, in this context; the role of cognitive beliefs (irrational beliefs), self-efficacy perceptions, and support networks has been emphasized. These irrational beliefs gradually lead to inability in coping with life issues (Matinejad, Mousavi Bojnordi & Shams Esfandabad, 2009).

Studies have shown that drug abusers tolerate severe emotional problems (for example, higher stress) when confronted with problems and, thus, they lose the opportunity of using efficient problem-solving strategies (Price & Herting, 2013, Koob, 2013, Geiber, 2012). Thus, exposure to stressful situations and use of inefficient emotion-focused problem-solving techniques lead to a vicious cycle and increased stress and decline of adjustment; finally, relapse rate in these subjects increases (Terracciano, Lockenhoff, Crum, Bienvenu & Costa, 2008; Pourkord, Abolghasemi, Narimani & Rezaei Jamalouyi, 2013; Karimi, Hemati Sabet, Ahmadpanah & Mohammadbeigi, 2013; Rostami, Ahadi & Cheraghali Gol, 2012; Ghasemi Hamed, Rabie, Haghayegh & Balahang, 2011). The increase of stress and employment of inefficient coping strategies lead to the experience of successive failures during treatment and negatively influence self-efficacy (Sinha, 2007; Lukman, Roseliza, Arifin, Zainah & Fatihah, 2010). The negative image of the self and reduction of self-efficacy result in reduced motivation. Since motivation (agency thinking) and strategies for goal achievement (strategic thinking) are among the hope factors; obviously, lack of motivation and lack of proper strategies to reach the goal (successful abstinence of drug use) result in the reduction of hope in drug abusers (Snyder, 2002).

Kornor & Nordyik (2007) showed that distinctive changes in personality, anxiety, depression, lack of anger control, and malicious behavior with family and friends constitute the behavioral, communicative, and social problems of drug abusers in treatment over time. Since human behavior is influenced by personality, family, and community factors, the placement of addicts in stressful situations leads to maladaptive behavior and emotional and social conflict. This highlights the necessity of using psychological interventions to help drug users come with the necessary compatibility. Group therapy is widely accepted as a psychological treatment for changing non-adaptive behavior and leading the thoughts and feelings among drug users to achieve better and more effective results. Several studies have examined the role of cognitive-behavioral psychotherapy, such as stress management training in the rehabilitation of substance abusers. The results of these studies have shown that cognitive-behavioral therapy changes the thoughts, expectations, and behaviors associated with drug use and provides the necessary circumstances to enhance the effectiveness of methadone treatment by the development and administration of the required training (Narimani, 2010; Ahmadkhaniha, Gharayipour & Panaghi,

2011; Karimian, et al., 2013). Stress management training can improve the quality of life of drug users (Karimian et al., 2012). It can also reduce anxiety and depression in substance abusers (Jandaghi, Neshat Doost & Jabal Ameli, 2009). With regard to the above-mentioned points, it can be assumed that such hope and adjustment are the important variables that can have a significant impact on the treatment of substance abusers. Despite numerous studies on the effectiveness of stress management training, the effectiveness of this test on adjustment and hope among the addicts under treatment has not been examined to date.

Stress management based on cognitive-behavioral therapy includes different techniques, such as relaxation, anger management and expressiveness, efficient coping, cognitive restructuring, increased self-efficacy, and social support. This training aims to reduce negative mood states and social exclusion and promote the emotional, affective, and social adjustment of abusers (Antoni, Lechner, Kazi & Wimberly, 2006). This training program helps people to adapt themselves in the face of the problems which they cannot change and to enhance self-efficacy and self-esteem through the training of efficient coping methods and cognitive restructuring. This training program leads to changes in the improvement of interpersonal relationships and establishment of intimate relations with family and friends along with a higher sense of empathy. These changes may be due to the reception of social support, expression of emotions, shared experiences in the group, and group support (Karimian, et al., 2012). The aim of this study was to evaluate the effectiveness of stress management training in hope and social-affective adjustment among the addicts under methadone maintenance treatment.

Method

Population, sample, and sampling method

A quasi-experimental research design, along with pretest-posttest and control group was employed for the conduct of this study. All the patients undergoing methadone maintenance treatment at Ariana medicine center in Tehran constituted the statistical population of this study. From among this population, the number of 20 drug abusers under methadone maintenance treatment was selected by convenience sampling method. Then, these participants were randomly assigned into experimental group (10 individuals) and control group (10 individuals). The mean score for the age of these participants was placed in the range of 34.75 ± 6.20 years. The number of 12 participants (60%) was married and 8 patients (40%) were single. In addition, 70% of these people were just abusers of opiates (such as opium, opium extraction, heroin, and crack) and 30% of them also consumed psychoactive drugs in addition to the abuse of opiates. In terms of education, 20% of the participants were high school

graduates, 70% of them held a degree below diploma, and 10% of them held a degree higher than diploma.

Instrument

1. Bell's Social Adjustment Scale (BAS): This scale was designed by Bell (1961) and measures adjustment in five subscales, namely coping at home, health (physical) adjustment, emotional (affective) adjustment, work adjustment, and social adjustment. A high score in each subscale represents higher adjustment.

The reliability coefficients of this scale for the subscales of coping at home, health adjustment, social adjustment, emotional adjustment, and work adjustment and the total scale were reported equal to .91, .81, .88, .91, .85, and .94, respectively. Moreover, a high validity has been reported for this test in distinguishing normal groups from neurotic groups through correlation with Eysenck Personality tests (Fathi Ashtiani & Dadsetani, 2009). The validity of this questionnaire was obtained through the selection of each area in a range of .50 difference between the upper and lower bounds of score distribution. On the other hand, counseling professionals' efforts and interaction with adults have led to the selection of the groups of individuals with adjustment in the range of very poor to very good. In this study, Cronbach's alpha coefficients were obtained equal to .84, .80, and .86 for total adjustment, affective adjustment, and social adjustment, respectively.

2. Snyder's Trait Hope Inventory: It is a 12-item scale, which was developed by Snyder (1996) to target the subjects above 15 years old. It measures two subscales, namely motivation (agency) and pathways. The items are scored based on an 8-point Likert scale from 1 (totally wrong) to 8 (totally right). Lopez & Snyder (2001) reported the internal consistency of the total test within the range of .74 to .84 and its test-retest reliability as .80. Kashdan (2002) reported alpha coefficient of .82 for the total scale and coefficients of .81 and .66 for agency and pathways, respectively. In Iran, the reliability of this inventory was assessed on 100 students and the Cronbach's alpha coefficients were obtained equal to .71 and .67 for agency and pathways, respectively (Shirinzadeh & Mirjafari, 2006). Golzari (2007) reported the internal consistency coefficient of .89 for the Persian version of this inventory. Aladdin et al. (2007) also reported internal consistency of .68 for the inventory (Zare Bavani, 2013). The hope inventory is highly correlated with the inventories measuring similar psychological processes. For example, the scores of hope scale have correlation of .50 to .60 with Scheier & Carver optimism scale (2010). In addition, the scores of this scale have been shown to be negatively correlated with Beck Depression Inventory scores (-.42 to -.51). According to clinical experts, the content validity of this inventory has been also confirmed. In this study, Cronbach's alpha of the scale was obtained equal to .71.

Procedure

First, the patients were asked to announce if they wish to attend training sessions of stress management. Then, the number of 20 subjects enrolled for this program were randomly assigned into two groups, experimental ($n = 10$) and control ($n = 10$) groups. The training package, entitled stress management education package (Anthony et al., 2007) was applied. This package included ten 90-minute intervention sessions (two sessions per week) as described in table 1. It should be noted that all the sessions started with a review of the previous sessions and ended with relaxation exercises.

Table 1: Content of stress management education package

<i>Session</i>	<i>Content</i>
First	Administering pre-test and perceiving the importance and significance of the effects of physical and psychological stress, the importance of monitoring and managing stress levels, and producing a list of stressors (relaxation exercises)
Second	Understanding the relationship between thoughts and feelings; and learning assessment process (relaxation exercises with diaphragmatic breathing)
Third	Practicing the identification of different types of negative thoughts, understanding the impact of negative thoughts on behavior (relaxation exercises in illustration format)
Fourth	Identifying rational and irrational self-talk, teaching the steps for the substitute of rational thoughts (relaxation exercises in illustrated format along with diaphragmatic breathing)
Fifth	Learning a variety of coping, identifying coping styles of the self and effective coping (relaxation exercises in illustrated format along with diaphragmatic breathing)
Sixth	Learning and practicing effective coping steps, training to cope with severe stressors (relaxation exercises in illustration format along with positive visualization, sunlight meditation)
Seventh	Learning anger management (practicing mantra meditation)
Eighth	Learning interpersonal styles, practicing expressive communication and using problem-solving skills (meditation breath-counting exercises, resuming sunlight meditation)
Ninth	Understanding the benefits of social support, identifying obstacles to maintaining social support, learning stress management techniques to maintain social support (relaxation exercises in illustrated format along with diaphragmatic breathing)
Tenth	Doing personal stress management training program, such as: a complete review of the program, planning for domestic relaxation exercises, creating a personal stress management program, conducting the posttest (practicing mantra meditation)

Results

Descriptive findings of hope and adjustment scales are presented in table 1 for both pre-test and post-test. Before the conduct of any statistical analysis, data screening was done at the level of items and subscales in order to detect outliers. To this end, Mahalanobis distance of the variables showed that the maximum values of the index for the data pertaining to Bell Adjustment Scale and Hope Scale were 8.73 and 10.10, respectively, which are smaller than the pertaining critical values, i.e. 13.82 and 10.83 (chi-square distribution with degrees of freedom of 2 and 1). On the other hand, index of maximum value of cook's distance corresponding to the data were .14 and .32, which was lower than the corresponding critical value, i.e. one. These findings represent the absence of outliers in the data of the two variables.

Table 2: Descriptive statistics of the sample group for the variables under study

<i>Variable</i>	<i>Group</i>	<i>Test type</i>	<i>Mean</i>	<i>SD</i>
Adjustment (affective)	Experimental	Pretest	16.20	6.05
		Posttest	16.20	5.10
	Control	Pretest	14.30	6.45
		Posttest	14.30	6.68
Adjustment (social)	Experimental	Pretest	10.90	5.32
		Posttest	14	5.70
	Control	Pretest	12.10	5.61
		Posttest	11.70	6.36
Hope	Experimental	Pretest	23.70	4.08
		Posttest	25.90	2.38
	Control	Pretest	26.20	2.39
		Posttest	25.90	2.38

Before data analysis on Bell Adjustment Scale, different assumptions and indexes were examined as follows: the non-linearity of the relationship between dependent variables, normal distribution of variables, absence of singularity and multicollinearity, equality of covariance matrices, and equality of error variances for the two groups (Meyers, Gamst & Guarino, 2006; Tabachnick & Fidell, 2007).

Linearity of the relationship between the dependent variables was performed by examining via bivariate scatter plot of the data. These plots did not represent a special case of non-linearity. Shapiro-Wilk normality test was also conducted and the results suggested the non-significance of all the variables at significance level of .001. Therefore, normality assumption would not be problematic for the present analysis. The linearity and singularity assumptions were also examined using variance increasing factor and tolerance coefficients (Tabachnick & Fidell, 2007; Pallant, 2007). The results pertaining to the equality of covariance matrices also represented its non-significance for the data relating to Bell's Adjustment Scale ($p < .05$, $df = (1, 18)$, $F = .27$, $M \text{ Box} = .93$). Levene's test was

conducted to examine equality of error variances and it suggested the satisfaction of this assumption for affective adjustment subscale ($p < .05$, $df = (1, 18)$, $F = .34$) and social adjustment subscale ($p < .05$, $df = (1, 18)$, $F = .373$). Hence, the total results show that the assumptions have been met.

Multivariate analysis of variance was used to examine the difference in pre-test and post-test measurements and the results showed that the change trend in experimental and control groups is different between pre-test and post-test ($\eta^2 = .58$, $P < .05$, $df = (2, 15)$, $F = 10.32$, $T2Hotelling = 1.38$). This profile implies that Bell's Adjustment Profile is different between experimental and control groups after the elimination of pre-test effect.

Table3: Results of ANOVA representing the comparison of the effectiveness of the intervention in adjustment components

<i>Component</i>	<i>Sum of squares</i>	<i>df</i>	<i>F</i>	<i>Sig.</i>	<i>Effect size</i>
Affective adjustment	83.03	1	14.53	.002	.48
Social adjustment	.5	1	10.47	.005	.39

Before the conduct of ANCOVA on the data of the Hope Scale, the following assumptions were examined: covariate reliability, linearity of the relationship between the covariate and dependent variable, homogeneity of regression slope, homogeneity of variance error. Since the reliability coefficient of hope scale in this study was slightly larger than .7 (Tabachnick & Fidell, 2007; Pallant, 2007), the bivariate scatter plot between the covariate and dependent variable showed the non-linearity of the relationship. The normality of data distribution was also checked via Shapiro-Wilk test. The index was not significant for any of the variables at the significance level of .001. Homogeneity of regression slope was also analyzed using the interaction method of the group variable with the pre-test ($P > .05$, $df = 1$, $F = .27$). The results showed that the assumption of homogeneity of regression slope has been met. Levene's test results, examining the assumption of homogeneity of error variances indicated that the assumption has been met for the data of Hope Scale ($P > .05$, $df = (1, 18)$, $F = 3.81$). Thus, since the assumptions had been met, the analysis was conducted and the results represented no significant difference between the two groups ($P > .05$, $F = 1.98$).

Discussion and Conclusion

This study was conducted to examine the effectiveness of stress management with behavioral–cognitive mode in the promotion of hope and socio-affective adjustment of the drug abusers under methadone maintenance treatment. The results showed that cognitive-behavioral stress management training can be used as a helpful intervention for the improvement of hope, social adjustment, and affective adjustment among drug addicts. These findings are consistent with those of the studies conducted by Koffler & Bartlett (2012) and Jandaghi, et al. (2009). The mentioned studies indicated the effectiveness of cognitive-behavioral stress management intervention in negative emotions, anxiety, and

depression. The effectiveness of cognitive-behavioral stress management in affective (emotional) adjustment can be explained by the fact that drug-dependent individuals try to immediately prevent and relieve their negative emotions; therefore, they use emotion-focused methods more than problem-focused ones (Cleck & Blendy, 2008). In stress management training, the relationship between emotions, thoughts, and behaviors is taught to people. Therefore, they learn that negative automatic thoughts cause negative emotions and behaviors. Considering these points, individuals can improve their behavior through cognitive restructuring and replacement of thoughts (Safarzadeh, Roshan & Shams, 2012). On the other hand, teaching effective coping strategies leads to the increased use of problem-focused strategies in substance abusers (Price & Herting, 2013; Mate, 2012). In the same way, anger management approaches, relaxation practice, and mental imagery lead to higher control of people over emotions and increased concentration on the application of the methods that entail cognitive processes.

The effectiveness of stress management training based on cognitive-behavioral therapy in the enhancement of drug abusers' social adjustment can be explained in such a way that the following items bring about increased interpersonal relationships and social adjustment: 1. provision of necessary solutions to receive social support through the expression of feelings and thoughts to others, and 2. Provision of appropriate methods of self-assertiveness (Dortaj, Shakiba & Shakiba, 2011). The results of this research are consistent with the findings of other studies in this area (Karimi, et al., 1392; Wander, et al., 2007). The results showed that cognitive-behavioral training of anger management will improve communication skills and the quality and quantity among addicts and will make them communicate more effectively with others. Thus, it can be assumed that communication skills will help increase social adjustment (Papastavrou, Farmakas, Karayiannis & Kotrotssiou, 2010; Sinha, 2009; Price & Herting, 2013; Mate, 2012; Angres, et al., 2013). On the other hand, drug abusers do not employ appropriate strategies to achieve the objectives in the face of stress and this leads to their failure in the achievement of their goals (Matinnejad et al., 2009; Sinha, 2007). It is possible to promote the hope level of addicts by providing efficient coping methods. In this regard, the present study is in the same line with the findings of other studies (Bijari, Ghanbari Hashemabadi, Aghamohammadian Sherbaf & Homayi Shandiz, 2009). According to the findings of this study, if these people are able to use more suitable methods in the face of stressors, their sense of self-efficacy and self-esteem will rise and ultimately hope levels will increase. On the other hand, reception of social support and trust to others can increase the level of hope. Increase in the level of hope among substance abusers can be accounted for in such a way that the provision of efficient problem-solving methods and reception of social support will lead to the hope promotion abusers. Price & Herting (2013) showed that women's social and emotional problems are equal to those of men;

however, these problems may be even more serious in women than those in drug-dependent men and in some cases. For example, the likelihood of incidence of violence and delinquency in women will experience a 6-fold increase (Walsh, 2007). Therefore, the use of cognitive-behavioral therapy in drug-dependent women makes this type of treatment be more practical. Therefore, the necessity of the application of cognitive-behavioral therapies in drug-dependent women causes this type of treatment and therapies of this category may represent aspects that are more practical. In the present study, there was no possibility of conducting this training program in women because they were reluctant to participate in group therapy. Therefore, the researchers are recommended to examine drug abusers' adjustment in various aspects such as adjustment at home, health adjustment, and work adjustment. Secondly, studies should be done more extensively and with a larger number of experimental groups and both genders should be included in the sample in the future studies.

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