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Effectiveness of Training Problem Solving Skills on Happiness of Addicts to Methamphetamine

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Abstract

Objectives: One of the major complaints of addicts in withdrawal period is their malady and boredom. This study aims to examine the effectiveness of problem solving skills on happiness of addicts to methamphetamine in Tehran city.

Method: Using a semi-experimental design and multistage cluster sampling method, 36 addicts were randomly selected and assigned into the experimental and control groups. Both groups filled Oxford Happiness Questionnaire in the pre-test, posttest and after three-month follow up. The participants of the experimental group were taught problem solving skills. Covariance and variance analysis with repeated measurement of Bonn-Ferny test were conducted to analyze the data.

Result: Considering the ETA square (0.28), it can be concluded that the treatment intervention led to 0.28 total change in experimental group. We can say with 99% confidence that there is a statistically significant difference between the mean of the study groups in the three intervention stages.

Conclusion: Training problem solving skills is effective in increasing happiness level of addicts to methamphetamine.

Keywords: problem solving skills, happiness, methamphetamine, addicts.

Introduction

The psychological effects of moderate doses of methamphetamine include immediate euphoria, dizziness, increased alertness, and anxiety-induced boils, and after 60 to 90 minutes, it is followed by constant anxiety. Conscious awareness and psychological attention increases but it is followed by depression (Julian, 2008). Jenner and McKettin (2004) stated that about 49.1 percent of addicted to methamphetamine receive diagnosis of mental health problems. Addiction therapy is one of the known cases in the world. A 24-year longitudinal study showed that %28 of addicts died in this period, %29 of them quitted it, %23 continued the substance abuse, and %18 fell in prisons. Another study also showed that only 10 to 20% of addicts quit the substance abuse (Lader & Naber, 1999). The most serious sign of substance withdrawal is depression which is accompanied by suicidal thought or action and lower level of happiness (Sadock & Sadock, 2007).

There is a negative relationship between addiction and problem-solving. Research indicates that addicts have lower degree of problem-solving ability (Parker, Taylor, Easterbrook, Schell, & Wood, 2008). Problem-solving deficiencies are found to be related to various defects in cognitive functions including addiction, depression, marital conflicts, and weakness in parental skills (Block

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& Hersen, 1999). Samimi (2008) believes that problem solving skills, relying on logical principles, make us successful in solving problems, reduce stress and bring happiness and vitality. Problem solving has had a significant effect on increasing the therapeutic success of addicted adolescents (Frank et al., 1993) and the treatment of depressive disorder caused by drug use among methadone-dependent addicts (Rosen et al., 2011). Vidrine, et al. (2011) examined the effect of motivational problem-solving therapy (MAPS) on quitting addicts and reported that this method increased the rate of drug avoidance and reduced the likelihood of risky behaviors. Another study also found that problem-solving skills can reduce psychiatric symptoms like depression in substance abusers. As depression gradually decreases and patients' cognitions change, patients learn how to deal with life events and stress (tajeri,2019).

Happiness and exhilaration has a very important role in health and dynamics of the society since on the one hand, it is effective in reducing depression and anxiety, and on the other hand, it enforces security feelings, improves immune system of body and promotes psychological and physical health, and consequently accelerates decision-making process and creates a sense of cooperation and increases the individual's life satisfaction. Negative affects can be commonly observed especially at the withdrawal state of stimulant substances in addicts which is one of the main reasons of addicts' failure for preserving long-term abstinence of substances (Tajeri, Ahadi & Jomehri, 2011). Unhappy or depressed people evaluate their skills with a more deliberate caution (Ackerman & Derubies, 1991). In contrast, happy people assess their skills higher than the reality, remember positive events more than negative ones, and make plans more quickly since they enjoy important strategies like searching for information related to health (Argyle, 2004). Level of positive affect is largely dependent on the situation we are, especially for extrovert people. Because positive affect compared to negative affect changes more easily by change of situation; it can be inferred that increase in positive affect will occur more easily and quickly with decrease of negative effects (Eysenck, 1998; Translated by Firouz bakht, 1996).

There is several research in line with boosting life skills for addicted people through different approaches; for instance, Oraki (2019) has found that using Schema therapy may lead to reduce relapse problem in Heroin addicted people. Besides, in another research, it was shown that emotion regulation and coping therapy programs can be used to improve the quality of life of adolescent at risk of drug abuse (Baharebar, Ahadi, & Aghayousefi, 2019).

Enjoying problem-solving abilities help individuals have higher self-esteem and valuable feeling. However, when they lack these skills or apply ineffective strategies for solving their problems, they may develop maladjustment with the surrounding environments, and their psychological health may be threated (Tajeri, 2019). Acquiring problem-solving skills enables individual to deal with life's problems successfully. The most important feature of cognitive-therapeutic methods is cognitive reconstruction. These therapies try to help individuals become successful in their lives via recognizing steps of problem-solving and applying appropriate knowledge and skills. One of the critical models in this field is cognitive-behavior therapy that help patients make a way for their behavioral changes through cognitive therapy by providing psychological instructions (Tajeri, Ahadi, & Jomehri, 2012), and one of these learning materials is problem-solving skill. In most individuals who begin to substance abuse, level of consumption as well as its related problems increases after a while. When an individual face problem, at the first stage he seeks its related concepts or schemes in his mind. If he is good at solving problems, he will use his existing knowledge about that task to define and

understand the problem, thus making the search for memory inevitable. Device-target analysis method is designed to open up more complex issues that may require movements to move away from the target state. This approach seeks to design a series of steps (wisdom, goals) that help the problem solver move toward a solution.

Low happiness is closely related to the occurrence of mental disorders and social harms in addicts, so the plan is used to reduce mental disorders and social harms and prevention. Therefore, this model can be applied to reduce psychological disorders, social harms and prevention. Providing an opportunity for addicts to realize their own pathology and enabling them for making a brighter horizon for themselves will inevitably improve their happiness degree as well as overall performance. In this regard, the present study aims to find if teaching problem-solving skill is effective in improving level of happiness in addicts to methamphetamine.

Method

This study is applied in terms of purpose and is semi-experimental study with a pre-test-post-test and a control group in terms of collecting data (Sarmad, 2009). Covariance and variance analysis with repeated measurement and Bonn Ferny test were conducted to compare the difference between experimental and control groups in terms of happiness degree.

The statistical population included all under-treatment addicts of Tehran city in 2015. Multistage cluster sampling method was used to select subjects. First, among all addiction treatment centers of Tehran city under supervision of ‘’ Professional Association of addiction treatment centers” of three geographical districts, two centers were selected. Then, among 600 addicts, 36 individuals were selected randomly from each center, and then were assigned in experimental and control groups.

Ethical statement

Informed consent forms were given to the participants and all necessary information, including the aims, confidentiality, and non-disclosure of participants’ information, were provided to them. It was explained that if clients were reluctant to continue, they could stop taking part in the study at any time. It was also explained that after the end of the study, the results would be revealed to participants.

Instruments

Oxford Happiness Inventory is the improved version of Oxford Happiness Inventory (Argyle et al, 1989) which is designed by Hills and Argyle (2002) and assesses the following psychological constructs with 29 items: self-image, life satisfaction, mentally preparation, eagerness, aesthetic feeling, self-efficacy and hope. The subjects are asked to indicate the degree to which they agree with each of the statements on 6-point Likert’s scale (from *strongly disagree* to *strongly agree*). Reliability of this questionnaire via re-test method with a 4-weeks interval was computed 0.78 which was meaningful at ($p<0.001$). Cronbach’s alpha for the total index of OHI was 0.84 in test and 0.87 in the retest stage which was acceptable. The total index of OHI had a high correlation with all 5 factors (N, E, O, A, C) of NEO personality test. In addition, factor analysis extracted 7 factors from OHI which expanded 0.33 of variance of questions. Besides, second order factor analysis showed that OHI can be considered as a one-dimensional construct to measure happiness degree (Hadi nezhad, 2006).

Problem-solving Package

The problem-solving skills training course in this research, which included five 2-hour sessions, was designed with two general goals:

1) creating insight toward happiness in an expanded context, like daily problems, and

2) Helping individuals (participants) find a structural approach to a) recognize and define problems, and b) solve these recognized problems. (Mohammadkhani, 1996).

Problem-solving sessions

First session: Greeting and giving some examples of hard situations in life and problem with making decision, stating goals, encouraging involvement and justifying and rationalizing problem-solving skills. Oxford Happiness Questionnaire was distributed.

Second session: reviewing the previous session, and describing the fists stage of problem-solving (getting problem-solving attitude), after a positive approach and assurance of the problem acceptance, the second stage (exact definition of the problem) was explained by offering several examples.

Third session: Examining each of the suggested solutions in the brain storm activity, explaining and justifying the participants about the useful solution and examining them. In this stage, they set accessible goals for solving their problems.

Forth session: Reviewing the effects of selected solution for solving problems. In order to select the best solution, degree of potential success of each solution, and their effects on life environment were discussed.

Fifth session: Evaluation: the effects of performing the selected solution were examined. If they were useful, the problem solving cycle was finished, nevertheless, it would be continued till the elimination of the stress in the situation. It was explained that after selection of the solution(s), the stages to reach that solution should be determined, several programs should be designed, and the time and list of activities going to be performed should be recognized stage by stage. The post-test via OHI was conducted in this stage (Mahdavi, Golestani,Aghaie, Hemmati, Hajhoseini, Lavasani, yegane, & Ghorbaninia, 2019).

Procedure

To perform the package of problem-solving skills training, the time and place of holding the sessions were determined by the participants' cooperation. During the training period, no participant was absent and all of them filled OHI. Information collected from the individuals and shared in the sessions were completely confidential and the participants signed a written consent. Performance of training problem-solving skills was done in several stages. Below a summary of the stages is mentioned.

- Oxford Happiness Questionnaire was performed on all the 600 under-treatment addicts and those whose scores were lower than average were recognized.
- 36 addicts with lower-than-average scores in OHI were selected and assigned randomly in the experimental and control groups.
- The subjects of the experimental group received 5 sessions of training problem-solving skills (each session lasted for 120 minutes).
- Bothe the experimental and control groups participated in the post-test.
- In order to follow up the effect of training problem-solving skills (follow up of the consistency of intervention effect), the addicts of the experimental group filled OHI again after two months.

Findings

The mean and standard deviation of happiness scores in interventions stages of the experimental and control groups is provided in Table 1.

Given the data of Table 1, happiness score mean in the experimental group reached 41.40, while it is 34.35 in the control group.

Repeated measure ANOVA was used to analyze the effectiveness of the intervention. One of the assumptions for repeated measurements is the Kolmogorov-Smirnov test for examining normality, since significance level is larger than 0.05, scores distribution of both groups is normal.

Table 1: The mean and standard deviation of happiness for the two experimental and control groups (N in each group = 18)

Variable	Pre-test				Post-test				Follow-up			
	Experimental		Control		Experimental		Control		Experimental		Control	
	M	Q	M	Q	M	Q	M	Q	M	Q	M	Q
Happiness	30.85	4.02	34.72	3.37	39.39	2.78	32.31	3.55	41.40	3.53	34.35	3.22

Table 2: Results of covariance analysis of scores of training problem-solving skills effects on happiness (N in each group = 18)

Variable	Source of change	Um of squares	Fd	Mean of square	F	Eta square
Happiness	Inter-subjects	3291.12	17	197.68		
	Intra-subjects	5500.36	54	98.73		
	Therapy effect	4276.11	3	1289.32	74.08*	0.28**
	Remained error	953.53	51	16.67		
	total	14021.21	35			

P< 0.01**, P< 0.05*

Levin's test for examining variance homogeneity confirms non-significance of Levin's test on both variables. Hence, variances of both groups are equal and significant. Because significance level is larger than 0.01, the computed F is not statistically significant; hence, assumption of regression scope homogeneity is confirmed because of the insignificant interaction. Assumptions of covariance analysis were confirmed.

Since the significance levels are 0.03 and 0.02, respectively, and smaller than α, as well as the fact that the pre-test effect has been controlled by the covariance analysis, effectiveness of training problem-solving skills on happiness is confirmed. Moreover, since eta squares are 0.28 and 0.51 respectively, it can be inferred that the experimental intervention has led to a change in the experimental group, which 0.28 and 0.51 amounts have been the total changes caused by the experimental action. So, training problem-solving skills has been successful in increasing happiness.

Also, according to Table 3, showing a significant difference between the mean of the groups in follow up, it can be said that there is a significant difference between the experimental and control groups for happiness level. A pairwise comparison for the scales under study, between three pre-tests, post-test and follow-up measurements, using Bonferroni's post hoc test is demonstrated in Table 4.

According to Table 4, pre-test scores are significantly different with post-test and follow up scores of Happiness, and the post-test scores in the follow-up scales has remained relatively constant and the effect of problem-solving skills training is still durable. The results of this study indicate that problem-solving skills training have increased happiness in addicts to methamphetamine in Tehran city. Moreover, the increases in happiness were maintained at follow-up stage. Based on the

Table 3: Results of variance analysis with repeated measure on happiness (N in each group = 18)

Variable		Um of squares	Fd	Mean of square	F	Eta square
Happiness	Sphericity assumption	1411.02	3	743.525	19.53**	0.713
	Green House-Geisser	1411.02	2.53	831.234	19.53**	0.713
	Huynh-Feldt	1411.02	2.07	882.757	19.53**	0.713
	Lower-bound	1411.02	1	1411.02	19.53**	0.713

P< 0.01**, P< 0.05*

Table 4. Bonferroni's post hoc test for comparing happiness using a pair wise approach In the timed lag

Variable	Pre-test- Post-test		Pre-test- Follow-up		Post-test - Follow-up	
Happiness	M.difference	S.error	M.difference	S.error	M.difference	S.error
	7.65*	2.56	15.87*	9.37	22.24*	9.82

$P< 0.01^{**}$, $P< 0.05^{*}$

results, the main hypothesis of the research was confirmed, i.e. problem-solving skills training have been effective on increasing happiness in addicts to methamphetamine in Tehran city.

Discussion and Conclusion

The main aim of this study was to examine the effectiveness of training problem-solving skills on increasing happiness of addicts to methamphetamine under-treatment in Tehran city.

Testing the first hypothesis showed that addicts in the experimental group after receiving problem-solving skills training had higher degrees of happiness compared to the control group. So, it is logical to infer that training problem-solving skills can improve happiness in addicts, and the hypothesis is confirmed. Several scholars have investigated the effectiveness of various interventions on happiness. Abedi and Mirzayi (2006) point to increase of happiness via training problem-solving skills. This finding is consistent with that of Fava (1998), Bell and D'zurilla (2009), Mynor-Wallis (2011), Rathi and Rastogi (2008), and Elliott, et al. (2013). Peterson (2000) also found that happiness can improve psychological and physical health. In addition, the results are consistent with Seligman's (2004) who found that training happiness can decrease depression (opposite zone of happiness). Also, with finding other researcher, such as Seyedasiaban, Manshaee, and Askari (2017), Sung and Jusunk (2017), and Firinicik and Gurhan (2019) were equivalent.

Features of addicts in their life situations (expectations, fears, skills, hopes) influence the degree of mental pressure they feel and general mood (boredom, hopelessness, malady, grief), as well as their abilities to cope with them. The goal of training problem-solving skills is to teach individuals how to think about their problems. This goal is a way to strengthen reasoning and use personal values to make right decisions about problems that ultimately cause a person to have problem-solving skills and not show emotional distress, in contrast to those who lack these skills. Training problem-solving skills is an approach through which the individual learns to use his total cognitive skills to become adjusted with interpersonal problematic situations. Findings of the current study show the importance of applying problem-solving skills as a set of learnable skills in increasing happiness and reducing depression caused by substance withdrawal.

Although we know that the quality of the happiness which is made by using amphetamine is different and short term but the main complaint of addicted is they do not enjoy anything so they decide to increase their amount of usage, researchers predict that by training problem solving skills and boosting happiness, we can decrease their willing toward using amphetamine. But this hypothesis needs further investigations. To explain how training problem solving skills can increase the happiness, we could say that when we learn how to solve our problems logically, we do not feel the need to avoid and forget it. Recently, many researchers approved that using substances is a way of escaping from real problem and it is a kind of coping style when someone did not learn anything else in his life. For instance, when someone faces with emotional failure, he can make several decisions such as becoming numb and forget about what happened by using drugs as a distractor (Seyedasiaban, Manshaee, & Askari,2017). We actually offered them a second chance to find a logical way, that it is

a better to solve problems by brainstorming or any other skill to solve the problem. If someone solves a problem, it is less chance to become addicted or use every other distractor (Sung & Jusunk, 2017).

This study had several limitations that make it necessary to be cautious while generalizing the finding. They include low level of the subjects' cooperation in practicing the trained exercises and confining only to exercises done in each session, lack of training packages based on scientific studies on problem-solving in under-treatment addicts, dissimilarity of the subjects' demographic characteristics, lack of controlled situation to supervise the process of performing exercises, and self-introducing of the addicts. Finally, it is suggested that researchers normalize valid test in problem-solving area, prepare training packages for various addiction groups, specifically for stimulant substance abusers, and make more cooperation with addiction treatment centers to offer these training. Having a longer distance for follow-up and comparing training problem-solving skills with training other kinds of skills are also recommended.

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