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Original Article

The effectiveness of integrated matrix therapy on self-control and emotional regulation in methamphetamine abusers

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Abstract

Introduction: Considering the increasing prevalence of substance abuse disorder and its accompanying violence and aggression among adolescents and youth in recent years, issues such as self-control and emotional regulation in people with substance abuse disorder is imperative. The purpose of this study was to evaluate the effectiveness of integrated matrix therapy on self-control and emotional regulation in methamphetamine abusers.

Materials and Methods: The statistical population of this clinical trial included all patients with methamphetamine abuse who referred to Mashhad Substance Abuse Clinics in winter 2016. Thirty cases were selected by convenience sampling method. Research tools include Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, Spinhoven, 2001) and Tangney's Self-Control Scale (SCS) (2004). After pre-test, the experimental group received integrated matrix therapy in 24 forty-five minute sessions (two sessions per week). Data were analyzed using descriptive statistics, multivariate analysis of covariance, ANCOVA and SPSS software.

Results: Integrated matrix therapy increased self-control and emotional regulation in the experimental group compared to the control group ($P<0.05$). Also, the effect of integrated matrix therapy on emotional regulation in methamphetamine abusers is about 36%.

Conclusion: It seems that integrated matrix therapy has a positive effect on self-control and emotional regulation in methamphetamine abusers.

Keywords: Emotional regulation, Matrix, Methamphetamine abuse, Self-control.

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Introduction

Substance addiction is mainly an emotional disorder and one of the unproductive adaptations that individuals with specific personality and psychological tendencies may choose it in appropriate conditions and socio-cultural tolerance of community (1). Substance abuse is the abuse of a substance in spite of its negative or undesirable consequences, and the substance abuser is someone who suffers from various problems due to the frequent use of the substance In fact, addiction is a chronic disease that has various biological, psychological and social factors (2).Researches in the field of treatment and prevention of relapse suggest that negative and positive emotional states, failure

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to manage the emotions and crave are the most important risk factors for relapse. Emotional adjustment is actually defined as the process of initiating, maintaining, or modifying the occurrence, intensity, or continuity of an inner feeling or emotion related to the psychosocial and physical processes of accomplishing one's goals (3).

People with high levels of anxiety and stress use ineffective emotion regulation strategies. For example, by constantly thinking about future events, they somehow judge their thoughts and this impedes the consciousness to accept the excitement. Thus, by engaging in anxious content of their thoughts, they prevent the reassessment of the position from positive or harmful perspectives. As a result, they resort to inappropriate strategies such as substance abuse to escape these stresses and anxieties (4). According to Gross's theory of emotion regulation (2002), the quality of emotion production and emotion regulation involves all conscious and unconscious strategies used to increase, maintain, and reduce the emotional, behavioral, and cognitive components of an emotional response. On the other hand, regulate emotions means training to reduce and control the negative emotions and the way to use positive emotions. The low level of emotion regulation resulted from the inability to effectively manage and manage emotions plays a role in initiating substance use (5). The continued use of the substance over time and the long-term toxic effects of its use on brain function have led to a wide range of behavioral, psychological, social, and physiological abnormalities that impede the normal physical, mental, and behavioral and behavioral functioning of the person with substance abuse disorder. These physical and psychological problems cause these people to have problems in a variety of areas, especially social issues, and to have difficulty in coordinating and adjusting themselves and the environment (6).

Self-control is one of the concepts that can be used as both the predisposing factor and the consequence of substance abuse disorder. Low self-control and impulsivity had a positive and significant relationship with substance abuse disorder. Self-control is actually the interpersonal conflict between logic and desire, cognition and motivation, and internal planning and action. According to Bandura's social learning approach, self-control is a changeable, learnable and educational concept, and in fact, the reasons for the differences in deviant behaviors between men and women go back to their self-control. The ability to regulate emotions enhances one's own capacity to soothe, perceive common anxieties, depression, or discomfort. Individuals with self-control believe that success or failure depends on their effort or ability. The tendency to commit a crime depends on the level of self-control. In fact, people with low self-control show little tolerance for their own failure and the failure of others (7). Methamphetamine or glass is highly addictive substance and continued abuse and its deleterious effects over time lead to a wide range of behavioral, psychological, social, and physiological abnormalities. Therefore, treatment of these patients is important. One promising therapeutic approach in recent years is the Matrix Therapy Model (8).

Inpatient Depth Therapy or Matrix Model is the main stimulus-specific intervention developed by Matrix Institute experts as empirical and practical approaches to substance avoidance and it is included in the set of successful outpatient interventions to treat amphetamine dependence (9). This model was initially designed to use dependency management approaches. These approaches have resulted in empirically validated treatment outcomes and reduced substance abuse. Repeated and random toxicology screenings are usually part of this program. The Matrix Model Guide focuses on topics that are motivating, longing, and avoiding people about places, and objects that aggravate crave to abuse alcohol or substance. All treatment sessions are provided in a non-judgmental style. This structure helps patients to understand the treatment plan and shape their expectations and create a path to recovery (10).

The purpose of this study was to evaluate the effectiveness of integrated matrix therapy on self-control and emotional regulation in methamphetamine abusers.

Materials and Methods

In this clinical trial, based on the convenient sampling method, several addiction clinics were selected, and after coordinating with their administrators, 30 volunteers were recruited according to the inclusion criteria. These criteria included: having high school diploma, at least one year history of substance abuse, as well as exclusion criteria including diseases such as AIDS, hepatitis, etc. and acute mental

illnesses (such as schizophrenia, paranoid, etc.) were selected to participate in this study. They were randomly divided into two experimental and control groups (n=15). In this study, ethical issues related to the project were discussed before conducting the research, including confidentiality of information and written consent, randomized allocation in groups, the right to withdraw from research at any time they desired.

To perform this design, which was performed at Toos Clinic in Mashhad, pre-test was taken from both groups, then the experimental group received 24 forty-five minute sessions according to the modified Matrix Model based on stimulant substance treatment guidelines (2011).

After the sessions, both control and experimental groups were taken and then the questionnaire was scored and the data were analyzed using SPSS 19 software.

Summary of Therapeutic Sessions (10):

Session 1: The aspects of quitting addiction.
Session 2: The patient was informed that temptations are often not unreasonable and are related to things called starters.
Session 3: The patient's mental training begins and the patient is given an explanation of the stages of withdrawal.
Session 4: Learned to avoid external primers.
Session 5: Intrinsic primers and how to avoid them.
In Session 6: Judging about this family behavior with the patient.
In Session 7: Motivational interviewing and technique to improve patient sense and acceptance.
Session 8: The patient was informed that arbitrary use of substance and other substances as alternative agent is harmful.
Session 9: Being tempted is not a shame and recognizing and understanding about the temptation-related feeling.
Session 10: Learn about short-term and immediate patient techniques in dealing with temptation.
Session 11: Informing about the wrong ways to deal with temptation.
Session 12: Talk about the thoughts, feelings, and behaviors of precursors of substance abuse
Session 13: Fatigue and depression were discussed.
Session 14: The patient was instructed to engage in happy and interested activities.
Sessions 14 and 15: Providing a list of relapse prevention and relapse prone activities
Session 16: Discussed the relationship between work and recovery.
Session 17: Strategies were used to moderate the sense of shame and guilt.
Sessions 18 and 19: Discuss the motivation for continuing treatment.
Session 20 and 21: The benefits of honesty and obviousness as well as the experiences of the participants were discussed.
Session 22: Discusses ways to prevent or treat addictive sexual relations.
Session 23: Predicting recurrence and preventing it.
Session 24: Talk about the key phrase "be smart not strong" and creative ways to escape risky situations.

Research instrument

A) Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, Spinhoven, 2001):
This 36-item scale measures the strategies of emotional regulation included: acceptance, positive reappraisal, planning, putting into perspective, positive refocusing, self-blame, rumination, catastrophising and blaming others. Each question responded in 5-point Likert scale. The alpha coefficient for the subscales of this questionnaire was reported by Garnefski et al. in the range of 0.71 to 0.81. The psychometric properties of Persian version of this scale reported as acceptable (11).

B) Tangney's Self-Control Scale (SCS) (2004):
The brief form of this self-report scale consists of 13 components to measure the degree of self-control of individuals in likert system in a range of 1 (never) to 5 (very often).
The correlation between this form and the complete form of this scale reported 0.92 to 0.93 by Tangney et al (12). Tahbaz Hoseinzadeh et al. assessed the Persian version of this scale in their research and reported its Cronbach alpha equal to 0.74 (13).
The data were analyzed by SPSS19, using mean and standard deviation for descriptive findings and multivariate analysis of covariance analysis to explain the findings.

Results

The descriptive data related to the scores of the participants in two phases, showed in (Table 1). As seen, the descriptive statistics of the research variables are shown in the table above. The comparison between pre-test and post-test phases indicated the significant differences.

Table 1. Descriptive statistics of research variables

Dependent variables	Pre-test Mean ± SD	Post-test Mean ± SD
Self-control	35.50 ± 6.86	42.00 ± 5.90
Self blame	12.50 ± 4.27	7.50 ± 3.89
The reception	11.20 ± 4.10	17.30 ± 3.78
Rumination	11.86 ± 4.42	4.70 ± 4.10
Positive refocus	11.16 ± 4.15	21.13 ± 4.19
Focus on planning	11.60 ± 4.61	22.66 ± 4.04
Positive reassessment	11.96 ± 4.30	22.43 ± 4.14
Perspective	12.40 ± 4.67	22.32 ± 4.64
Catastrophic	11.56 ± 4.21	5.53 ± 4.53
Blame others	12.59 ± 4.99	3.83 ± 4.12

Table 2. The result of Lambda Wilks size effect test for the dependent variable

Partial η2	Sig	F	Hypothesis df	Error df	P	Test
0.533	0.00	14.283	25	2	0.533	The effect of Pillay
0.533	0.00	14.283	25	2	0.467	Lambda Wilks test
0.533	0.00	14.283	25	2	1.143	Hotelling effect test
0.533	0.00	14.283	25	2	1.143	Test the biggest root

According to the above table, there was a significant difference (P<0.01) between the experimental and control groups in terms of adjusted mean of the dependent variable (self-control and emotional regulation), so it can be said that there was a significant difference in at least one of the dependent variables between the experimental and control groups. ANCOVA univariate analysis of covariance was used to determine this difference (Table 3).

Table 3. Results of covariance analysis test

Dependent Variables	Sig.	F	MS	df	SS	Partial η2
Self-control	0.01	28.904	128.309	1	128.309	0.526
Self blame	0.205	1.730	6.160	18	6.160	0.088
The reception	0.089	3.237	118.17	18	118.17	0.152
Rumination	0.483	0.512	2.172	18	2.172	0.028
Positive refocus	0.271	1.288	6.010	18	6.010	0.067
Focus on planning	0.333	0.990	4.230	18	4.230	0.052
Positive reassessment	0.149	2.278	13.030	18	13.030	0.112
Perspective	0.365	0.863	4.846	18	4.846	0.046
Catastrophic	0.017	6.891	22.843	18	22.843	0.277
Blame others	0.012	7.901	35.761	18	35.761	0.305
Total	0.002	12.037	858.790	1	858.790	0.361

According to the above table, it can be seen that there is a statistically significant difference between the experimental and control groups in terms of self-control component, and the effect of ETA is about 52%**.** Also, there was a statistically significant difference between the components of emotion regulation between the experimental and control groups.

Integrated matrix therapy is effective on emotional regulation of the individuals with methamphetamine abuse and this effect was about 36% according to ETA. The mean of post-adjusted mean scores of dependent variables in the experimental and control groups is shown in Table 4.

Table 4. Modified mean scores of posttest of dependent variables

Dependent Variables	Group	M	SD
Self-control	Experimental group	29.407	0.547
	Control group	33.593	0.547
Emotion Regulation	Experimental group	262.162	2.105
	Control group	111.871	2.105

Discussion

The purpose of this study was to evaluate the effectiveness of integrated matrix therapy on self-control and emotional regulation of methamphetamine abusers. Based on the results there is a statistically significant difference between the experimental and control groups in terms of self-control component which indicate the effect of integrated matrix therapy.

Matrix treatment model is a combination of cognitive-behavioral approach, relapse prevention program, anonymous addicts program and family approaches. This therapeutic model has many successes in reducing the amount of substance abuse in the abusers. In-depth outpatient treatment or matrix model is the main stimulus-specific intervention that has been developed by Matrix Institute experts as empirical and practical approaches to substance avoidance and is included in the set of successful outpatient interventions to treat substance dependence. Since most abusers say they have no choice to deal with anxiety, fatigue, depression and fear of failure and purpose in life, the Matrix model is a therapeutic approach. This is a good treatment for addiction and a variety of stimulants abuse because the patterns of skill training in this model increase control over painful emotions, and focus on techniques that identify and counteract the desire for substance abuse.

In this model, therapists help clinicians to form a substance-free lifestyle to achieve substance abstinence and to stay clean. The commonalities in the matrix model lead to a slow transition to sustainable treatment and continuity of treatment (14).

According to Gross's theory, emotion regulation is defined as the process of initiating, maintaining, or modifying the occurrence, intensity, or continuity of the inner feeling and emotion associated with social, psychological, or physical processes in accomplishing one's goals. In a way it can cause positive or negative reactions in people.

If they are appropriate to the situation and condition, they will respond positively and otherwise cause a negative reaction. Therefore, when emotions become severe or prolonged or are not adapted to conditions, it is time to adjust the excitement (15).

Based on the Rawson and Gross findings, it is possible to explain the effectiveness of the integrated matrix treatment on self-control and emotional regulation of addicts, so that the matrix treatment clearly has broad implications and multiple components.

They are cognitive and behavioral and aim to increase one's adaptability to the environment and challenge to avoid the negative consequences of stressful situations. These goals have been achieved in the short term and demonstrate the usefulness of this treatment. In this treatment model, family sessions are also held to enable them and learn how to deal with them appropriately. Therefore, integrated matrix training can be effective in emotion regulation and self-control in patients with substance use disorders (14-16).

The findings of the present study are also consistent with the studies of Becker et al. (17), Conner et al. (18), Sawill (19) and Bari (20) and Klein et al. (21), Waesche et al. (22) and Tavakoli Fard et al. (23), Ritschel et al. (24), Tang et al. (25), are consistent.

The results of study conducted by Mohammadi and Kargar on 30 methamphetamine abusers in Iran showed that structured matrix treatment can improve hardiness and psychological well-being and reduce craving significantly among experimental group compare to control group (26).These findings are concordant with the results of the present study. This research has some limitations such as lack of follow ups and small sample size.

Conclusion

It seems that integrated matrix therapy has a positive effect on self-control and emotional regulation in methamphetamine abusers**.**

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