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Original Article

The Effectiveness of Emotional Regulation Training on Aggression and Coping Styles of Methamphetamine Substance Abusers

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Abstract

Background and Aim: In recent years, drug addiction has become a widespread phenomenon among different socialgroups. The present study aimed to investigate the effectiveness of emotional regulation training on aggression and coping styles of methamphetamine substance abusers.

Materials and Methods: The present study population included all methamphetamine substance abusersin city of Varamin, Iran. The research sample of 30 people with methamphetamine substance usewere selected from the addiction treatment clinic by convenient sampling and randomly allocated into two experimental and control groups. The emotion regulation protocol was trained in the experimental group during the 12 sessions, but the control group did not receive any training. To measure the variables, Aggression Questionnaire and Coping Style Questionnaire were used in pre-test and post-test.

Results: At the end of the sessions, data were analyzed using a covariance test. The results showed that emotional regulation training effectively decreases aggression ($p<0.05$), improves task-oriented and emotion-oriented coping styles ($p<0.05$), and reduces the avoidant coping style in methamphetamine substance abusers ($p<0.05$).

Conclusion: Due to the proliferation of social damage, such as methamphetamine addiction, experts in this field need to master new and effective ways of regulating emotions to help these patients prevent relapse to using the drug. In the training of emotion regulation, in fact, by focusing and being aware of the emotion of anger, a person gets to understand the internal and external factors of anger and also learns how to show it in the direction of his goals instead of avoiding the emotion of anger.

Keywords: Substance abusers, Aggression, Coping style, Emotional regulation, Methamphetamine

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Introduction

Addiction is defined as the compulsory use of drugs with a loss of control over consumption, and after a while, tolerance arises to achieve the effects of the previous use. This phenomenon causes a lot of physical and psychological damage to the individual, their family, and society, and the cost of treatment is very high and, in many cases, ineffective (1). Addiction or substance dependence is usually a recurrent and chronic phenomenon that, in severe cases, can change the function and even the structure of the brain, and therefore the recurrence rate after treatment is very high (2). Changes in the function and structure of the brain due to addiction aggravate its consequences and make the treatment and recovery process complicated.The person cannot control it alone and suffers from many psychological and physical effects (3).

Aggression is one of the psychological damages of addiction. Research has shown a relationship between aggressive behavior and substance use, a complex, profound, costly, and undeniable relationship. But, any discussion of the relationship between drugs and aggression and violence must begin with a definition of this concept (4,5,6). Emotions are mental, biological, purposeful, and social phenomena. Anger and aggression areamong the emotions that play a significant role in human life. According to Geen, Aggression is an annoying stimulus expressed to the other person, which may cause injury while the other person is engaged to flee or avoid it (7). The relationship between aggression, substance abuse, and addiction is more complex than previously thought and involves several indicators such as personality, heredity, and psychological problems (8). Aggressive behaviors can have different manifestations. Aggression includes a variety of behaviors but is more often associated with violent behaviors such as fights and quarrels. It is defined as behavior aimed at harming others through words, organs, or tools (9). Aggression hurts others and demands serious attention from society, so it should be considered when an organization manages addiction problems (10).

Given the harms of addiction and the psychological weakness of the addicted person, the person needs to face their problems and manage them, which are known as coping styles. According to Lazarus and Folkman, some use emotion-oriented coping styles, and some use task-oriented ones. In contrast, others use avoidant-oriented coping styles in the face of emotional situations such as aggression (11). In task-oriented coping, the person focuses more on the problem and tries to reduce the pressure of the stressful situation. In an emotion-oriented coping style, the person performs behaviors far from the main issue and concern and is more focused on themselves and unpleasant feelings. In this situation, the person seeks his emotional balance. Finally, in avoidant coping strategies, the individual seeks to change the situation and cognition, the purpose of which is not to solve the problem but to move away and avoid the dangerous situation (12).

Emotions have a unique role in human growth and development and have a decisive effect on each person’s fate. In the face of dangerous situations, emotions activate a warning system that guides the person in the way forward and plays the leading role in important aspects of life and adaptation or incompatibility with different situations (13). Patients with substance use disorders probably have more emotional problems than ordinary people. In the emotion regulation process, people can manage expressing emotion and, based on the desired situation, evaluate the emotion, and show the appropriate emotional reactions to achieve the goals (14). In general, emotion regulation is a big part of every person's life, and its clutter can reduce a person's quality of life. Emotion regulation involves strategies that increase, decrease, or perpetuate an emotion (15). According to the above, it can be said that emotion regulation is a key and determining factor in psychological well-being and quality of life, which plays a crucial role in adapting to stressful life events.

Drug addiction can cause maladaptation and emotional problems among individuals. On the other hand, some evidence suggests that emotion regulation is associated with success or failure in various areas of life. Difficulty regulating emotions is one of the most common problems in addicts, leading to the inability to manage emotional states in this group of people (16). There are generally six common ways to regulate emotion: reappraisal, rumination, suppression, problem-solving, acceptance, and avoidance. Reappraisal means creating

optimistic or neutral interpretations to reduce negative emotion; Rumination is the multiple focus on thoughts, feelings, and experiences, as well as their causes and consequences; Suppression involves trying to reduce or prevent the expression of emotion or the mental experience of emotion; Problem-solving involves consciously trying to change a stressful situation or avoid its consequences; Acceptance is the awareness of each thought in a general and straightforward way, without judgment and in the present; Eventually avoidance refers to actively and consciously avoiding situations(17). Effective emotion regulation strategies can protect a person against various emotions and tensions. In contrast, people who use ineffective emotion regulation strategies are more likely to use high-risk and harmful behaviors to alleviate their negative emotions (16).

The results of several different studies have shown that people who are impulsive and unable to control their arousal and emotions are more likely to be involved in substance abuse and high-risk behaviors (18). For example, research by Doran, McChargue, and Cohen has shown that impulsive people are more likely to become regular drug users (19).In this regard, research shows that the substances used, especially stimulants such as methamphetamine, are associated with aggressive emotions and harmful and violent behaviors (20, 21).In his study on the relationship between opioid use and aggression, Jaff concluded a positive correlation between substance use and aggression (22). Hayat-bakhsh et al., in their research, concluded that aggression is significant among the predictors of addiction (23).The study results by Szaszet al., Which examined the effects of different emotion regulation strategies on anger experience and expression in undergraduate students, showed that the effectiveness of reappraisal techniques in modulating experience and expressing anger is more significant than acceptance and suppression techniques (24).In another study, Aria et al. Found that people who react inappropriately and uncontrollably in the face of negative emotions such as sadness and anxiety are more likely to use drugs than their peers (25).

According to what has been said and evaluated, aggression, on the one hand, is one of the most important and underlying factors in the tendency to use drugs. Hence, such aggressors use drugs as a sedative to calm themselves. On the other hand, due to people's ignorance in using emotion regulation strategies, the recurrence rate is higher in treated individuals during the violence. Therefore, the present research aimed to study the effectiveness of emotion regulation training on reducing aggression and coping styles in methamphetamine substance abusers.

Methods

This quasi-experimental study utilized a pretest-posttest design with a control group. The statistical population of this study consists of all methamphetamine substance abusers in Varamin city. To achieve the desired sample of the study, 30 people were selected from the total number of people referred to Khorshid-e-Varamin Addiction Treatment Clinic by convenient sampling. Then, the selected individuals were randomly assigned to experimental and control groups. The experimental group was trained in emotion regulation protocol for 12 sessions, while the control group received no training. Written consent was obtained from the participants. The inclusion criteria were age 18 years and above, being male, given informed consent, having addiction criteria, and not having severe psychological disorders such as bipolar and psychosis.

Emotion regulation skills training was performed in 12 sessions based on the Whitley and Berking training protocol (26) for 90 minutes once a week. In this educational protocol, the content of the first and second sessions was the familiarity of the participants with the theoretical and experimental foundations of emotions and how to regulate emotions based on the seven skills (Muscle relaxation, breathing practice, awareness without judgment, acceptance and tolerance, compassionate self-support, analysis, and correction of emotional states) presented in this model. The third session focused on practicing muscle and respiratory relaxation and emphasizing regular exercise, and the fourth and fifth sessions focused on awareness without judgment (emotion awareness and emotional naming).In the sixth and seventh sessions, acceptance and tolerance, in the eighth session, compassionate self-support, in the ninth session, emotion analysis (examining the signs of emotional situation, identifying primary and secondary emotions, and setting coping goals) were discussed. The tenth session was devoted to

modifying and correcting emotions, eleventh session was devoted to further practicing and dealing with specific emotional states and changing them; the twelfth session was devoted to general summarizing and evaluating.

Materials

The Buss and Perry's Aggression Questionnaire

This questionnaire has 29 items and four factors, including physical aggression (9 questions), verbal aggression (5 questions), anger (7 questions), and hostility (8 questions). Each item is rated on a 5-point Likert scale ranging from 1= false for me to 5 = entirely true for me). The total score of the questionnaire ranges from 29 to 145.Thus, in physical aggression, the minimum and maximum scores were 9 to 45, in verbal aggression, 5 to 25, in anger, 7 to 35, and in hostility, 8 to 40.A score higher than the average in general and in all areas was indicative of aggression. This Questionnaire has appropriate validity and reliability for being used by researchers (27).

Endler & Parker coping inventory for stressful situations

It is a self-assessment tool used in clinical and non-clinical groups and a 48-item measure that includes separate adult and adolescent forms. The performance of the adult and adolescent forms is similar. It measures three types of coping, including task-oriented (16 items), emotion-oriented (16 items), and avoidance (16 items), which are mechanisms of release of the problem. In addition, the avoidance coping type itself contains two sub-scales: distraction (8 items) and social diversion (5 items). This scale is performed in groups without a time limit. In the original version of the Endler & Parker(16) coping inventory, the total internal consistency coefficient is reported to be 0.92. This coefficient for its three major scales in task-oriented coping for boys and girls is 0.90 and 0.92, respectively, and for avoidance-oriented coping, 0.85 and 0.82, respectively. For the two sub-scales of distraction and social diversion, 0.78 and 0.80 have been reported. Endler et al. (16) reported its validity and reliability for both adult and adolescent scales at a very high level that can be used by adults, students, adolescents, and psychological patients. Items are scored on a 5-point Likert scale (from 1=not at all to 5=very much). By selecting only one option in each item that they deem appropriate for themselves, individuals determine their type of reaction in difficult and stressful situations. Each subject who scores higher in each coping style uses that style more (28).

Results

Among the research participants, 28 were men and 2 were women. The average age was 38.5 years, and 12 people had an educational level of below diploma, 10 had a diploma, 6 had a master's degree, and 2 had a MA degree. The mean and standard deviation of the age of the participants in the study were 27.8 and 3.15 for the experimental group and 28.6 and 3.89 for the control group, respectively. In Table 1, the mean and standard deviation of the research variables of the two groups in the pre-test and post-test stages are presented.

Then, covariance analysis was used to compare the experimental group with the control group in the aggression variables and its sub-scales and coping styles in methamphetamine addicts. This test has some assumptions that must be considered before performing it. First, Levene test was used to examine the homogeneity of variances of the two groups. The results showed that the scales were not significant, so the homogeneity of variance was confirmed. Also, to test the hypothesis of normality of the data, the results of the Shapiro-Wilk test showed that none of the variables are significant at the level of 0.05;Therefore, the conditions for using the analysis of covariance have been provided. In this regard, the results of the analysis of covariance for research variables are presented in Tables 2 & 3.

Table 1: Mean and standard deviation of research variables in pre-test and post-test.

Variable	Experimental group				Control group			
	Pretest		Posttest		Pretest		Posttest	
	M	SD	M	SD	M	SD	M	SD
Overall Anger Scale	32.104	52.14	69.85	64.11	11.101	28.15	56.103	42.14
physical aggression	65.23	45.4	62.18	25.3	96.21	65.5	43.22	30.5
verbal aggression	28.20	62.5	57.16	27.4	49.21	51.3	06.22	31.4
anger	66.26	21.3	41.23	58.3	72.25	49.4	37.25	25.4
hostility	35.29	04.6	61.27	48.5	16.28	32.6	91.27	18.5
task-oriented coping style	54.26	71.4	47.31	63.6	82.25	64.4	50.26	93.5
emotion-oriented coping style	73.24	52.4	84.33	26.5	19.25	96.3	09.24	19.4
Avoidance coping style	40.56	59.8	13.41	60.7	68.55	14.9	21.54	57.8

The results of the analysis of covariance for the overall aggression scale show that the difference between the two groups is significant. Therefore, emotion regulation training has effectively reduced the aggression of methamphetamine substance abusers. The ETA squared index shows that 37% of the changes in the aggression scale of the experimental group in the post-test were because of emotion regulation training. The power of the 0.86 statistical test and significance index indicates the high accuracy of the test and the

Table 2: Results of univariate analysis of covariance of aggression and aggression subscales in experimental and control groups.

Source	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Power
Covariate	0.649	1	0.649	1.029	0.308	0.14	--
Group	6.833	1	6.833	10.46	0.004	0.37	0.86
Error	17.618	27	0.653	--	--	--	--
Physical aggression	15.940	1	15.940	5.241	0.024	0.31	0.61
Verbal aggression	17.215	1	17.251	4.519	0.039	0.36	0.64
Anger	2.205	1	0.275	0.275	0.609	0.08	0.077
Hostility	3.658	1	1.038	1.038	0.328	0.12	0.156

adequacy of the sample size. According to Table 2, the results of the analysis of covariance for the two subscales of physical aggression and verbal aggression show that the difference between the two groups with pre-test control is significant. But in the other two subscales, including anger and hostility, is not significant. Therefore, emotion regulation training in this study effectively reduced physical aggression and verbal aggression of methamphetamine substance abusers, and anger and hostility had no significant effect.

According to Table 3, the results of the analysis of covariance for all three coping styles of task-oriented, emotion-oriented, and avoidance show that the difference between the two groups is significant. Due to the changes in the means in pre-test and post-test, emotion regulation training has led to an increase in the use of task-oriented and emotion-oriented coping strategies and a decrease in the use of avoidance strategies. ETA squared index shows that in task-oriented, emotion-oriented, and avoidance coping styles, 36, 48, and 55% of the changes in the experimental group in the post-test were due to the effect of emotion regulation training, respectively.

Discussion

This study aimed to investigate the effectiveness of emotion regulation training on reducing aggression and coping styles of methamphetamine substance abusers. The results showed that emotion regulation training significantly reduces aggression and improves task-oriented and emotion-oriented coping styles. These results are consistent with the findings of research that, on the one hand, believe that defects in emotion regulation abilities lead to an increase in negative emotions and a decrease in positive emotions. As a result, dysfunctional behaviors are formed to avoid negative emotions; on the other hand, negative emotions such as anger, anxiety, fear, and sadness prevent individuals from encountering problems. Therefore, the results of the current research in the sense that emotion regulation training can lead to better management of emotions and, as a result, more efficient coping styles, are in line with the results of Duran et al. (22), Hayat Bakhsh et al. (23), Aria et al. (24), Szasz et al. (25) is consistent. However, the results of the present study are not in line with the study of Doran et al. (22), in the sense that regulation of emotions can change the form of aggression.

Emotion regulation is a set of processes through which individuals seek to monitor, evaluate, and redirect the automatic flow of emotions according to their needs and goals (29). Based on the model of coping with emotions, effective emotion regulation is made through 9 abilities: Awareness of emotions; Identifying and naming emotions; Correct interpretation of emotion-related bodily feelings; Understanding the factors that cause emotions; Active adjustment of negative emotions; Accepting negative emotions when necessary; Tolerate negative emotions when they cannot be changed; Facing (rather than avoiding) distressing situations for the sake of achieving essential goals; Compassionate self-support (encouragement, self-relief, guidance) when confronted with unwanted emotions (30).In methamphetamine addicts, anger and aggression sometimes lead to the consumption of methamphetamine to suppress and avoid irritation. Therefore, it can be said that emotion regulation training is special training that directly evaluates and redirects anger towards a person's goals.

On the one hand, by focusing and gaining awareness of anger, the person understands the internal and external causes and factors of the emergence of the anger emotion. On the other hand, the person learns how to express anger constructively and adaptively towards its goals instead of avoiding it overt and covert. Explaining this finding, it can be said that controlling anger as an individual's capacity to overcome and control unacceptable and undesirable impulses and regulate their behaviors, thoughts, and emotions, overlaps with the function of emotion regulation as the ability to recognize, understand and accept emotions, as well as strategies to adjust the experience and expression of emotions in line with long-term goals and values. Thus, training skills that enhance emotion regulation, in turn, lead to a change in the aggressive expression of anger in methamphetamine addicts. Because methamphetamine addicts experience more negative emotions, including anger and aggression, and substance use may be a means of coping with these distressing emotions, methamphetamine consumption is considered a maladaptive and emotion-oriented

confrontation (18-21). Therefore, an intervention based on emotion regulation skills training helps people who are addicted to methamphetamine to learn emotion regulation skills instead of suppressing their negative emotions by consuming methamphetamine; this ultimately leads to a reduction in the feeling and expression of aggression in them.

Another finding of the present study was that emotion regulation skills training has led to an increase in task-oriented and emotion-oriented coping styles and a decrease in avoidant coping styles. According to research, people with addictions, especially those who consume methamphetamine, use the avoidant coping style more in the face of unpleasant problems and emotions. These people prefer not to face the challenging issues of their lives and avoid them, instead of confronting them and finding the right solution, or somehow overcoming their unpleasant excitement or coming to terms with it. Task-oriented coping is when a person is faced with a solvable problem and tries to find the best solution to the situation ahead. Emotion-oriented coping style is when a person faces an unsolvable problem and tries to control and moderate his negative emotions. These two styles of coping with stress are more effective than avoiding them. Avoidance temporarily reduces stress, but it causes the person to experience an unbearable number of unpleasant emotions in the long run. Regarding the improvement of emotion-oriented and task-oriented coping styles and the reduction of avoidant coping styles, it can be said that emotion regulation training directly increases the ability to manage negative emotions and reduce their avoidance and try to experience emotions. It also indirectly improves the problem-solving knowledge and problem-solving skills of methamphetamine addicts. Research shows a positive relationship between aggression and avoidant coping style and a negative relationship between aggression and task-oriented and emotion-oriented coping styles (31, 32). Therefore, it can be said that emotion regulation training by reducing aggression in the sample has improved effective coping styles and reduced avoidant coping style in them. Conversely, improving task-oriented and emotion-oriented coping styles and reducing avoidant ones has reduced aggression in methamphetamine substance abusers.

One of the strengths of the present study was the study of two crucial psychological variables in methamphetamine substance abusers and the effectiveness of emotion regulation skills training on these indicators, which have been neglected and scattered in other studies. However, this research has some limitations. Among other things, this study was performed on methamphetamine substance abusers in Tehran, so generalizing the results to addicts to other drugs and with different social and cultural conditions should be done with caution. Other limitations of the research were the lack of control over other variables involved in the study, such as age, family status, socio-economic status, education, personality traits, etc., in the research. Finally, no follow up were conducted in the present study to evaluate the stability of the therapeutic effects.

Conclusion

This study aimed to investigate the effectiveness of emotion regulation training on reducing aggression and coping styles of methamphetamine substance abusers. The results showed that emotion regulation training significantly reduces aggression and improves task-

Table 3: Results of univariate analysis of covariance test of coping styles of experimental and control groups.

Variables	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Power
task-oriented coping style	35.546	1	35.546	5.26	0.004	0.36	0.81
emotion-oriented coping style	44.231	1	44.231	6.03	0.003	0.48	0.83
Avoidance coping style	133.362	1	133.362	9.64	0.001	0.55	0.89

oriented and emotion-oriented coping styles. It can be said that emotion regulation training is a special training that directly causes anger to be evaluated and re-directed towards one's goals. In fact, by focusing and gaining awareness on the emotion of anger, a person can understand the causes and internal and external factors of the appearance of the emotion of anger in himself, and learns how instead of openly and covertly avoiding the emotion of anger, he can use it in the direction of his goals.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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