Effectiveness of Emotion Regulation Training on the Reduction of Craving in Drug Abusers

Hamed Choopan MSc[1], Seyed Mohammad Kalantarkousheh PhD[2], Yousef Aazami MSc[3], Younes Doostian MSc[4], Ali Farhoudian MD[5], <u>Omid Massah MD[6]</u>

Original Article

Abstract

Background: Emotion regulation appears to provide individuals with a doubled ability to avoid drug relapse and assists with the control of temptation to reuse, which is a type of tendency-avoidance conflict. The present study aims to investigate the effect of Gross model-based emotion regulation training on the reduction of craving beliefs in drug-addicted people.

Methods: The present study was a quasi-experimental design. This was a pre- and post-test design that consisted of control and experimental groups. The study population comprised all addicted individuals who visited addiction treatment clinics in Marivan, Iran. About 30 drug-addicted individuals by the random selection method were chosen. Participants were randomly assigned to either the experimental or control groups. Results were analyzed by univariate covariance analysis.

Findings: Gross model-based emotion regulation training reduced signs and beliefs associated with temptation in drug-addicted people ($P < 0.05$).

Conclusion: Considering the present study's findings, we recommend that addiction treatment centers teach strategies of emotion regulation to drug-addicted people by establishing workshops with the intent to reduce temptation signs.

Keywords: Emotion regulation; Craving beliefs; Drugs

1- Department of Counseling, School of Psychology and Education Sciences, Allameh Tabataba'i University, Tehran, Iran

2- Assistant Professor, Department of Counseling, School of Psychology and Education Sciences, Allameh Tabataba'i University, Tehran, Iran

3- PhD Student, Department of Clinical Psychology, School of Psychology and Education Sciences, Allameh Tabataba'i University, Tehran, Iran

4- PhD Student, Department of Counseling, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

5- Assistant Professor, Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

6- Researcher, Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

Correspondence to: Omid Massah MD, Email: omchomch@gmail.com

Introduction

Currently, substance abuse and addiction are responsible for numerous social and psychological problems worldwide. The prevalence of this phenomenon in Iran has led to a wide range of psychological, social, and family damages. Accordingly, in the course of substance abuse and addiction treatment, detoxification, and withdrawal from drugs are insufficient. Hence, numerous psychotherapy techniques must be adopted to analyze psychological dependence.[1] The United Nations Office for Drug Control and Crime Prevention has estimated the number of substance abusers at 200 million people or 5% of the world's population, among which 16 million people or 4% of abusers are consumers of opium. Iran has the world's highest proportion of heroin and opium addicts. According to this report, one out of every 17 people is addicted to these drugs in Iran. Furthermore, 20% of Iran's 15-60 years old population has an affiliation with substance abuse.[2]

Emotion regulation refers to an individual's effort to influence the kind, time, manner of experience and expression, and change of duration or severity of behavioral, experiential, or physical processes of emotions. Emotion regulation is performed in an automatic or controlled manner, either consciously or unconsciously, and through the application of emotion regulation strategies such as reappraisal, obsessive rumination, self-declaration, avoidance, and inhibition.[3,4] Since emotion regulation constitutes an important part of every individual's life, it is no wonder that disturbances in emotion and its regulation can lead to sadness and psychological harm.[5]

Different approaches have been introduced regarding emotion regulation such as emotion-focused therapy, as well as attachment, insight-oriented, dialectal behavior, and cognitive-behavioral therapies. Among these, one of the introduced models is presented by Gross (Figure 1).[6,7]

This model consists of five stages (beginning, situation, attention, evaluation, and response). According to Gross, each stage of the emotion generation process has a potential regulatory goal, thus emotion-regulating skills can be applied to different points of this process. Factors exist at the beginning or selection that place individuals in emotional excitement or avoidance. In the second stage (situation), changes can be made to the process of emotion generation through situation correction. In this stage, one of the emotion-regulating strategies is self-declaration. In the third stage (attention), redirection or attention expansion is a means to change and regulate emotion. Three ways of attention expansion are a distraction, focus, and obsessive rumination. Among these techniques, distraction is considered to be one of the emotion-regulating metacognitive techniques. With concentration, an individual focuses his/her entire attention on a situation or a certain part of it; obsessive rumination includes focusing attention on feelings and their consequences. In the fourth stage of emotion generation (evaluation), making cognitive changes is the duty of regulating. In this stage, one of the strategies is a cognitive reappraisal. The last stage of emotion generation is the stage of response, whereas response adjustment constitutes the last part of the emotion-regulating process.[7]

Although emotion regulation conceptualizations may differ,[7] several authors agree that emotion regulation be treated as a combination of physiological, behavioral, and cognitive processes that enable individuals to adjust their experiences and the tools of negative and positive emotions.[8]
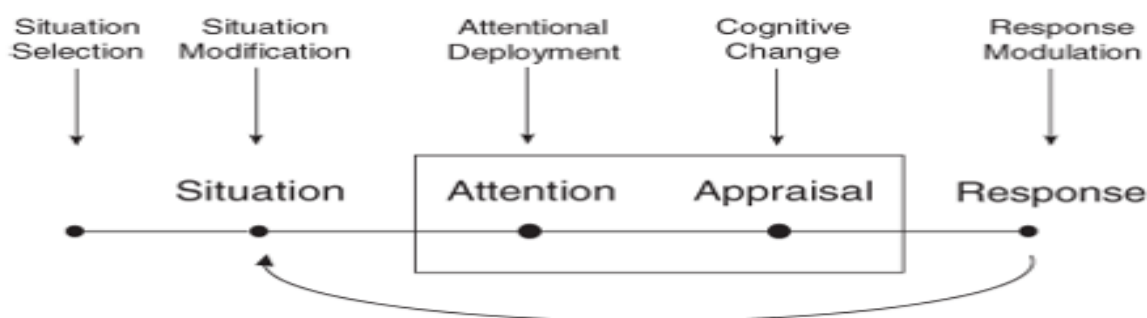

Figure 1. Five stages of the emotion regulation process according to the emotion generation quality model[6,7]

Emotion regulation appears to create a doubled ability to avoid substance abuse and helps to control the temptation of relapse, which is a type of tendency-avoidance conflict.[9-11] Despite the advances in addiction treatment, the return of heavy and uncontrollable periods of abuse remains problematic.[12]

If the intense and resistant desire for substance abuse (craving) is not satisfied, it will lead to psychological and physical ailments such as weakness, anorexia, anxiety, insomnia, aggression, and depression.[13] A low level of emotional regulation that results from failure in effectively dealing with and managing emotions plays a role in the onset of substance abuse and craving.[10,14]

Numerous studies have addressed the role and effect of emotion regulation in anger control. In two studies,[15,16] the effects of various strategies of emotion regulation on experience and anger expression were addressed. In another study,[17] it has been shown that cocaine-dependent individuals when compared to a control group reported problems with understanding and managing emotions during the 1st week of avoidance. Cocaine-dependent individuals showed obvious defects in emotion regulation which were attributed to more stress reaction and control of reduced impulse.[17]

In the presence of peer pressure for substance abuse, effective management of emotions will reduce the risk for this abuse. The ability to manage emotions causes that an individual to adopt appropriate coping strategies in situations where the risk of substance abuse is high. People with high emotion regulation are more capable of predicting others' demands. These individuals understand unwanted peer pressures and control their emotions more efficiently, consequently showing more resistance against substance abuse.[18] In contrast, people who have a lower emotion regulation are attracted to substance abuse to cope with their negative emotions.[18]

Previous studies have shown that one of the main factors of an individuals' tendency toward or return to substance abuse is the temptation of substance abuse. Therefore, the present study seeks to determine if Gross model-based emotion regulation training impacts reduction of craving beliefs in drug-dependent individuals.

Methods

This semi-pilot research utilized a pre- and post-test design with a control group and random replacement. The population consisted of all addicts who visited addiction centers in Marivan, Iran. We used the simple random sampling method to choose 30 drug-dependent individuals. Participants were randomly assigned to either the experiment (n = 15) or control (n = 15) groups.

Inclusion criteria included: Male gender, 18-50 years of age; the presence of drug dependence criteria according to Diagnostic and Statistical Manual of Mental Disorders-5th edition-Text revision (DSM-IV-TR); no severe psychological disorders such as psychosis, bipolar or dissociative disorder according to medical evaluation and psychotherapy; and no physical illnesses which would preclude their participation in the study curriculum, according to medical opinion.

Initially, we visited Marivan's addiction centers after which cooperation from the addiction centers' officials were requested to better perform the project. Next, 30 persons who met the inclusion criteria were randomly selected. We applied the Gross model-based emotion regulation training protocol as the interference factor. This protocol is a recommended method designed by James Gross to teach the proper management and regulation of an individual's emotions. We implemented different stages of emotion regulation training based on the above-mentioned package in the form of eight, 2-hour group sessions. A summary of Gross model-based emotion regulation training sessions is presented in table 1.

Craving beliefs questionnaire

This questionnaire is a self-evaluation scale designed by Beck[19] that evaluates substance abuse temptation-related beliefs. The questionnaire contains 20 items, each rated according to a 7-point scale (1-7 points). Reliability of this test has been reported as 0.84 according to Cronbach's alpha.[19] Rahmanian et al.[20] and Mohammadkhani et al.[21] have reported the reliability of this test as 0.84 and 0.77 according to Cronbach's alpha. In the present study, we determined test reliability to be 0.72 with Cronbach's alpha.

Results

Subjects of the study were 22-45 years of age, with a mean age of 32.33 ± 6.62 years. With regards to educational status, 20.0% were illiterate, whereas 13.3% had an elementary education, 13.3% had

guidance school education, 40.0% had high-school diploma, and 13.3% had a degree higher than a diploma. In terms of marital status, 40.0% were single, 46.7% were married, and 13.3% were divorced. There were 13.3% unemployed subjects, 73.3% self-employed, 6.7% employees, and 6.7% were military personnel. In terms of social class, 53.4% were low social class and 46.7% were middle class. In terms of parents' education level, 73.3% were illiterate, 13.3% had attended elementary school, and 13.3% had guidance school degree. The drugs abused by subjects in this study were opium (40.0%), heroin (7.3%), glass (3.1%), tramadol (3.1%), and crack (7.6%).

Table 1. Summary of Gross model-based emotion regulation training sessions

Sessions	Content
Session 1	Familiarity of group members with each other and the onset of inter-relationship between the group leader (consultant) and members Statement of main and secondary goals of the group and members' conversations regarding personal and collective aims Statement of the logic and interference steps Statement of the framework and principles of participating in the group.
Session 2	Situation selection: Aim: Presenting emotional learning Agenda: Identification of emotion and exciting situations by teaching the difference in performance of emotions, information concerning different dimensions of emotions, and the short- and long-term impacts of emotions.
Session 3	Situation selection: Aim: Evaluating degree of vulnerability and members' emotional skills
Session 4	Situation correction Aim: Creating change in the emotion-exciting situation Agenda: Prevention from social isolation and avoidance Teaching problem-solving strategies Teaching interpersonal skills (conversation, self-expression, and conflict resolution).
Session 5	Attention expansion Aim: Attention shift Agenda: Stopping obsessive rumination and anxiety Attention learning.
Session 6	Cognitive evaluation Aim: Cognitive evaluation change Agenda: Identification of wrong evaluations and their impact on emotional states Teaching reappraisal strategy.
Session 7	Response adjustment Aim: Change of behavioral and physiological consequences of emotion Agenda: Recognition of the degree and quality of using an inhibition strategy and the study of its emotional consequences Confrontation Emotion expression learning Behavior correction through changing environmental boosters. Emotional discharge learning, relaxation, and reverse action.
Session 8	Evaluation and application: Aim: Reappraisal and removal of application obstacles. Agenda: Evaluating amount of achievement to personal and collective goals Application of learned skills in natural environments external to the session Studying and removing assignment obstacles.

Table 2. Univariate covariance analysis related to mean scores in craving beliefs of the experimental and control groups after implementation of sessions

Variable	Source	F coefficient	Effect	Statistical power	P
Craving beliefs	Pre-test	9.47	0.284	0.855	0.002
	Group membership	1.73	0.088	0.252	0.003

Investigating descriptive statistics in two groups indicated that in pre-test, the experimental group [mean = 89.20; standard deviation (SD) = 16.93] had higher scores in craving belief than the control group (mean = 70.66; SD = 16.67). However, in post-test, the control group (mean = 69.46; SD = 14.45) had more craving belief than the experimental group (mean = 56.93; SD = 13.79), which indicates a decrease in the latter group.

In the pre-test stage, there was no significant difference between the experimental and control groups according to the Levine F test (F = 1.101; P > 0.050). Moreover, the Kolmogorov–Smirnov test confirmed the normality of dependent variable distribution (Z = 0.82; P > 0.050). Therefore, we applied the univariate covariance test for analysis of the results. As shown in table 2, after controlling for the pre-test effect, there was a significant difference between the items of craving beliefs in the experimental and control groups. The observed reduction in craving beliefs variance (0.088) observed in the post-test stage could be attributed to the effectiveness of teaching emotion regulation. The statistical power was more than 0.8, which confirmed that the numbers of participants were adequate. Therefore, the research hypothesis that emotion regulation teaching influences reduction of craving beliefs was supported.

In general, the research findings showed that emotion regulation training was influential in reducing craving beliefs among drug-dependent individuals.

Discussion

The present study aimed to investigate the effect of Gross model-based emotion regulation training on the reduction of craving beliefs in substance-dependent individuals. The results were consistent with findings by numerous investigators.[11,22-26] According to this model the experience of negative emotions such as anxiety, depression, and stress led to activation of substance-abuse temptation. An individual's ability to use emotion regulation strategies could influence the effect of temptation on substance abuse.

According to psychologists, one of the features of drug abuse is the temptation that it creates in individuals for renewed tendency toward substance abuse. Exposure to situations where the individuals have previously used drugs leads to drug re-abuse temptation. Thus, teaching how to control emotions and the way to appropriately manage an individual's thoughts under such circumstances largely reduces the risk of return to substance-abuse, which has been supported by the results of the present study.

The results were generally consistent with Khantzian's hypothesis of self-medication. According to study of Khantzian,[27] a disorder in emotion regulation and low tolerance were among the reasons for individuals turning to addiction. The lower tolerance seen in these individuals has been shown to force them to find a quick way for getting rid of emotions.[28]

Negative emotions and failure to properly manage such emotions were stated as another important stimulus for resuming substance-abuse. Empirical research in this area has shown that abusers who use more adaptive strategies of emotion regulation were more successful in treatment courses. On the contrary, people unable to control their emotions more likely become permanent substance abusers.[24] Therefore, by informing avoiding people of substance, temptation and associated positive and negative emotions, and accepting and effectively dealing with them, emotion regulation training can promote these individuals' mental health.[29]

In numerous studies, cigarette smokers reported the main reason for their tendency to smoke was negative affection.[23,30] Results showed that problematic use of alcohol was related to maladaptive efforts to reduce depression signs,[31] regulation and negative emotions.[32]

Numerous proposed treatments for disorders of anxiety, eating, and substance-abuse include reducing maladaptive methods for emotion regulation and increasing different methods for emotion regulation and psychiatric disorders. This enables current psychological-social treatments to be a more effective and becomes the

preferred guidance for time of using each one of them and the guidance for method selection.[11] According to Beck's model[19] and research findings, the severe temptation of drugs can weaken emotion regulation strategies. Studies have suggested that people who experience severe temptation during the avoidance period are not capable of controlling their feelings and emotions. The more severe the temptation is the weaker the strategies will be.[24]

In a study of brain images, it is shown that performing mindfulness exercises reduced biological vulnerability relative to stimuli from negative emotions by increasing the activities within the frontal part of the brain associated with positive affections and by reducing activities within the basal part of the brain associated with abnormal behavior resulting from emotions.[33] Therefore, the use of emotion regulation strategies are now considered to be among the comprehensive treatment programs in relapse prevention. Cooper et al. have shown that teenagers drink as a coping strategy because of negative emotions such as anxiety and depression. The resultant overuse alcohol will lead to more problems concerning this overuse.[34] As a result, teaching coping strategies is an appropriate way to replace substance-abuse. Therefore, considering the findings of the present study, we recommend that substance abuse treatment centers and clinics implement workshops or perianal treatment programs to provide people under-treatment and their spouses with the foundation to familiarize themselves with emotions, types of emotion, how to express and control emotions, and recognition

of emotion-exciting situations. This will enable substance abusers to better adapt themselves to the environment and avoid reusing substances during the occurrence of unpleasant emotions.

The limitations of this study included difficulties in sample selection among individuals who presented to Marivan's Addiction Treatment Clinic, low literacy level of study participants which might have led to bias in answering questionnaires, inconsistent attendance of some participants in sessions, and the enrollment of only male subjects. Therefore, a comparison between genders regarding the effectiveness of using this method was not possible.

Conclusion

The research findings have shown that implementation of emotion regulation workshops can reduce craving beliefs in drug-dependent individuals. Therefore, we recommend that therapists of addiction treatment centers and camps teach the matter of emotion, the way of expressing emotion in different situations, recognition of emotion-exciting situations, and emotion regulation methods to drug-dependent people by implementation of emotion regulation workshops and/or group therapy and individual treatment sessions with the intent to prevent individuals from reusing substances.

Conflict of Interests

The Authors have no conflict of interest.

Acknowledgements

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اثربخشی آموزش تنظیم هیجان مبتنی بر مدل Gross بر کاهش عقاید وسوسه‌انگیز در افراد وابسته به مواد مخدر

حامد چوپان¹، دکتر سید محمد کلانترکوشه²، یوسف اعظمی³، یونس دوستیان⁴، دکتر علی فرهودیان⁵، دکتر امید مسّاح⁶

مقاله پژوهشی

چکیده

مقدمه: به نظر می‌رسد که تنظیم هیجان، توانایی مضاعفی را برای خودداری از مصرف مجدد مواد در افراد پدید می‌آورد و به کنترل وسوسه مصرف دوباره که نوعی کشمکش گرایش- پرهیز است، کمک می‌کند. بنابراین، پژوهش حاضر با هدف تعیین اثربخشی آموزش تنظیم هیجان مبتنی بر مدل Gross بر کاهش عقاید وسوسه‌انگیز در افراد وابسته به مواد مخدر انجام شد.

روش‌ها: این پژوهش از نوع طرح‌های شبه آزمایشی بود که در آن از طرح پیش‌آزمون- پس‌آزمون با گروه شاهد استفاده گردید. جامعه پژوهش را کلیه معتادان مراجعه کننده به کلینیک‌های ترک اعتیاد شهرستان مریوان تشکیل داد. ۳۰ نفر از افراد وابسته به مواد با استفاده از روش نمونه‌گیری تصادفی انتخاب شدند و با همین روش در گروه‌های آزمایش و شاهد قرار گرفتند. نتایج با استفاده از روش تحلیل کوواریانس تک متغیره تجزیه و تحلیل شد.

یافته‌ها: آموزش تنظیم هیجان بر اساس مدل Gross، می‌تواند علایم و عقاید مرتبط با وسوسه را در افراد وابسته به مواد کاهش دهد (۰/۰۵ > P).

نتیجه‌گیری: با توجه به یافته‌های پژوهش حاضر، پیشنهاد می‌گردد که مراکز ترک اعتیاد با اجرای کارگاه‌هایی، راهبردهای تنظیم هیجان را جهت کاهش علایم وسوسه به افراد وابسته به مواد آموزش دهند.

واژگان کلیدی: تنظیم هیجان، عقاید وسوسه‌انگیز، مواد مخدر

۱- گروه مشاوره، دانشکده روان‌شناسی و علوم تربیتی، دانشگاه علامه طباطبایی، تهران، ایران

۲- استادیار، گروه مشاوره، دانشکده روان‌شناسی و علوم تربیتی، دانشگاه علامه طباطبایی، تهران، ایران

۳- دانشجوی دکتری، گروه روانشناسی بالینی، دانشکده روان‌شناسی و علوم تربیتی، دانشگاه علامه طباطبایی، تهران، ایران

۴- دانشجوی دکتری، گروه مشاوره، دانشگاه علوم بهزیستی و توان‌بخشی، تهران، ایران

۵- استادیار، مرکز تحقیقات سوء مصرف و وابستگی به مواد، دانشگاه علوم بهزیستی و توان‌بخشی، تهران، ایران

۶- پژوهشگر، مرکز تحقیقات سوء مصرف و وابستگی به مواد، دانشگاه علوم بهزیستی و توان‌بخشی، تهران، ایران

Email: omchomch@gmail.com   **نویسنده مسؤول:** دکتر امید مسّاح