Effectiveness of emotion regulation training on increasing self-efficacy and well-being in drug-dependent individuals

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Abstract

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Background: Emotion plays an important role in adapting to life changes and stressful events. Difficulty regulating emotions is one of the problems drug abusers often face. The present study aimed to determine the effectiveness of emotion regulation training on increasing self-efficacy and well-being in drug-dependent individuals.

Materials and Methods: The present study had a quasi-experimental design wherein pretest-posttest evaluations were applied using a control group and follow-up. The population was all substance abusers who referred to the Mehrvarzan addiction treatment clinic of Rafsanjan, Iran, in 2015. The statistical sample was composed of 30 available members.

Results: The results showed that the emotion regulation training has significant effectiveness in increasing self-efficacy and well-being in substance abusers. The effectiveness of the training on increasing well-being was persistent in the follow-up period, but increasing self-efficacy was not persistent. Thirty substance-dependent individuals were selected and then randomly assigned to the experiment and control groups. The experiment group received its training in eight 1.5-hour sessions. Analysis of variance with repeated measures was used to analyze the data. There was significant increase in self-efficacy (P < 0.01) and well-being (P < 0.01) after emotion regulation training.

Conclusions: Self-efficacy and well-being in drug-dependent individuals of this study were increased by emotion regulation training. We may conclude that the emotion regulation training can be applied alongside other therapies to treat drug abusers in addiction treatment clinic.

Keywords: Training, Emotion, Self Efficacy.

Introduction

Opiate substance abuse affects different aspects of people's biologic, mental and social lives and not only creates addiction, but negatively affects the substance abuser's socio-economic status and plays an essential role in his/her psyche and emotions (1).

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 (2).

Emotion plays an important role in adapting to life changes and stressful events (3). The ability to manage emotions allows the individual to use appropriate resistance strategies when exposed to situations where there is a risk of substance abuse (4, 5). The effective management of emotions is: 1) calming downat times of distress; 2) self-control; 3) anger management; 4) impulse control; 5) expression of emotions at the right time and space; 6) avoidance of continued stress, anger, and depression; 7) management of life's failures and unavoidable difficulties; 8) preventing the over-shadowing effect of negative emotions on one's judgment and

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problem-solving ability; 9) enduring failure; and 10) accepting and valuing one's self (6). Gross and John presented a model for emotion regulation process on the basis of the emotion generation quality model. The primary model included five stages (onset, situation, attention, assessment, response) (7, 8). People with emotional problems more often use maladaptive strategies such as obsessive thinking, worrying, avoidance, and so forth (9). Clarck showed that positive correlations were found between wellness and reappraisal, difficulties in emotion regulation and suppression, and difficulties in emotion regulation and relapse (10).

One of the main factors of an individuals' tendency toward or returning to substance abuse is reduction of self-efficacy in drug abusers. Bandura conceptualized efficacy expectancy as the belief that one can successfully execute behaviors needed to produce a desired outcome. He distinguished this from outcome expectancy, which is the belief that performing a given behavior will lead to certain outcomes (11). Self-efficacy was found to be a strong predictor of the occurrence of coping behavior, level of performance, and perseverance in facing difficult problems. Bandura and Locke concluded that belief in one's performance efficacy, i.e. the belief that desired results can be achieved by one's own efforts, is necessary to mobilize and sustain coping behaviors (12). Ibrahim et al. showed there was relationship between self-efficacy and relapsed addiction tendency. These results gave the impression that low self-efficacy can create negative effect to the addicts in order for them to continue to be free from drugs (13).

In recent years, pathological approach to study human health has been criticized. Despite the viewpoint that defines health as an absence of illness, new approaches emphasize on "being good" instead of "being bad" (14). Ryff's model that is used in this research is one of the most important models in the area of psychological well-being. He defined psychological well-being as "striving for per-

fection in order to prove true potentials of individual" (15).

So, psychological well-being consists of following items; 1) self-acceptance: positive attitude towards self and acceptance of different dimensions, 2) positive relations with others: feeling of satisfaction and intimacy of relationship with others, 3) autonomy: feeling of independence and effectiveness on life events and active role in behaviors, 4) dominance on environment: feeling of dominance on environment, controlling external activities, 5) purposeful life: having a goal in life and believing that the past and present life are meaningful; and 6) personal growth: feeling of personal growth and achievement of new experiences (16). The purpose of this study was evaluating the effectiveness of emotion regulation strategies on increasing self-efficacy and well-being in drug abusers.

Material and Methods

This quasi-experimental study was conducted with pretest-posttest evaluations using a control group and random replacement. The population under study included all addicts (100 individuals) attending Mehrvarzan addiction treatment clinic of Rafsanjan, Iran, in three-month period in 2015. Some information was collected about educational status, social class and married status. Sampling was done in two stages. In the first phase, convenience sampling was done by visiting one of Rafsanjan's clinics accessible to the researcher. Then, simple random sampling was done to select 30 substance-dependent individuals who were then randomly and equally assigned to the experiment and control groups.

Participants were randomly assigned to either experiment (n = 15) or control (n = 15) groups. Inclusion criteria included: male gender, 25-45 years of age, being drug-dependent according to Diagnostic and Statistical Manual of Mental Disorders Fifth Edition Text Revision (DSM-IV-TR) criteria, 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, 30 persons who met the inclusion criteria were randomly selected. We applied the Gross model-based emotion regulation training protocol as the interference factor. We implemented different stages of emotion regulation training based on the above-mentioned package in the form of eight 1.5-hour group sessions (two sessions in week). One group was exposed to the test variable, and the control group received no intervention (17-19).

 After giving their consent to participate, they completed the emotion regulation, well-being and self-efficacy questionnaires. In the next stage, all the test participants were asked to participate in all of the sessions. Eventually, the intervention group received the intervention, and the control group received no training or intervention. After the course was concluded, both groups were evaluated (however, after the training course was conducted, and to preserve the control group's mental health, a single training session was held that had no effect on the research result). The intervention and control group's follow-up was completed two months after the intervention by conducting the test on the intervention group and evaluating them again.

Gross model-based emotion regulation training included eight sessions. In the first session, the participants became more familiar with one another, the second session they recognized emotion and arousing situations and their effectiveness, the third session the people assessed and identified regulatory strategies, the fourth session they learned problem solving strategies, the fifth session the people put an end to obsessive thinking and worrying, the sixth session they learned the reappraisal strategies, the seventh session these people learned emotional catharsis, relaxation and reverse action and the eighth session they

assessed the extent of achievement of personal and group goals.

The Emotion Regulation Questionnaire (ERQ) is an established 10-item self-report questionnaire. The questionnaire consists of 10 items capturing two specific emotion regulation strategies, cognitive reappraisal and expressive suppression on a 7-point Likert scale. High, mean and low extent of scores are 70, 40 and 10, respectively. Individuals that score lower than 40 have weak emotion regulation and the researcher determines them as target group. The cognitive reappraisal scale has 6 items and the expressive suppression has 4 items. No items are reversed. In earlier studies, the ERQ had high internal consistency for both the cognitive reappraisal and expressive suppression subscales ($\alpha = 0.79$ and 0.73, respectively) (19).

Using Cronbach's alpha, the validity coefficient calculated in this study was estimated at 0.80. Cronbach's alpha of suppression and reappraisal was 0.68 and 0.76, respectively. In Iran, this test was initially standardized by Hosini (20), and its Cronbach's alpha was estimated at 0.79 for reappraisal subscales. In research of Gross and John, internal correlation was estimated as 0.79 and 0.73 for reappraisal and suppression, respectively.

Well-being scale: this questionnaire was developed by Ryff (21). This scale includes six axis (the number of questions is mentioned in parentheses): autonomy (9, 12, 18), dominance on environment (1, 4, 6), personal growth (7, 15, 17), positive relations with others (3, 11, 13), purposeful life (5, 14, 16), self-acceptance (2, 8, 10). The questionnaire consists of 18 items capturing six subscales on a 6-point Likert scale. High, mean and low extent of scores are 108, 63 and 18, respectively. Items 1, 4, 5, 8, 15, 16, 17 and 18 are reversed for scoring. Individuals that score lower than 63 have low well-being and researcher determines them as target group.

Using Cronbach's alpha, the validity coefficient calculated in this study was estimated at 0.68. Ryff and Signer reported

correlation of this test with 84-questions scale from 0.70 to 0.89. In Tabasi research, internal correlation was 0.94 for total well-being test and 0.63 and 0.89 for subscales. Sherer's self-efficacy questionnaire: the questionnaire consists of 17 items on a 5-point Likert scale. High, mean and low extent of scores are 102, 51 and 17 respectively. Individuals that score lower than 51, have low self-efficacy and researcher determines them as target group. Items 1, 3, 8, 9, 13 and 15 are reversed for scoring. Using Cronbach's alpha, the validity coefficient calculated in this study was estimated at 0.63. Validity coefficient using Cronbach's alpha was estimated 0.86 for general self-efficacy and 0.71 for social self-efficacy (22). In Iran, this test was standardized by Barati (23). In this study, SPSS software (version 20.0, IBM Corporation, Armonk, NY, USA) was used (21).

Results

The participants were asked to provide information about following, age, marital status, and level of formal educational. The participants of the study were in the age range of 25-45 years, with a mean age of 31.37 ± 6.76 years. About 33.3% were old system sixth graders, 53.3% were high school graduates, 10% had a bachelor's degree. Also 36.7% were single, 46.7% were married and 13.3% were divorced, 43.3% used opioids and 53.3% used stimulants.

Table 1 shows descriptive information of variables that included mean and standard deviation. This table investigated descriptive statistics of research variables in pretest, posttest and follow-up for two groups (experimental and control).

Table 1: Statistics properties of research variables in pretest, posttest and follow-up with considered group separation

Variable group		N	Pretest		Posttest		Follow-up	
			Mean	SD	Mean	SD	Mean	SD
Self-efficacy	Control	15	43.87	2.45	43.13	4.50	43.13	4.16
	Experimental	15	45.13	2.64	60.00	6.23	44.20	4.21
Well-being	Control	15	54.80	4.30	55.33	3.96	55.13	4.19
	Experimental	15	56.27	3.49	65.67	4.59	59.73	3.24

SD: Standard deviation

We applied the covariance analysis test to evaluate the effectiveness of emotion regulation training on increasing self-efficacy and well-being in drug-dependent individuals. It has usually 7 common assumptions (Shavelson, 1382). Before statistical analysis, these presumptions were observed: independent individuals scores, the normality of variables distribution with the Kolmogorov–Smirnov test, linearity with test of linearity (P < 0.01), independent covariate variable and experimental process and also covariate variable measurement without error in the controlled conditions. Also the presumption of equality of the regression slope or curve and homogeneity of variance of the test and control groups have been approved with SPSS software. Based on Levene's test, the presumption of variance equivalences was confirmed for self-efficacy variable (F = 1.15, P > 0.05) and well-being variable (F = 3.51, P > 0.05). There was necessary presumption for using statistics test. Table 2 reports main effects of research variables.

Table 2: Summarized results of ANCOVA of considered variables in the posttest stage

Variable	F	P	Eta	Observed power
Self-efficacy	63.74	0.0001	0.70	1.00
Well-being	76.19	0.0001	0.74	1.00

ANCOVA: Analysis of covariance

Based on the results, F value was significant in well-being variable (F = 76.19, P < 0.01). It can be concluded that emotion regulation training had significant effects on increasing well-being in drug-dependent individuals. Therefore, first hypothesis that emotion regulation teaching increases well-being in drug-dependent individuals was supported and null hypothesis was rejected.

Also, F value was significant in self-efficacy variable (F = 63.74, P < 0.01). It can be concluded that emotion regulation training had significant effects on increasing self-efficacy in drug-dependent individuals. Therefore, second hypothesis that emotion regulation teaching increases self-efficacy in drug-dependent individuals was supported and null hypothesis was rejected. Also, as observed power was high in mentioned variables, it can be concluded that experimental intervention had influence on variables. Table 3 shows summarized results of variance analysis (with repeated measurement design).

Based on results, F value was significant in well-being and self-efficacy in (P < 0.01). The mean comparison in pretest, posttest, and follow-up showed that there was a significant difference among three situations (Table 1). Therefore, it was considered as difference between means.

Based on findings in table 4, results showed that there was not any significant difference between pretest and follow-up test in self-efficacy variable, therefore it can be concluded that emotion regulation training did not have stability and constancy in drug-dependent individuals. Also, results showed that there was significant difference between pretest and follow-up, therefore it can be concluded that with 99% confidence, emotion regulation training had stability and constancy in drug-dependent individuals.

Table 3: Summarized results of variance analysis (with repeated measurement) considered variables in the follow-up test

Variable	F	P	Eta	Observed power
Self-efficacy	45.51	0.0001	0.61	1.00
Well-being	45.52	0.0001	0.619	1.00

Discussion

In this study, the effectiveness of emotion regulation training in increasing self-efficacy and well-being was evaluated in substance-dependent individuals. The results showed that emotion regulation training can increase the level of self-efficacy and well-being in substance-dependent individuals. Based on the first hypothesis, emotion regulation training was effective in increasing well-being.

Yuruk and Yurk investigated the relationship between alcohol consumption and psychological well-being among young adults in the United States. However, other studies have shown the effectiveness of different approaches (24). For example, Clarck showed that positive correlations were found between wellness and reappraisal, difficulties in emotion regulation and suppression, and difficulties in emotion regulation and relapse. The purpose of this study was to address a significant gap in the literature regarding substance-abuse treatment by exploring the

relationships among wellness, emotion regulation, and relapse (10).

On the other hand, many studies have shown that substance abusers have difficulty regulating their emotions, and their negative emotional state hastens their substance abuse (25). Based on the research results, it might be said that substance-dependent individuals are less capable of enduring failure because of their mood traits. Therefore, these individuals use substance as an avoidance-based coping strategy albeit a negative and inefficient one to reduce their problems. In this training, individuals achieved the understanding of self-role and determined high and meaningful goals in life that are components of well-being. They distinguished self-emotions and others and these caused positive relation with others and helped discovering purposeful life.

Based on the second hypothesis, emotion regulation training was effective in increasing self-efficacy. With regard to substance use disorders, numerous studies have shown a strong relationship between self-efficacy beliefs (often referred to as abstinence self-efficacy) and drinking/drug-use outcomes, following a variety of treatments (13). As noted by Bandura, people who have both the necessary skills and strong coping efficacy are likely to mobilize the effort needed to successfully resist situations of high-risk for drinking or drug use. In the event of a slip, highly self-efficacious persons are inclined to regard the slip as a temporary setback and to reinstate control, whereas those who have low self-efficacy are more likely to proceed to a full-blown relapse (12).

A number of studies cited here have expressed similar thinking. However, despite fairly widespread concurrence with this sentiment, very few substance abuse treatment studies have been designed for the specific purpose of enhancing self-efficacy (26). In one such study, Yen et al. reported that a brief cognitive-behavioral intervention with heroin and methamphetamine users resulted in improved confidence to resist urges in interpersonal, but not intrapersonal, high-risk

situations (27). Moos and Moos found that greater self-efficacy (as well as less reliance on avoidance coping) predicted remission from drinking after as long as 3 years, whereas those with less self-efficacy were more likely to relapse (28). Choi et al. showed refusal response efficacy (RE) and alcohol-resistance self-efficacy/marijuana-resistance self-efficacy (ASE/MSE) were negatively related to alcohol use and marijuana use, whereas MSE was positively associated with alcohol use. These data demonstrate that efficacy is a broader construct than typically considered in drug prevention (29).

Mckay et al. reported a domain-specific association between alcohol involvement and self-efficacy, with more problematic alcohol use associated with higher social self-efficacy but lower emotional and academic self-efficacy (30).

This study was about opioid-addicted patients, and the studied sample included patients in one addiction treatment clinic. Therefore, the generalizability of the results to other addictions and treatments is limited. Other limitations of the present study were lack of follow-up in the control group, the time limit for providing education, and lack of control associated with pretest effects. It is suggested that future research should consider these issues and investigate the intervention effect on other patients, such as addicts undergoing the abstinence-based method. We recommend that other researchers compare cognitive behavior therapy (CBT) and acceptance and commitment therapy (ACT) approaches in increasing emotion regulation and well-being and self-efficacy. Also, we recommend that substance abuse rehabilitation centers hold workshops and or include the following concepts in their rehabilitation therapies: patients can be familiarized with the concepts of emotions, different types of emotions, methods of emotion expression and control, and identification of emotion-arousing situations to better adapt to their environment, and also to prevent their reverting to drug abuse upon experiencing unpleasant emotions.

Conclusion

The research findings have shown that implementation of emotion regulation workshops can increase self-efficacy and well-being in drug-dependent individuals. Therefore, we recommend that therapists in 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 implementing emotion regulation workshops and/or group therapy and individual treatment sessions with the intent to prevent individuals from reusing substances.

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References

1. Zahed A, Ghalilo K, Abolghasemi A, Narimani M. The relationship between emotion regulation strategies and interpersonal behavior among substance abusers. Journal of Research on Addiction 2009; 3(11):99–114.
2. Gross JJ. Handbook of emotion regulation. 2nd ed. New York City, United States: Guilford Press; 2015.
3. Vanderhasselt MA, Koster EH, Onraedt T, Bruyneel L, Goubert L, De Raedt R. Adaptive cognitive emotion regulation moderates the relationship between dysfunctional attitudes and depressive symptoms during a stressful life period: a prospective study. J Behav Ther Exp Psychiatry 2014; 45(2):291–6.
4. Garnefski N, Van Den Kommer T, Kraaij V, Teerds J, Legerstee J, Onstein E. The relationship between cognitive emotion regulation strategies and emotional problems: comparison between a clinical and a non-clinical sample. Eur J Pers 2002; 16(5):403-20.
5. Trinidad DR, Johnson CA. The association between emotional intelligence and early adolescent tobacco and alcohol use. Pers Individ Dif 2002; 32(1):95-105.
6. Clark L. SOS help for emotions: managing anxiety, anger and depression. 2nd ed. United States America: SOS Programs & Parents Press; 2008.
7. Gross JJ, John OP. Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J Peres Soc Psychol 2003; 85(2):348–62.
8. Gross JJ, Thompson RA. Emotion regulation: conceptual foundations. 2nd ed. New York City, United States: Guilford Press; 2007. P.3–26.
9. Nyklíček I, Vingerhoets A, Zeelenberg M. Emotion regulation and well-being. 1st ed. Berlin/Heidelberg, Germany: Springer Science & Business Media; 2010.
10. Clarck PB. The relationship between wellness, emotion regulation, and relapse in adult outpatient substance abuse clients [PhD thesis]. Greensboro, North Carolina, United States: University of North Carolina at Greensboro; 2012.
11. Schwarzer R. Self-efficacy: thought control of action. 1st ed. Abingdon-on-Thames, United Kingdom: Routledge, Taylor & Francis; 2015.
12. Abdollahi Z, Taghizadeh F, Hamzehgardeshi Z, Bahramzad O. Relationship between addiction relapse and self-efficacy rates in injection drug users referred to Maintenance Therapy Center of Sari, 1391. Glob J Health Sci 2014; 6(3):138-44.
13. Ibrahim F, Kumar N, Samah BA. Self efficacy and relapsed addiction tendency: an empirical study. The Social Sciences 2011; 6(4):277-82.
14. Ryff CD, Singer BH. Know thyself and become what you are: a eudaimonic approach to psychological well-being. J Happiness Stud 2008; 9 (1):13-39.
15. Sun HM, Li XY, Chow EP, Li T, Xian Y, Lu YH, et al. Methadone maintenance treatment programme reduces criminal activity and improves social well-being of drug users in China: a systematic review and meta-analysis. BMJ Open 2015; 5(1):e005997.
16. Seligman MEP. Flourish: A visionary new understanding of happiness and well-being. 1st ed. New York City, United States: Atria, Simon and Schuster; 2012.
17. Gross JJ, Thompson RA. Emotion regulation: Conceptual foundations. 1st ed. New York City, United States: Guilford Press; 2007. P.3-24.
18. Aldao A, Nolen-Hoeksema S, Schweizer S. Emotion-regulation strategies across

psychopathology: a meta-analytic review. Clin Psychol Rev 2010; 30(2):217-37.

19. Gross JJ, John OP. Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. J Pers Soc Psychol 2003; 85(2):348-62.

20. Hosseini FS, khayyer M. Investigation of the role of teacher in mathematic academic emotions and students emotion regulation. Modern Psychological Research 2010; 5(20):41-63.

21. Ryff CD, Keyes CL. The structure of psychological well-being revisited. J Pers Soc Psychol 1995; 69(4):719-27.

22. Sherer M, Maddux JE, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers RW. The Self - Efficacy Scale: construction and Validation. Psychol Rep 1982; 51(2):663-71.

23. Barati Bakhtiari S. Studying simple and multiple of self efficacy, self esteem and self care with educational function in the students [MSc thesis]. Ahvaz, Iran: Shahid Chamran University of Ahvaz; 1997.

24. Ertan Yoruk C, Yoruk BK. The impact of drinking on psychological well-being: evidence from minimum drinking age laws in the United States. Soc Sci Med 2012; 75(10):1844-54.

25. Habil MH, Abd Rashid R, Sulaiman AH, Peters H, Ahmad Zahari MM, Amer Nordin AS, et al. Substance abuse and violence behavior. International Journal of Addiction Sciences 2010; 1(1):1-5.

26. Bandura A, Locke EA. Negative self-efficacy and goal effects revisited. J Appl Psychol 2003; 88(1):87-99.

27. Yen CF, Wu HY, Yen JY, Ko CH. Effects of brief cognitive-behavioral interventions on confidence to resist the urges to use heroin and methamphetamine in relapse-related situations. J Nerv Ment Dis 2004; 192(11):788-91.

28. Moos RH, Moos BS. Rates and predictors of relapse after natural and treated remission from alcohol use disorders. Addiction 2006; 101(2):212-22.

29. Choi HJ, Krieger JL, Hecht ML. Reconceptualizing efficacy in substance use prevention research: refusal response efficacy and drug resistance self-efficacy in adolescent substance use. Health Commun 2013; 28(1):40-52.

30. McKay MT, Sumnall HR, Cole JC, Percy A. Self-esteem and self-efficacy: Associations with alcohol consumption in a sample of adolescents in Northern Ireland. Drugs 2012; 19(1):72-80.