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The Effectiveness of Cognitive-Behavioral Techniques (CBT) on Emotional Intelligence in Cannabis Users (3 Months Follow-Up)

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Abstract

Object: Low emotional intelligence can affect coping strategy of individuals and is one of the risk factors of addiction. This study has been conducted to investigate effect of cognitive-behavioral techniques to on emotional intelligence cannabis users.

Method: Among Drug Addiction Centers of Tehran, several centers were selected using random sampling method. All Cannabis users interested in participating in this study who have inclusion criteria fulfilled emotional intelligence questionnaire and those with low score of emotional intelligence were selected as sample. In next step, these individuals were screened through fulfilling The Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) in terms of personality disorders. Hence, 36 people were selected using random sampling and were placed in two 18-member groups. Experimental group was under cognitive-behavioral techniques for 12 sessions and control group was in waiting list. Both groups were evaluated in baseline, session 6, end of treatment and 3 months follow up. The data were analyzed using repeated measures ANOVA, two-factor ANOVA and PAIRED t-test in SPSS-20.

Results: Experimental group has demonstrated significant improvement compared to control group during 4 times measurement in scales including Interpersonal, intrapersonal, general mood, adaptability and stress tolerance scales ($p < 0.01$).

Conclusion: Cognitive-behavioral approach can affect promotion of emotional intelligence of Cannabis users.

Keywords: Cognitive-behavioral techniques; Emotional intelligence; Cannabis users

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Introduction

Emotional Intelligence (EQ) is the ability to detect emotion of self and others and regulation of emotions in social positions [1]. Components of emotional intelligence include 1) intrapersonal intelligence (emotional self-awareness), assertiveness, self-regard, self-actualization and independence; 2) interpersonal intelligence (empathy, interpersonal relationship, social relationship); 3) coping (problem solving, reality testing, and flexibility); 4) emotion control (stress tolerance, impulse control) and 5) general mood (happiness and optimism) [2].

Scholars believe that people with high EQ have higher ability to cope with new routine problems. Moreover, High emotional intelligence is in significant correlation with extroversion, flexibility, identification of different emotions, harmonizing the emotions and their effect on brain and behavior [3,4]. On the contrary, low emotional intelligence is in correlation with internal problematic behavior, low levels of empathy, inability to regulate mood, depression, addiction to alcohol and drugs, sexual misconduct, theft and aggression. In regard with social damages and destructive behaviors such as addiction, emotional intelligence can be effective. Studies have demonstrated that people with high emotional intelligence have less social deviations such as aggression and addiction to alcohol and drugs [3]. According to Dunn, one of the main advantages of emotional intelligence is avoiding isolation and isolation rate is high in addicted people [5]. In this field, a study has demonstrated that people with low emotional intelligence use drugs to cope with their negative emotions [6]. Austin et al (2005) have also demonstrated that addicted people have basic problems in terms of features and components of emotional intelligence.

Table 1: T-test to compare components of emotional intelligence of participants in baseline stage.

Variables	Experimental group		Control group		T	Sig
	Mean	SD	Mean	SD		
Intrapersonal scale	116.66	17.42	118.52	18.21	1.96	0.09
Interpersonal scale	83.88	14.44	80.96	14.18	1.98	0.54
General mood	17.61	4.71	15.21	1.93	1.87	0.74
Coping scale	68.72	10.37	65.91	11.72	1.23	0.94
Stress tolerance	18.77	2.73	14.72	1.64	3.61	0.74

Investigations of European Monitoring Center for Drugs and Drug Addiction (2010) has estimated prevalence of using Cannabis, cocaine and ecstasy during lifetime in European adults respectively to 22.5, 4.1 and 3.3% and has introduced hashish as the most common drug in Europe. Obtained results from epidemiologic studies in field of prevalence of using hashish show that the drug is the most common drug used by West [7]. In Iran, according to findings of Sarami et al [8] since two decades of studies in field of prevalence in field of drug abuse among Iranian students during 1995-2013, it was found that the most common drugs used by students respectively include cigarette, tobacco, alcohol, opium, Cannabis (Hashish) and heroin.

Although Cannabis creates no dependence physically, it is harmful from several dimensions: first, hashish can lead to mental independence; second, it can hart body physically and third, it can endanger mental health of individuals [9-13]. Cannabis can disrupt emotional balance of individuals and affect emergence of mood disorders such as depression, Dysthymia and bipolar disorders [14,15]. As negative emotional moods are related to drug abuse and its effects, empowerment of people with addiction with emotion management skills seems useful [16-19].

One of the psychological approaches that have been effective in field of treatment of drug abuse is Cognitive-Behavioral Therapy (CBT) approach. CBT for treatment of drug abuse is an approach emphasized since mid-1980s seriously [20-23]. From this perspective, drug abusers under impact of conditional and classic learning processes and poor coping skills can make individuals vulnerable to addiction. CBT, similar to other methods, should be performed in a warm texture and based on a treatment relationship, along with collaboration [24].

In studies on effectiveness of CBT in treatment of people with addiction, various variables are studied. For example, Ahmadkhaniha et al [25] has studied effectiveness of CBT, dependence management and Naltrexone treatment in a group of patients with addiction and has confirmed preference of CBT to dependence management and Naltrexone treatment by itself. Pan et al [26] has also found that CBT can affect reduction of drug abuse, improvement of performance and reduction of stress in addicted people under Methadone maintenance treatment. Also, a meta-analysis demonstrated that CBT can significantly affect leaving and preventing relapse of drug abuse and mental symptoms such as anxiety and depression and promotion

Table 2: Results of repeated measures ANOVA in components of EQ in experimental group.

Components of emotional intelligence	Source of variances	Sum of squares	df	Mean squares	F	Sig
Intrapersonal scale	Inter-participant	1453.68	17	58.51	125.86	0.001
	Intra-participant	2376.8	54	44.16		
	Effect of treatment	2095.7	3	698.56		
	Residual or error	281.11	51	5.55		
	Total	6207.29				
Interpersonal scale	Inter-participant	7078.68	17	416.39	35.9	0.001
	Intra-participant	1573.36	54	29.13		
	Effect of treatment	1067.59	3	355.86		
	Residual or error	505.77	51	9.91		
	Total	10225.4				
Coping	Inter-participant	9849.13	17	579.36	17.66	0.001
	Intra-participant	5183.68	54	95.99		
	Effect of treatment	4860.48	3	1620.16		
	Residual or error	323.28	51	91.7		
	Total	20216.49				
General mood	Inter-participant	4796.1	17	282.12	43.34	0.001
	Intra-participant	6724.5	54	124.52		
	Effect of treatment	4832.72	3	1610.9		
	Residual or error	1891.78	51	37.09		
	Total	1025.6				
Stress tolerance	Inter-participant	3426.01	17	201.53	77.98	0.001
	Intra-participant	5405.62	54	100.1		
	Effect of treatment	4438.02	3	1479.34		
	Residual or error	967.4	51	18.97		
	Total	14237.24				

Table 3: Post-hoc t-test to determine mean differences of experimental group in components of emotional intelligence in 4 measurements.

Components		Mean	SD	t	df	Sig
Intrapersonal scale	Mean baseline with session 6	-19	5.61	-14.35	17	0.001
	Mean baseline with session 12	-35.05	9.99	-14.88	17	0.001
	Mean baseline with follow up session	-47.66	8	-25.27	17	0.001
	Mean value of sessions 6 and 12	-16.05	9.81	-6.94	17	0.001
	Mean value of follow up session and session 6	-28.66	6.73	-18.04	17	0.001
	Mean value of follow up session and session 12	-12.61	10.05	-5.32	17	0.001
Interpersonal scale	Mean baseline with session 6	-9.11	7.85	-4.91	17	0.002
	Mean baseline with session 12	-19.16	22.65	-3.58	17	0.001
	Mean baseline with follow up session	-32.77	6.69	-20.78	17	0.001
	Mean baseline of follow up session and session 12	-10.05	24.06	-1.77	17	0.001
	Mean baseline of follow up session and session 6	-23.66	11.58	-8.66	17	0.001
	Mean baseline of follow up session and session 12	-13.61	22.86	-2.52	17	0.001
Coping	Mean baseline with session 6	-9.11	7.85	-4.91	17	0.001
	Mean baseline with session 12	-19.16	22.65	-3.58	17	0.002
	Mena baseline with follow up session	-32.77	6.69	-20.78	17	0.001
	Mean baseline of session 6 and 12	-10.05	24.06	-1.77	17	0.004
	Mean baseline of follow up and session 6	-23.66	11.58	-8.66	17	0.001
	Mena baseline of follow up and session 12	-13.61	22.86	-2.52	17	0.002
General mood	Mean baseline with session 6	-7.61	1.71	-18.77	17	0.05
	Mean baseline with session 12	-16.11	4.49	-15.2	17	0.04
	Mean baseline with follow up session	-21.5	7.51	-12.13	17	0.04
	Mean baseline of session 6 and 12	-8.5	3.72	-9.66	17	0.04
	Mean baseline of follow up and session 6	-13.88	6.9	-8.53	17	0.03
	Mean baseline of follow up and session 12	-5.38	5.06	-4.51	17	0.02
Stress tolerance	Mean baseline with session 6	-8.77	2.73	-13.61	17	0.002
	Mean baseline with session 12	-16.94	9.25	-7.76	17	0.001
	Mean baseline with follow up session	-23.11	9.88	-9.92	17	0.001
	Mean baseline of session 6 and 12	-8.16	10.06	-3.44	17	0.001
	Mean baseline of follow up and session 6	-14.33	8.72	-6.97	17	0.001
	Mean baseline of follow up and session 12	-6.16	13.17	-1.98	17	0.001

quality of life in addicted people to glass [27,28]. Along with these studies, Waldron & Kaminer have also shown that CBT, whether in group or individually, is correlated to significant reduction of drug abuse in adolescence [29]. In regarding of these results, the current study is aimed of investigating effectiveness of cognitive-behavioral therapy on emotional intelligence in Cannabis users.

Method

This current study is experimental study with control group. Population Were who referred to Drug Addiction Centers of Tehran and qualified to enter the study entered the research: inclusion criteria have been Lack of psychotic disorders, delusional disorder, bipolar disorder, impulse control disorder, lack of concomitant use of antipsychotic drugs or drugs which reduce withdrawal symptoms of substance other than hashish, continuous use of hashish during the last three months, at least eight grade education. These individuals fulfilled emotional intelligence questionnaire in the next step and those with low score of emotional intelligence were selected as sample. Next, through fulfilling The Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) in terms of personality disorders the individuals were screened in terms of personality disorders. Hence, 74 people without personality disorders were selected as samples. Out of the individuals, 36 people were selected randomly and were placed in 2 groups with 18 members in each group.

Experimental group was under cognitive-behavioral techniques for 12 sessions and control group was in waiting list. Both groups were evaluated in basic step, session 6, end of treatment and 3 months later in terms of the two mentioned variables. Obtained data were analyzed using repeated measures ANOVA, two-factor ANOVA and PAIRED t-test in SPSS-20.

Instruments

Demographic information questionnaire: the questionnaire has been prepared to determine demographic information of individuals and gaining information about their backgrounds. The participants were asked to insert their personal information such as age, education, job, marital status and number of leaving times in the questionnaire.

Table 4: Two-factor ANOVA of components of EQ.

Components	Source of variances	Sum of squares	df	Mean squares	F	p-value
Intrapersonal scale	Intragroup	9940.5	1 and 34	9940.5	284.97	0.001
	Intergroup	8253.55	1 and 34	8253.55	81.42	0.001
	Intragroup-intergroup interaction	9940.5	1 and 34	9960.5	301.37	0.001
	Error	848.77	34	24.96		
Interpersonal scale	Intragroup	4110.22	1 and 34	4110.22	64.64	0.001
	Intergroup	1160.72	1 and 34	1160.72	37.87	0.001
	Intergroup-intragroup interaction	5818	1 and 34	5818	225.04	0.001
	Error	785.13	34	23.09		
Coping	Intragroup	3945.68	1 and 34	3945.68	17.86	0.001
	Intergroup	4394.12	1 and 34	4394.12	52.72	0.001
	Intergroup-intragroup interaction	5016.68	1 and 34	5016.68	217.24	0.001
	Error	755.27	34	22.21		
General mood	Intragroup	2278.12	1 and 34	2278.12	26.12	0.001
	Intergroup	666.12	1 and 34	666.12	18.17	0.001
	Intergroup-intragroup interaction	1891.12	1 and 34	1891.12	104.84	0.001
	Error	150.5	34	4.42		
Stress tolerance	Intragroup	1942.72	1 and 34	1942.72	87.45	0.001
	Intergroup	2380.1	1 and 34	2380.1	37.97	0.001
	Intergroup-intragroup interaction	2251.12	1 and 34	2251.12	110.29	0.001
	Error	613.25	34	18.03		

Structured clinical interview for DSMIV axis II disorders SCID-ii

SCID-II like SCID-I is a structured diagnostic interview for personality disorder to assess ten personality disorders at the DSMIV Axis II as well as NOS (not otherwise specified) depressive and aggressive disorders. This questionnaire has 119 questions and its completion takes less than 20 minutes and the responder needs certificate of at least eight grades of school [30]. The content validity of Persian version has been confirmed by some psychological professors and its reliability through test-retest with a one week interval was 0.87 [31]. Validity and reliability of the checklist has been confirmed in Iran too [32].

Emotional quotient inventory (EQ- i)

The inventory as the first instrument to test emotional intelligence has been developed by Bar-On in 1997. EQ-i includes a total score (total EQ), Five combined factors, fifteen subscales, a scale of positive thinking and negative thinking and a dissonance index. In this 133-item inventory, scores of the participants are in form of Likert scale from 1 to 5 (never, rarely, sometimes, usually and always) and some items are scored positively and some others are scored negatively. Question number 133 to measure honesty of the trial is not considered in process of scoring and the answers "rarely" and "never" to it can refer to lack of total validity of the test. Using the inventory is allowed for people over 16 years old with at least 6 grades education [31,33]. Investigations in field of test validity have also reported high validity; for example, Shoja Heydari et al have confirmed reliability of the inventory in students.

Interventional package

The training package is derived from Cognitive-Behavioral Therapy Book and Behavior Therapy Book [22,34].

Session 1: introducing members to each other and introducing cognitive-behavioral model and definition of emotional intelligence and its components. Session 2: coping with Internal and external triggers. Session 3: Coping with craving, Session 4: activity program and activity pleasure, Session 5: Anger management, express of negative emotion and relaxation. Session 6: problem solving and conflict resolution. Session 7: assertive skills training and express of emotion strategies. Session 8: distraction techniques, positive self-talking and identifying negative thought. Session 9: Changing of negative thoughts. Session10: Identifying and correcting of negative assumption and rules and dysfunctional belief. Session 11: Identifying and correcting of negative assumption and rules and dysfunctional belief. Session 12: Review session's summary.

For purpose of data analysis, descriptive statistics (mean value, standard deviation and percent) and inferential statistics (repeating measures ANOVA, two-factor ANOVA, paired t-test and Bonferroni correction and chi-square test) have been applied. It should be mentioned that statistical analysis was done in SPSS-20.

Results

Firstly, demographic information of participants in experimental and control groups are compared with each other. The result of age comparison between two groups showed that there is no significant difference between experimental and control groups in terms of mean age range of experimental group (24.67 ± 6) and control group (24.23 ± 5) based on t-test. 33.34% of experimental group and 44.45% of control group were married and 66.66% of experimental group and 55.54% of control group were single. 66.66% of experimental group were in BA and higher education levels, 27.77% diploma and others were below diploma. In control group, 61.11% were BA and higher education levels, 27.77% were diploma and other was below diploma. 66.69% of experimental group was employed and 55.58%

of control group was employed and other remained individuals were unemployed.

After demographic information, scores of participants in both groups in terms of components of emotional intelligence were compared in baseline stage. According to Table 1, according to t-test in this stage, no significant difference is observed between mean values of individuals in experimental and control groups in terms of components of emotional intelligence including intrapersonal, interpersonal, general mood, coping and stress tolerance components.

In the next step, the mean differences have been compared in 4 measurements. For this purpose, repeated measures ANOVA is used and results have been presented in Table 2. According to findings of this table, F-value, df and sig level for each component of emotional intelligence are obtained as follows: intrapersonal scale: F (125.86), df (3 and 51), p <0.001; interpersonal scale: F (35.90), df (3 and 51) and p <0.001; coping: F (17.66), df (3 and 51) and p <0.001; general mood: F (43.34), df (3 and 51) and p <0.001 and stress tolerance: F (77.98), df (3 and 51) and p <0.001. According to these results, it could be found that there is significant difference between compared mean values and at least, one pair of mean values are significantly different from each other (Table 2).

To determine the difference between mean values of experimental group in 4 measurements, post-hoc paired t-test is used (Table 3).

According to Table 3, in all components of emotional intelligence, significant difference is observed between pair mean values of experimental group in 4 measurements. Significance level of the differences for each component is as follows: intrapersonal scale in 0.001 level; interpersonal scale in 0.002 level; coping scale in 0.005 level; general mood in 0.05 level and stress tolerance is significant in 0.005 level. Bonferroni correction for paired t obtained from dividing sig level to number of comparisons (6) is also applied and obtained to 0.008. As the t-value is below 0.008 in these results, it has been found that the difference between mean values is significant in all components of emotional intelligence.

In order to analyze difference of two experimental and control groups in terms of each component of emotional intelligence, two-factor ANOVA are used (Table 4). According to the table, there is significant difference between mean values of experimental and control groups in terms of 5 components of emotional intelligence. In other words, intrapersonal scale, interpersonal scale, coping, general mood and stress tolerance in experimental group has been increased after participating in cognitive-behavioral therapy sessions and the difference has been significant statistically.

Discussion and Conclusion

Increase in demand for treatment of Cannabis use has led to investigation of different treatment approaches for this problem. One of the most effective methods emphasized for treatment of drug abuse in group, individually or in combined with Pharmacological treatment or along with family therapy and other psychiatric treatments and its efficiency has been confirmed is cognitive-behavioral treatment. In consistence with these studies, this study has confirmed effectiveness of cognitive-behavioral therapy in promotion of components of emotional intelligence Cannabis users [35-39].

It seems that CBT can help promotion of EQ through improving coping skills [40]. Hence, addicted person would be empowered and can manage their emotions and cope with problems of life without dependence on drugs. In this study, through using CBT, some coping skills such as problem solving skill, anger control, effective relationships, certainty and cope with temptation and negative emotion regulation were trained to people in experimental group. In consistence with findings of this study, relevant studies have demonstrated that training skills can help improvement of intrapersonal abilities of drug users as one component of EQ. This issue can typically lead to increase in self-esteem, reduction of relapse, increase in mood and increase in tolerance of individuals against stress and increase in their general adaptability [41,42]. Moreover, other scholars have demonstrated that CBT can affect improvement of interpersonal capabilities, coping and reduction of interpersonal stress of drug users. Such effect can enable people to cope with risky conditions, refuse to accept hashish and say "No" to external pressures to use drugs [21]. In this regard, Zollinger et al [43] has also investigated effect of training coping strategies on preventing tobacco abuse in a field study on 1598 American adolescents of grades 6-9. The study showed that learning coping skills can not only decrease use of tobacco, but also it can lead to improvement of interpersonal skills as one component of EQ and this can result in empowerment of individuals in field of coping with high risk situation and refusing of drugs.

Also, addicted people receiving CBT can regulate their emotions properly in high risk situations through familiar with coping skills [24,44].

According to several results, it seems that CBT can affect components of emotional intelligence and can result in flexibility, identification of emotions and modulate of them and problem focused orientation to challenging events in life and this result has been in consistence with findings of Tajeri and Gudarzi on investigation of effect of CBT on components of EQ in addicted people to glass [45]. The results of this study showed that training cognitive-behavioral skills can affect improvement of components of emotional intelligence and enhancement of coping ability, general mood, intrapersonal and interpersonal scales and stress tolerance.

Limitation

The present study has faced several limitations: firstly, sample size was small. Secondly, it was on addicted men only thirdly, because of time limitation, long-term follow-up of 6 months, 12 months and 18 months suggested.

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