

## Research Paper

# Comparison of the Effectiveness of Music Therapy and Cognitive Behavioral Therapy on Quality of Life, Craving and Emotion Regulation in Patients Under Methadone Maintenance Therapy



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### Key words:

Music therapy, Cognitive behavioral therapy, Quality of Life (QoL), Emotion regulation, Craving

## ABSTRACT

**Objectives** The purpose of this study was to compare the effectiveness of Music Therapy and Cognitive Behavioral Therapy on Quality of Life (QoL), craving, and emotional regulation in patients under methadone maintenance therapy.

**Methods** The method of the study was quasi-experimental and multi-group pre-test and post-test design. The statistical population consisted of all clients treated with methadone maintenance therapy in addiction treatment clinics affiliated with Tehran Health Organization in 2018. Then 54 people of whom (18 in each group) were selected through purposeful sampling in two experimental groups (Music-Therapy and Cognitive Behavioral Therapy) and a control group was included. The data was collected using the Cognitive Emotion Regulation Questionnaire, the Quality of Life Questionnaire, and Craving Questionnaire. The ANCOVA was used for data analysis.

**Results** The results showed that both Music Therapy and Cognitive Behavioral Therapy Improved the QoL, emotion regulation in the experimental group compared to the control group and significantly reduced craving ( $P < 0.01$ ). The results of the follow-up test showed that the mean scores of the experimental groups in the study variables were significantly different from the control group.

**Conclusion** There was a significant difference between the treatment groups in terms of their effect on the QoL and negative cognitive emotion regulation so that Cognitive Behavioral Therapy was more effective in regulating negative emotions and enhancing the QoL but there was no significant difference in regulating for positive emotions and reducing craving. These results suggest that both treatments significantly increase the QoL, emotional regulation, and it reduces craving.

## Extended Abstract

### 1. Introduction

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ue to the widespread use of methadone maintenance therapy in Iran and a 48.2%

relapse rate in this treatment [31], as well as the poor treatment with no psychosocial interventions on treatment compliance, and among the high dropouts. The need to use other psychological therapies associated with this treatment, including standard Cognitive Behavioral Therapy to reduce craving [21], to increase QoL [29], and

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the Emotional Regulation of Ford, et al. [32] is felt over and over. On the other hand, while Cognitive Behavioral Therapy seeks to directly change the behavior of people with substance abuse, Music Therapy has positive effects on mood and by reducing their negative emotions. Numerous studies have also shown that Cognitive Behavioral Therapy has no advantage over other treatments that are not focused on coping skills [33]. Therefore, the question of the present study is whether Cognitive Behavioral Therapy as a standard treatment of Music Therapy as a creative and complementary treatment of addiction is different in QoL, craving, and emotional regulation of methadone maintenance patients or not.

## 2. Methods

The method of this study was semi-experimental with pre-test and post-test. The statistical population of this study consisted of all clients undergoing methadone maintenance therapy in addiction treatment clinics affiliated to Tehran Health Organization in 2019. In this study, first, in coordination with the Health Care System of Tehran, referring to addiction clinics, they were asked to refer to methadone maintenance practitioners who have at least one year of treatment experience.

The inclusion criteria for this study were as follows: addicts on methadone maintenance treatment, male gender, no physical problems, no history of exposure to psychological training, age 18-40 years, no history of drug use.

The exclusion criteria were as follows: failure of the sample group or family to participate in each phase of the

study, having physical and mental problems, history of psychiatric problems, professional athletes, over 40 years of age, and drug use.

The researcher interviewed and surveyed the inclusion and exclusion criteria and 60 persons were selected by purposive sampling; then, randomly divided into three groups. The researcher then randomly selected into two groups as the experimental group and control group. Then one of the experimental groups was randomly assigned to 8 sessions of Music Therapy group and the other group 8 sessions of Cognitive Behavioral Therapy by the researcher. The control group received no training. Data were collected by using the Cognitive Emotion Regulation Questionnaire [34], QoL Questionnaire [36], and Craving Questionnaire [38]. The ANCOVA method was used for data analysis.

## 3. Results

The purpose of this study was to compare the efficacy of Music Therapy and cognitive behavioral therapy on QoL, craving, and emotional regulation in methadone maintenance patients. The findings showed that Music Therapy increased QoL, negative cognitive emotion and positive emotions and decreased craving. Also, findings showed that cognitive behavioral therapy increased QoL and regulated positive emotions and decreased craving. Negative emotions were regulated (Tables 1-5).

**Table 1.** Mean±SD of Variables in the experimental and control groups

Variables	Groups	Mean±SD	
		Pre-test	Post-test
Quality of Life	Cognitive Behavioral Therapy	104.27±8.89	124.50±6.87
	Music Therapy	103.83±15.22	112.05±13.26
	Control	108.05±7.24	109.22±7.71
Positive cognitive emotion regulation	Cognitive Behavioral Therapy	48±9.12	61.98±9.02
	Music Therapy	51.61±8.56	57.00±9.36
	Control	53.83±10.66	50.22±5.51
Negative cognitive emotion regulation	Cognitive Behavioral Therapy	58.38±12.30	47.83±7.88
	Music Therapy	59.72±9.89	50.27±6.28
	Control	55.84±8.04	56.88±4.94
Craving	Cognitive Behavioral Therapy	72.50±12.06	49.77±7.68
	Music Therapy	75.70±13.02	55.77±10.45
	Control	71.61±9.46	69.27±7.25

**Table 2.** Results of test of Levin's variance homogeneity and slope homogeneity in experimental and control group based on research variables

Variable	Levin's Variance Homogeneity		slope Homogeneity		Linearity		The Distribution of Data is Normal	
	F	P	F	P	F	P	K-S	P
Quality of Life	1.12	0.33	1.36	0.28	61.45	0.001	0.69	0.713
Positive cognitive emotion regulation	2.22	0.12	1.61	0.20	22.83	0.001	0.87	0.593
Negative cognitive emotion regulation	1.22	0.30	1.10	0.38	4.86	0.04	0.16	1.120
Craving	1.25	0.29	21.07	0.001	91.67	0.001	0.63	0.748

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**Table 3.** One-way analysis of covariance of Quality of Life in two experimental and one control group

The Dependent Variable	The Sum of the Squares	df	Mean Squares	F	Sig.	Eta Squared
Quality of Life	46.2441	2	1220.73	45.37	≤0.001	0.67
Positive cognitive emotion regulation	1787.62	2	893.81	30.61	≤0.001	0.59
Negative cognitive emotion regulation	1169.42	2	584.71	22.73	≤0.001	0.52
Craving (Post-test difference pre-test)	7697.65	2	3848.82	74.49	≤0.001	0.74

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**Table 4.** Follow-up test results to compare groups' means of Quality of Life in the post-test phase

Scale	Comparison	Average Difference	The Standard Error	Sig.	Eta Squared
Quality of Life	Group 1 & 2	11.57	1.85	≤ 0.001	
	Group 1 & 3	17.67	1.87	≤ 0.001	0.67
	Group 2 & 3	6.10	1.80	= 0.005	
Positive cognitive emotion regulation	Group 1&2	8.64	3.80	= 0.08	
	Group 1&3	16.47	2.43	≤ 0.001	0.59
	Group 2&3	7.82	2.61	= 0.01	
Negative cognitive emotion regulation	Group 1&2	-11.65	3.59	= 0.007	
	Group 1&3	-14.64	2.28	≤ 0.001	0.52
	Group 2&3	-2.98	2.45	= 0.69	
Craving (Post-test difference pre-test)	Group 1&2	-2.02	2.39	= 0.99	
	Group 1&3	-26.27	2.39	≤ 0.001	0.74
	Group 2&3	-24.25	2.39	≤ 0.001	

Explanation: 1 = Cognitive Behavioral Therapy Group 2 = Music Therapy Group 3 = Control Group

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**Table 5.** Follow-up test results to compare groups' means of Quality of Life in the post-test phase

Scale	Comparison of Groups	Average Difference	Standard Error	Sig.	Eta squared
Quality of Life	1 & 2	11.57	1.85	P≤0.001	0.67
	1 & 3	17.57	1.87	P≤0.001	
	2 & 3	6.10	1.80	P=0.005	
Positive cognitive emotion regulation	1 & 2	8.64	3.80	-	0.59
	1 & 3	16.47	2.43	-	
	2 & 3	7.82	2.61	-	
Negative cognitive emotion regulation	1 & 2	-11.65	3.59	-	0.52
	1 & 3	-14.64	2.28	-	
	2 & 3	-2.98	2.45	-	
Craving (Post-test difference pre-test)	1 & 2	-2.02	2.39	-	0.74
	1 & 3	-26.27	2.39	-	
	2 & 3	-24.25	2.39	-	

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#### 4. Discussion

Comparison of Music Therapy and cognitive behavioral therapy compared with cognitive behavioral therapy showed that Cognitive Behavioral Therapy had an effective role in enhancing QoL and reducing negative emotions than Music Therapy. Mental Analysis Irvine et al.; Carroll et al.; Kaden; Silva and Serra showed that cognitive-behavioral interventions have a significant role in reducing the use and experience of the patient's experience and play a major role in improving psychological symptoms and reducing the rate of relapse and return to substance use [51]. Also, the results are consistent with the findings of McGaugh, Heron, and Otto [52]; Ocilla, Hepner, Manoz & Watkins [55], and Driessen & Hollon [55] who showed that a Cognitive Behavioral Therapy of addiction improves mood and tolerance, communication with others, and QoL. But there was no significant difference concerning Craving and positive cognitive emotion regulation.

As the results also point out, Music Therapy is a complementary therapy and can play an important role along with other therapies such as drug therapy, and it has a stronger role in enhancing positive emotions than negative emotions.

One of the important limitations of this study was the difficulty in satisfying the sample group for cooperation. Also Controlling for other disturbing variables (use of other medications, income, social support) decreased the subjects' ability to control these variables. Caution should be exercised when generalizing the results to the female gender because of the use of the male gender. Finally, it is recommended to use Music Therapy as a complementary therapy.

#### Ethical Considerations

##### Compliance with ethical guidelines

This study has been registered by the Iranian Registry of Clinical Trials (Code: IRCT20191030045280N1). All ethical principles were observed in this study. Participants were free to leave the study at any time and were assured of the confidentiality of their information

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### **Authors contributions**

All authors were equally contributed in preparing this article.

### **Conflicts of interest**

The authors declared no conflict of interest.