Chronic Diseases Journal

DOI: 10.22122/cdj.v8i1.499 Published by Vesnu Publications

The effectiveness of cognitive behavioral therapy on treatment-resistant depression

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Original Article

Abstract

BACKGROUND: Treatment-resistant depression (TRD) is a severe and chronic form of major depression. It poses significant clinical, personal, and economic burden and does not respond to antidepressants. Psychotherapy can be a suggested option. The aim of this study was to survey the effectiveness of cognitive behavioral therapy (CBT) on patients with TRD.

METHODS: The present study was a quasi-experimental study with pretest, posttest, and follow-up. The statistical population included patients with TRD in Rafsanjan City, Iran, in 2018. 30 subjects were randomly selected and placed into experimental and control groups. Data were collected by Beck Depression Inventory (BDI), Rumination Questionnaire, and Brunel Mood Scale (BRUMS). To analyze data, multivariate analysis of covariance (MANCOVA) was used with SPSS software.

RESULTS: CBT led to reducing depression and rumination and improving mood and this outcome was better than control group ($P < 0.05$).

CONCLUSION: TRD is a chronic and disabling disorder that little research has been done about its treatment. CBT can be a good treatment offer for TRD.

KEYWORDS: Depressive Disorder; Treatment-Resistant; Cognitive Behavioral Therapy

Date of submission: 12 Mar. 2019, *Date of acceptance:* 11 Sep. 2019

Citation: Sadrmohammadi R, Gholamrezaei S, Ghadampour E. **The effectiveness of cognitive behavioral therapy on treatment-resistant depression.** Chron Dis J 2020; 8(1): 35-40.

Introduction

Major depressive disorder (MDD) is a common mental disorder, affecting over 300 million people worldwide.[1] It has a great impact on the quality of life and patient functioning, and is regarded as an essential factor leading to disability worldwide. If left untreated, it can lead to serious consequences, with a lifetime suicide risk of 2.2%-15.0%.[2] In 2015, depressive disorders were the greatest contributor to non-fatal health loss.[3]

Depression is a complex disorder with multiple symptomatological clusters, including emotional, cognitive, and physical symptoms. Contemporary treatment goals are to control symptoms, achieve remission, and restore patients' functioning level to baseline.[3]

Increasing clinical evidence supports that approximately two thirds of patients with MDD fail to receive full remission, even after completing an adequate trial of antidepressant therapy.[4] 30%-50% of patients with MDD do not respond to antidepressant medications but can respond to psychological therapy.[5]

Those who have failed to have an adequate response to the routine antidepressant therapy are usually considered as patients with treatment-resistant depression (TRD),[6] which may result in psychophysiological compromise.[5]

TRD is a form of severe depression,[7] which does not provide a uniform and comprehensive

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definition of it. Most definitions of failure in drug therapy refer to psychotherapy and other interventions.[6] Patients with TRD often fail in several treatments with antidepressant standards and have an undesirable long-term prognosis, and it is estimated that there may be at least 10 million patients with TRD in United States of America (USA).[8]

Aim of the treatment is fully functional recovery, which is defined as a state in which patients are again able to enjoy their usual activities, return to work, and take care of themselves, and it should represent the end goal of treatment in patients with MDD. Patients with depression report many unmet needs including residual cognitive symptoms and lack of improvement in psychosocial functioning and life satisfaction, even during mood symptom remission. A good antidepressant therapy is expected to improve affective symptoms, cognitive symptoms, psychosocial functioning, work functioning, and quality of life.[9]

Moreover, the limitation of clinical therapies in United Kingdom (UK) and USA has led to the use of cognitive behavioral therapy (CBT) in the treatment of people who did not respond to drug treatments. In CBT for patients with depression, the techniques are aimed to correct their wrong belief that their lives are filled with failure, hopelessness, and uselessness.[5]

CBT is based on the interrelationship of thoughts, actions, and feelings. In order to work with feelings of depression, this model establishes the importance of identifying the thoughts and actions that influence mood. In this manner, the adolescent learns to gain control of his/her feelings.[10]

There is good widespread evidence of the effectiveness of CBT on depression, especially for previously-untreated periods of depression.

The cognitive processes in this structure refer to the principles used in the processing of information in triggering confrontation.[8] It can be said that perception, thoughts, mental imagery, and associated memories are cognitive consequences that result from the transformation of stimuli through cognitive processes. According to the cognitive approach, in the case of depression, negative schema has a major role in the incidence of depression and based on this approach, a set of negative schemas in a person causes an attitude of action failure and this deficiency causes or provokes resistance of person to depression. Based on these ideas, CBT emerged few decades ago, and was updated daily. Evidence suggests that defective cognitive processes are depressive factors and increase the vulnerability to the return of subsequent periods. One of these processes, mental ruminations, cause depression.[11]

Ruminations are defined as resistant and recurring thoughts that circle around a common thread. These non-voluntary thoughts go into consciousness and divert attention from the issues and current goals.[12] Many studies show the relationship between rumination and various types of emotional disorders. Mental rumination is a constant and species traits phenomena and it is a type of response that causes one's attention to be focused on causes, effects, and symptoms of depression. Usually, rumination induces mechanisms that turn into different risk factors for depression, and in fact, the pressure increases and social support, optimism, and neuroticism decrease.[13]

Regarding the high prevalence of TRD, severity and chronicity of this disorder, and high costs and also considering personal, economic, and social aspects and lack of applied therapeutic methods for TRD in Iran, the purpose of this study was to survey the effectiveness of CBT on treatment of patient with TRD.

Materials and Methods

This study was a quasi-experimental research project with pre-test, post-test, and follow-up with experimental and control groups (Figure 1).

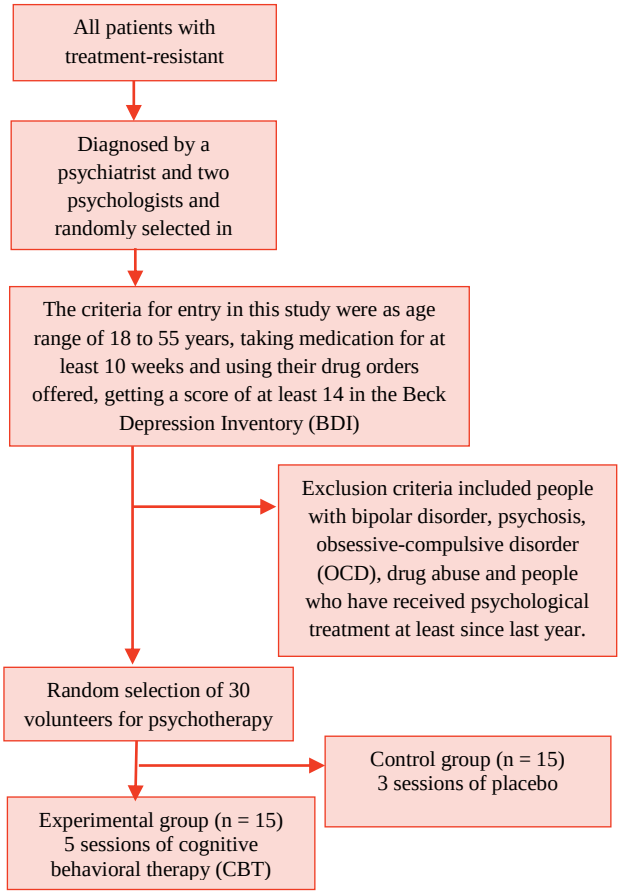

Figure 1. Process of implementation of research project

The research community included all the patients with TRD in Rafsanjan City, Iran, in 2018. Among people that referred to psychiatrist or psychologist and were diagnosed with TRD, 30 persons were randomly selected among the volunteers for psychotherapy, and randomly assigned to 2 groups (experimental and control). The experimental group participated in 5 sessions of CBT and the control group received 3 sessions of placebo.

In this research, 3 questionnaires were used:

Rumination Scale: Nolen-Hoeksema in 1991 developed a self-study questionnaire that evaluated four different types of responses to negative mood. Based on empirical evidence, this scale has a high internal stability. Cronbach's alpha coefficient ranges from 0.88 to 0.92.[13]

Beck Depression Inventory-II (BDI-II): This scale is an overviewed form of the BDI designed to measure the severity of depression. The questionnaire consists of 21 items, which ask respondents to rank the severity of the symptoms on a scale from zero to three. The studies on validity, reliability, and construct validity of BDI-II have yielded a desirable factor for this questionnaire.[14]

Brunel Mood Scale (BRUMS): This scale has 32 questions that measure eight subscales in the Likert scale of 5 options. Its subscales are vitality, calmness, happiness, tension, depression, anger, fatigue, and confusion. Validity of this scale in Iran was reported for whole questionnaire to be 0.78 to 0.88.[15]

For analysis of data, descriptive statistics such as frequency, percentage, mean, and standard deviation (SD) and inferential statistics including multivariate analysis of covariance (MANCOVA), single-variable analysis of covariance (ANCOVA), and post-test were used. Data were analyzed by SPSS software (version 22, IBM Corporation, Armonk, NY, USA).

Results

Table 1 shows the demographic characteristics of the research sample.

Table 1. Demographic parameters

Group	Academic state			Economic state				Gender		Marital state		
	Less than diploma	Diploma	More than diploma	Perfect	Good	Moderate	Weak	Man	Woman	Widow	Married	Single
CBT	1	5	9	1	4	10	0	4	11	0	13	2
Control	2	4	9	0	4	9	2	3	12	1	12	2

CBT: Cognitive behavioral therapy

Table 2. Mean and standard deviation (SD) of groups in the variables

Group		Mood	Rumination	Depression
CBT	Pre-test	59.00 ± 7.60	46.00 ± 8.45	47.26 ± 2.18
	Post-test	31.28 ± 21.41	23.80 ± 6.13	20.00 ± 6.41
	Follow-up	21.06 ± 5.53	22.86 ± 5.99	17.80 ± 6.27
Control	Pre-test	75.00 ± 31.45	50.40 ± 9.05	54.93 ± 4.97
	Post-test	52.93 ± 5.50	48.60 ± 4.27	37.93 ± 13.56
	Follow-up	44.46 ± 4.62	51.60 ± 6.78	36.80 ± 11.02

The values are presented as mean ± standard deviation (SD).
CBT: Cognitive behavioral therapy

Table 2 shows the mean and SD of the variables studied (mood, rumination, depression) in three stages (pre-test, post-test, and follow-up).

The results of table 3 indicated that there was a significant difference between the experimental group and the control group in the three variables of depression, rumination, and mood in post-test level ($P < 0.05$).

The results of table 4 indicated that there was a significant difference between the experimental group and the control group in the three variables of depression, rumination, and mood in follow-up level ($P < 0.05$).

Discussion

The average lifetime prevalence of MDD is estimated at 14.6% in high-income countries. It represents the leading cause of disability burden worldwide, accounting for 2.5% of global disability-adjusted life years (DALYs) lost.[16]

30%-50% of patients with MDD do not respond to antidepressant medications and the diagnosis is TRD.[8]

To concern the high prevalence of depression disorder in the general population and damage caused by TRD in a variety of economic, social, and health areas, a study on effective treatments is necessary.

The aim of this study was to survey the effectiveness of CBT on TRD and aspects of depression especially rumination and mood. The findings show that CBT has a significant effect on depression, rumination, and mood compared to the control group. These results are consistent with the findings of Li et al.,[17] Franklin et al.,[11] Proudfoot et al.,[18] and Lopez and Basco.[19]

Concerning the effectiveness of CBT, it can be explained that CBT, at first for changing the behavioral patterns of patients and increasing the positive reinforcement, leads to the lack of attention to some negative thoughts and prevents the deterioration of the mood, leading to an increase in targeted behavior and the ability to solve the problem.

In particular, cognitive dysfunctions represent a key determinant of functional disability in patients with depression, which can persist beyond clinical symptom emission, limiting work functioning and contributing to the overall disability associated with MDD.[20]

Table 3. Moderate mean and analysis of covariance (ANCOVA) in variables in the post-test

Variable	Group	Moderate mean	P	F	ETA coefficient
Depression	CBT	10.43	< 0.01	24.39	0.83
	Control	43.80			
Rumination	CBT	10.34	< 0.01	17.82	0.67
	Control	41.46			
Mood	CBT	37.30	< 0.01	58.80	0.88
	Control	17.40			

CBT: Cognitive behavioral therapy

Table 4. Moderate mean and analysis of covariance (ANCOVA) in variables in the follow-up

Variable	Group	Moderate mean	P	F	ETA coefficient
Depression	CBT	9.13	< 0.01	24.39	0.97
	Control	48.51			
Rumination	CBT	15.44	< 0.01	17.82	0.64
	Control	36.62			
Mood	CBT	43.30	< 0.01	58.80	0.79
	Control	19.10			

CBT: Cognitive behavioral therapy

It has been extensively reported that not paying attention to the cognitive dimension in patients with depression may impair the achievement of full recovery. Cognitive-behavioral approach is one of the methods that, having such training as assertiveness skills, leads to satisfaction of one's characteristics and abilities. Learning to do muscular relaxation and mental imagery also reduces the tension and pressure on external situations.[5]

The individual, by learning the decision-making and problem-solving skills, is able to influence and control the environment in a better and more positive way and increase individual adaptability. These skills also indirectly lead to enhanced self-esteem and self-satisfaction, improves the mood, and decreases rumination.[20]

Considering the fact that this study was conducted only among patients with TRD in Rafsanjan, the results cannot be generalized to other patients with TRD in other parts of the country. Therefore, it is recommended to replicate this study in different populations throughout the country. It is also suggested to compare between CBT and other therapies to evaluate the effectiveness in TRD. Moreover, the gathered data were self-report and this was one of the limitations of the present study.

Conclusion

According to the results, it seems that CBT is the effective treatment for TRD, which decreases sings such as ruminations and improves the mood. It is expected that the findings of this study can be a useful step in the psychological treatment of patients with depression who are resistant to treatment and it is hoped that with psychological interventions, the rate of recovery of patients with depression will improve and the psychological and financial costs of the disease will decrease.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

We would like to thank those who helped us with this project and also thank Lorestan University for cooperation in approving and financing this project in the form of a PhD Thesis (No. 97/02) by Lorestan University, Khorramabad, Iran.

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