

Effectiveness of Integration of Mindfulness –Based Cognitive Therapy and Recovery Cognitive Behavioral Therapy on Adolescents with Spectrum Bipolar Disorder

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Abstract

Objective: The aim of this study was Effectiveness of Integration of Mindfulness –based cognitive therapy (MBCT) and recovery cognitive behavioral therapy (RCBT) on adolescents with spectrum bipolar disorder (BD).

Method: BD diagnosis in 80 adolescents was based on DSM-IV TR that patients were randomly assigned to one of the following: Experimental group under combined treatment MBCT & RFCBT, and groups MBCT, RFCBT and Control group (TAU) under pharmacological treatment. The questionnaires used in the research included: Manian Yang MYR questionnaire, K-SADS quality of life questionnaire, impulsivity questionnaire, bipolar depression questionnaire, Beck anxiety inventory, Coke drug abuse questionnaire. We used an analysis of variance (MANOVA), including one or two factors, with repeated measures at different evaluation times: baseline, post-treatment, 6-month follow-up.

Results: We found significant between-group differences at all evaluation times after the treatment. The experimental group showed that the effect of MBCT treatment on improving the psychiatric and psychological symptoms of individuals in three stages (pre-test, post-test and follow-up) (849 / 0) is significant. The effect of RFCBT treatment on improving the psychiatric and psychological symptoms of individuals in three stages (pre-test, post-test and follow-up) is somewhat significant and the effect of treatment (group membership) in the post-test and follow-up stage 0.27% and 0.31%, respectively, meaning that 0.27% of individual differences in the improvement of psychiatric and psychiatric symptoms (during the test) and 31/0 percent (follow-up) for differences in membership

group (treatment effect) and finally the integration of psychiatric and psychological MBCT and RFCBT improves the symptoms of spectrum bipolar disorders exist.

Conclusions: Our results suggest that a combined treatment is effective in patients with refractory bipolar disorder. Suggestions for future research are commented on.

Keywords: Mindfulness –based cognitive therapy; Recovery cognitive behavioral therapy; Bipolar disorder

1. Introduction

Bipolar disorder (BD) involving a condition of multiple aspects an individual's life. It is one of the most disabling illnesses globally, being the 18th leading reason of disability, generally because of its deleterious effects on social and health functioning compared with other mental disorder [1, 2]. There is much disagreement about where to draw the boundaries of the bipolar spectrum, but some investigators include subsyndromal manic episodes, manic or hypomanic episodes triggered by antidepressants, or agitated depression [3, 4]. In spite of an appropriate treatment with mood stabilizers, in addition to, even without presentation of rapid cycling, these patients may suffer frequent relapses and have severe difficulties in their social-occupational functioning. All this is connected with elevated healthcare costs [5]. In its various forms bipolar disorder affects approximately 5.7 million Americans [6]. Ninety-eight percent of individuals with bipolar disorder have another lifetime psychiatric disorder that warrants treatment [7]. Psychosocial treatment researchers felt that if they could work with people with bipolar disorder to learn more about their illness, monitor symptoms, help them to become more adherent, and adjust their behavior and their environment in ways that would minimize risk factors (irregular medication adherence, lack of sleep, alcohol and substance abuse, family criticism, stress) and maximize protective factors (regular schedules, etc.), that this would have beneficial effects on the course of the illness and ultimately improve people's quality of life [8]. Mindfulness-based cognitive therapy (MBCT) is a depressive relapse prevention program that combines aspects of cognitive therapy and training in mindfulness (meditation). Specifically developed to prevent unipolar depressive relapse [9] MBCT enables people to become more aware of their thoughts without judgment and to viewing them as passing mental events [10].

In individuals with three or more depressive episodes, MBCT allowed reducing the risk of relapse by half [11-13] and delayed the time to depressive relapse [13]. It was more effective than maintenance antidepressant treatment in reducing residual depressive symptoms and psychiatric comorbidity, and in improving quality of life among patients with recurrent depression, in full or partial remission at inclusion [14]. Preliminary results suggested that MBCT might be beneficial in patients with active symptoms of depression as well [15-17]. In most original MBCT trials, bipolar disorder was an exclusion criterion [11, 14]. Therefore, little is known about its efficacy in individuals with bipolar disorder. Recent studies [10, 18, 19] included some bipolar patients (type I and II) in samples of depressed unipolar individuals and concluded that MBCT allowed reducing depressive symptom severity. When focused on between-episode anxiety and depressive symptoms in unipolar and bipolar patients with suicidal ideation or behavior [10, 19]. Psychoeducational programs and cognitive-behavioral techniques (CBT) are, to date, the patient-focused approaches that have shown clear evidence of efficacy in randomized studies. It is also worthwhile to note

the strong evidence that exists in support of the use of family-focused approaches [20, 21] CBT may be efficacious for treating postmanic `downs` [22]. After a hypomanic or manic phase, the patient may appear hypoactive and abulic. In such cases, antidepressant treatment should probably be avoided because there may be a risk of inducing a switch into mania or rapid cycling [23]. Self-control techniques, stress management and inoculation, exposition and coping strategies might be useful in the treatment of specific problems caused by the illness.

Some open-series studies and case reports suggested that CBT may be useful as a coadjunctive treatment for rapid-cycling patients [24]. To date, psychological treatments have utilized an array of interventions. These include psychoeducation about bipolar disorder, mood monitoring and relapse prevention, communication and problem-solving training, cognitive restructuring (a technique to challenge maladaptive thoughts), activity scheduling, social rhythm adjustments, and interpersonal techniques. These have been combined in various forms in individual, group, or family treatments that were implemented at different stages of this illness (acutely ill, stable, etc.). Except Integration of Mindfulness –based cognitive therapy and recovery cognitive behavioral therapy Therefore, the purpose of this research but to date research in the field Effectiveness of Integration of Mindfulness –based cognitive therapy and recovery cognitive behavioral therapy on adolescents with spectrum bipolar disorder not accepted.

2. Methods

2.1 Subjects

The study was conducted in a Psychiatric Hospital Professor Mohariri Shiraz in the treatment of bipolar disorders, within the Department of Psychiatry of the Shiraz University Hospitals. The study protocol was approved by the Ethics Committee of the Department of Psychiatry and each subject gave written informed consent. Inclusion criteria were: age more than 18; no hospitalization for psychiatric conditions during the last 3 months; severity of hypomanic symptoms at inclusion less than 8 on the Young Mania Rating Scale (YMRS) [25, 26]. There was no cut-off score on the MADRS although patients with a score inferior or equal to 15 at time of inclusion were preferentially included [27]. Regular substances abuse was an exclusion criteria. In keeping with naturalistic clinical conditions, recruitment was not restricted to patients in full remission, nor to individuals without pharmacological treatment. Among 80 patients included in the study, one did not complete the initial assessment nor attend the first session and six dropped-out after attending less than four sessions, the minimal effective dose of MBCT in accordance with previous trials [11-13].

2.2 Procedure

This study is a randomized clinical trial design. Among the cases of bipolar patients referring to the psychiatric clinic professor Moharri Shiraz during the last year, there were 200 patients. 80 bipolar patients are selected as available. After obtaining informed consent, patients are randomly divided into 4 groups. The first group receives the combination of the two treatments (MBCT & RFCBT), the second group is under treatment (RFCB), the third group receives treatment (MBCT) and the other group is controlled (TAU). All groups use medication and then they are evaluated using the tools listed. In the TAU group, the treatment is not performed and after the other groups' treatment, the questionnaires are again answered by the patients in the control group. The questionnaires used in the

research included: Manian Yang MYR questionnaire, K-SADS quality of life questionnaire, impulsivity questionnaire, bipolar depression questionnaire, Beck anxiety inventory, Coke drug abuse questionnaire.

2.3 Intervention

Group 1: Combined Therapy (MBCT & RFCBT): Protocols based on the scheme, in which MBCT treatment is merged with classic CBT therapy and recovery therapy which includes 1.5-hour sessions, in which formulation and CBT therapy techniques plus meditation exercises focus on recovery.

Group 2: Cognitive behavioral therapy focused on the recovery of (RFCBT), the structure and formulation of treatment based on the treatment protocol (Basco Vraché, 2005) and (Jones, 2012).

Group 3: Cognitive-focused therapy focused on mind awareness (MBCT), the structure and formulation of treatment based on the treatment protocol (Decker, 2012).

Group 4: Typical Treatment (TAU), the Patients in this group continue their treatment without any intervention.

2.4 Data analysis

Analyses were conducted on the 80 participants who attended at least eight sessions, for all four treatment groups MBCT, Integration MBCT & RFCBT, RFCBT and TAU prevalent treatment, Frequency tables were used to describe perceived benefit from the program, perceived usefulness of the program ingredients. Preand post-MBCT, Integration MBCT & RFCBT, RFCBT and TAU prevalent treatment, assessments were described with median (range) and compared using MANOVA signed ranks tests. Associations were tested with Spearman rank-order correlation coefficients (rs). Statistical significance was set at 0.05 (two-tailed tests). Data analysis was performed using SPSS 16 (SPSS Inc., Chicago, IL).

3. Results

To evaluate the treatment of MBCT, improvement of psychiatric and psychological symptoms of bipolar disorder is used through repeated measures of variance analysis. In which the effect of MBCT treatment improves psychiatric and psychological symptoms in the first test group in three stages of pre-test, post-test and follow-up. The results are presented in the following tables 1 and 2.

Multivariate test	Value	F	DF	Sig.	Partial Eta Squared
Pillai's trace	0.849	36.509 ^a	13	0.001	0.849
Wilkes's lambda	0.151	36.509 ^a	13	0.001	0.849
Hotelling's trace	5.617	36.509 ^a	13	0.001	0.849
Roy's largest root	5.617	36.509 ^a	13	0.001	0.849

^a Modified for Multiple Comparison: Bonferroni.

Table 1: The results of repeated variance analysis of the MBCT treatment group for the variable of psychological and psychological symptoms improvement.

Levels		Difference of meanings	Standard error	P	Confidence interval	
					Min	Max
Pre	post	4.387*	0/909	0.001	1.917	6.856
	Follow up	4.433*	0/543	0.001	2.959	5.908
Post	pre	-4.387*	0/909	0.001	-6.856	-1.917
	Follow up	0.047	0/551	1	-1.451	1.545
Follow up	pre	-4.433*	0/543	0.001	-5.908	-2.959
	Post	0.047	0/551	1	1.451	-1.451

Table 2: Bonferron post hoc test results analysis of variance of repeated measures of MBCT treatment group for improvement of psychiatric and psychological symptoms.

The results of Table 1 show that all tests have meaningful significance less than 0.01. The Wilcoxon lambda test, which is more powerful than other tests, with a value of (0.151) and (36.509) F and 0.849, the separation of EAs is significant at a significant level of 0.01. The effect of treatment of 0.849 with a potency of 1 that indicates the adequacy of the sample size for the conclusion suggests that the effect of MBCT treatment on improving the psychiatric and psychological symptoms of individuals in three stages (pre-test, post-test and follow-up) (0.849) is significant. In other words, there is a significant difference between the mean improvement in psychiatric and psychological symptoms of this group in three stages. Consequently, the research hypothesis is not rejected. To evaluate the difference between the meanings, Bonferron's post hoc test was used. The results of Table 2 show that between the improvement of psychiatric and psychological symptoms in the post-test (92.22) and pre-test (96.71), pre Test (71.96) and follow-up (92.28) have a significant difference. However, there was no significant difference between the mean of improvement of psychiatric and psychological symptoms in follow up and post-test stages. To investigate the treatment of RFCBT, psychological and psychological symptoms of bipolar disorder have been utilized through repeated measures of variance analysis. In which the effect of the RFCBT treatment method is compared in three stages: pre-test, post-test and follow-up. The results are presented in the following tables.

Multivariate test	Value	F	DF	Sig.	Partial Eta Squared
Pillai's trace	0.494	6.355 ^a	13	0.012	0.494
Wilkes's lambda	0.506	6.355 ^a	13	0.012	0.494
Hotelling's trace	0.978	6.355 ^a	13	0.012	0.494
Roy's largest root	0.978	6.355 ^a	13	0.012	0.494

^aModified for Multiple Comparison: Bonferron.

Table 3: The results of repeated measures analysis of variance of the RFCBT treatment group for the variable of psychological and psychological symptoms improvement.

Levels		Difference of meanings	Standard error	P	Confidence interval	
					Min	Max
Pre	post	2.490*	0.677	0.007	0.649	4.331
	Follow up	4.357*	0.660	0.009	0.563	4.150
Post	pre	-2.490*	0.677	0.007	-4.331	0.649
	Follow up	-0.133	0.252	1	0.817	0.550
Follow up	pre	-2.357*	0.660	0.009	-4.150	0.563
	Post	0.133	0.252	1	0.550	0.817

Table 4: Bonferron post hoc test results Analysis of variance of repeated measures of RFCBT treatment group for improvement of psychiatric and psychological symptoms.

The findings of Table 3 indicate that all tests have meaningful significance less than 0.05. The Wilcoxon lambda test, which is more powerful than other tests, with a value of (0.506) and (6.355) F and 0/494, the separation of EAs is significant at a significant level of 0.05. The effect of treatment of 0.449 with a potential of 0.815 which indicates the adequacy of the sample size for the conclusion suggests that the treatment method did not have a significant effect. However, it can be said that the effect of RFCBT treatment on improving the psychiatric and psychological symptoms of individuals in three stages (pre-test, post-test and follow-up) is somewhat significant. In other words, there is a significant difference between the mean improvement in psychiatric and psychological symptoms of this group in three stages. Consequently, the research hypothesis is not rejected. To evaluate the difference in mean, Bonferron's post hoc test was used. The results of Table 4 show that between the improvement of psychiatric and psychological symptoms in the post-test (93.59%) and pre-test (96.83%), pre-test (93.96) and follow-up (93.72) there is a significant difference but there was no significant difference between the mean improvement of psychiatric and psychological symptoms in the follow up and post-test stages. As a result, the effect of therapeutic intervention is stable over time. Covariance analysis was used to investigate the integration of MBCT and RFCBT in improving psychiatric and psychological symptoms of bipolar disorder.

Source of change	Levels	Average squares	DF	F	Sig.	Partial Eta Squared
pre (C)	Post	594 .10013	1	824.126	0.001	0.969
	Follow up	418 .10328	1	628.21	0.001	0.981
Group	Post	900 .59	2	7.566	0.002	0.27
	Follow up	741 .46	2	9.497	0.001	0.317

Table 5: The results of covariance analysis of the effect of integration of MBCT and RFCBT improve psychiatric and psychological symptoms of bipolar spectrum disorder in two stages of post-test and follow-up with considering the pre-test phase as the quarantine variable.

The findings of Table 5 show that although the effect of quart variable (pre-test) in post-test with (644.824) F and follow-up with (F2898) is F and the level of significance is less than 0.001 is meaningful, in the source of change,

there is a significant difference between the means of improving the psychiatric and psychological symptoms in the target group in the post-test and follow up stages. The effect of treatment (group membership) in the post-test and follow-up stage was 0.27% and 0.31% respectively, meaning that 0.27% of the individual differences in the improvement of psychiatric and psychiatric symptoms (in the post-test) and 0.31% (follow-up) due to differences in group membership (treatment effect). The statistical power of 0.972 and 0.929 in the two groups indicates the adequacy of the sample size for the conclusion. Bonferron's post hoc test was used to examine the difference between the means. The results are presented in the following table.

Levels	Group (I)	Group (J)	Difference of meanings	standard error	Sig	Confidence interval	
						Min	Max
post	MBCT	RFCBT	-1.899	1.028	0.215	4.464	0.666
		MBCT, RFCBT	-4*	1.029	0.001	- 6.567	- 1.432
	RFCBT	MBCT	1.899	1.028	0.215	- 0.666	4.464
		MBCT, RFCBT	-2.101	1.03	0.143	- 4.567	0.469
	MBCT, RFCBT	MBCT	4*	1.029	0.001	1.432	4.567
		RFCBT	2.101	1.03	0.143	- 0.469	4.671
	TAU	MBCT	4*	1.029	0.001	1.432	4.567
		RFCBT	2/101	1.03	0.143	0.469-	4.671
Follow up	MBCT	RFCBT	-2.089*	0.81	0.041	- 4.111	- 0.067
		MBCT, RFCBT	3.513-	0.811	0.001	- 5.537	- 1.488
	RFCBT	MBCT	-2.089*	0.81	0.041	- 0.067	4.111
		MBCT, RFCBT	-1.424	0.812	0.261	- 3.45	0.603
	MBCT, RFCBT	MBCT	-3.513*	0.811	0.001	1.488	5.375
		RFCBT	1.424	0.812	0.261	- 0.603	3.45
	TAU	MBCT	4*	1.029	0.001	1.432	4.567
		RFCBT	2.101	1.03	0.143	- 0.469	4.671

Table 6: The results of Bonferron post hoc test for the effectiveness of MBCT and RFCBT integration on the improvement of psychiatric and psychological symptoms.

Regarding the results of Table 1, it can be said that in the post-test phase, only a significant difference was observed between the mean improvement of the psychiatric and psychological symptoms of the MBCT group and the integration of MBCT and RFCBT. Here, the mean and improvement of psychiatric and psychological symptoms of MBCT individuals is lower than that of the MBCT and RFCBT integration group. However, in the follow up phase, there is a significant difference between the MBCB and RFCBT treatment groups and the integration of MBCT and RFCBT, which means that the mean improvement in the psychiatric and psychological symptoms of the MBCT group is lower in both groups.

4. Discussion

The results of this study show that between the improvement of psychiatric and psychological symptoms in the post-test and pre-test, pre Test and follow-up have a significant difference. However, there was no significant difference

between the mean of improvement of psychiatric and psychological symptoms in follow up and post-test stages (table1). Strawn Jeffrey and et al,(2016) showed that MBCT-C treatment in anxious youth with a familial history of bipolar disorder is associated with increased activation of brain structures that sub serve interception and the processing of internal stimuli-functions that are ostensibly improved by this treatment. The results of Table 2 show that between the improvement of psychiatric and psychological symptoms in the post-test (93.59%) and pre-test (96.83%), pre-test (083.96) and follow-up (93.72) there is a significant difference but there was no significant difference between the mean improvement of psychiatric and psychological symptoms in the follow up and post-test stages. As a result, the effect of therapeutic intervention is stable over time. Covariance analysis was used to investigate the integration of MBCT and RFCBT in improving psychiatric and psychological symptoms of bipolar disorder. Isaaci, Chobrava, Limina and Gonzalez Pinto (2010), in their research entitled what is the method for a psychological intervention program for patients with refractory bipolar disorder? It was concluded that the experimental group had less hospitalization in comparison with the control group, and there was a significant difference in depression and anxiety in relation to mania and inappropriate treatment after treatment. Analysis of intra-group differences An experiment showed a decrease in mania and depression, anxiety and incompatibility, while in the control group, the number of admissions and the high level of mania increased anxiety and incompatibility. Finally, it can be said that the reason that some patients do not respond to treatment is that there is an explanation that may be related to the defect in intervention, in that the techniques and training used to reduce these symptoms are inadequate or disproportionate have been. And combined therapy has a better performance. Finally, our results suggest that suggestions for future combinative therapies are appropriate for patients with bipolar disorder resistant. And other therapies are combined and compared.

Gart et al. (2015) used MBCT for adolescents with anxiety disorders susceptible to bipolar disorder. This treatment increased attention adjustment, awareness and decreased anxiety. A study in 2016 was conducted by DE Place and colleagues on psychological problems with adolescents with behavioral problems. Group therapy was performed based on cognitive-mindedness. That adolescents have recovered symptoms of depression, rumination, emotional regulation, and impulsivity. On the other hand, bipartisan teenagers have a bad mood (Agasson 2011, quoted by Garth 2015) as a result of the increased activity of the brain membrane called PLPFCE which causes an emotional maladaptation the increase in PLPFCE is associated with mania symptoms. Considering that the MBCT is involved in emotional regulation, it may be effective for bipolar teenagers who have emotional maladaptation. Mindfulness and attention are awareness of the current experience (Baron 2008). Patients with bipolar disorder usually do not have insight, they must be aware of their excitement with cognitive behavioral therapy. So that they can be involved in a vigorous participation in the transcending process of living. In general, the integration of psychological treatments and timely treatment will prevent the complications of this severe and fatal disease.

The present study was one of the initial attempts in Iran, to check the feasibility and Integration of Mindfulness – based cognitive therapy and recovery cognitive behavioral therapy for Bipolar disorder. While interpreting the findings, it should be noted that Integration of Mindfulness –based cognitive therapy and recovery cognitive behavioral therapy was found to be suitable for clients in partial remission, with relatively fewer episodes and residual symptoms. Small sample size is the significant limitation of the present study; these findings have restricted

generalizability. In addition, there was absence of a control group to compare the significance of therapeutic gains. We suggest future studies should aim for larger sample sizes to allow for rigorous statistical analysis and longer follow-up assessments to confirm these preliminary findings.

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