

The Effect of Combining Mindfulness-based Cognitive Therapy with Pharmacotherapy on Depression and Emotion Regulation of Patients with Dysthymia: A Clinical Study

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Objective: Mindfulness skills are assumed to be related with emotions. Deficits in emotion regulation could lead to development and persistence of mood disorders. Dysthymia and double depression are two chronic types of depression. This chronicity can be attributed to the one's inability to regulate his/ her mood. In this study, we aimed to evaluate the effect of mindfulness-based cognitive therapy (MBCT), which is one of the proposed methods for emotion regulation, on depression and the ability of emotion regulation of patients with dysthymia.

Method: This clinical trial was conducted on 50 dysthymic and double depressed patients. They were selected through convenience sampling and assigned into intervention and control groups. The control group received only medication, while the MBCT group participated in an eight-session program once a week with each session lasting for two to two and half hours in addition to receiving medication. All the participants filled out Beck Depression Inventory II and Difficulties in Emotion Regulation Scale before and after the program. Data were analyzed using the SPSS statistical software (Version 16) and univariate covariance statistical method.

Results: While there were no statistically significant differences between the two groups with respect to the demographic characteristics, we observed a statistically significant improvement in the defined variables in post-test of the MBCT group compared to the case group.

Conclusion: The results of this study revealed that combining MBCT and pharmacotherapy could cause significant improvement in depression symptoms and increase the patient's ability to regulate emotion compared to pharmacotherapy alone.

Key words: *Dysthymia, Emotion Regulation, Mindfulness-based Cognitive Therapy*

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The concept of depression has been recognized among the physicians. Avicenna, in his book Canon of Medicine, referred to depression as "melancholy" and defined it as a disorder in which the thought deviates from the natural path leading to destruction and fear. He believes that this disorder is caused by ill-tempered dry and cold humor. In his opinion, dry and cold humor is opposed to and hurts the spirit (1).

Dysthymia can be initially differentiated from major depression by its chronic nature and less severe symptoms. Among the signs considered for major depression in DSM-IV, only psychomotor disorder and suicide thoughts cannot be observed in dysthymia. This is somewhat in line with the studies conducted by Beck et al. (1987) who reported suicide thoughts and loss of appetite not to be the features of dysthymia (2).

A high rate of comorbid disorders are observed in this disorder, which is usually accompanied by other psychological disorders such as anxiety disorders, drug

abuse, and alcohol abuse. In addition, more than 75% of individuals with dysthymia experience exacerbations in their symptoms in the form of major depressive disorder (3-7), which is defined as "double depression" (7, 8). Following the signs of dysthymia predicts strong risk factors for major depression for both children and adults (7).

Emotion regulation or control has been a central concept for many Asian and European philosophers. For instance, Spinoza, a 17th century philosopher, was highly interested in emotions; he differentiated the negative emotions and positive ones and emphasized the regulation of the passions. Studies by Block and Block (1980) on ego resilience directly affected the present works on emotion regulation. Block emphasized the inefficient nature of over-controlling and importance of flexible, optimum control for more compatibility (9).

Mood disorders are accompanied by disorders in perception and processing of the emotional information

and storing it in the memory. These disturbances may play a role in providing the grounds for problems in interpersonal behaviors as well as the commencement and continuation of mood disorders (10).

Some concepts in emotion regulation have emphasized controlling the emotional experiences, emotional expression, and particularly severe control of negative emotions and reduction of emotional arousal. On the other hand, some others have emphasized the functional nature of the emotions in conceptualization of emotion regulation, suggesting that emotion regulation is not similar to emotion control and does not mean immediate reduction in negative emotions. Hayes et al. (1996) stated that making attempts to avoid internal experiences such as unwanted thoughts and emotions provides the grounds for a large number of psychological disorders. In addition, trying to control or suppress the emotional experiences may increase emotion regulation disorders. Thus, these recent conceptualizations of emotion regulation emphasize the importance of acceptance and valuation of the individuals' emotional responses (11).

This is what mindfulness approaches do by completely focusing on the present experiences through a moment-based approach. Mindfulness-based Cognitive Therapy (MBCT) combines aspects of Beck's cognitive therapy with meditations to train people to become more aware of their bodily and mental experiences such as thoughts, feelings and external environments without judging them. MBCT enables people to view their thoughts and emotions as transient phenomena rather than facts (12). On the contrary to Beck's cognitive therapy, MBCT does not aim to correct the cognitive errors; it removes the thoughts from consciousness and help the individuals to abandon the troublesome situations when immediate change is not possible (13, 14). Baer (2006) believes that being in a mindful status facilitates the exposure and prevention of responses in emotional as well as psychological conditions. Similarly, Linehan (1993 a) states that mindfulness practice may be beneficial for the individuals who fear from facing their emotions (15).

The MBCT method was planned initially to prevent relapse in depression, and a large number of studies have shown its impact on the acute phase of depression and treatment-resistant depressions (16-21).

Our target sample in this study was a group with chronic depression. Given the burden that this type of depression causes the individual and society, choosing the most effective treatment plan to deal with dysthymia and double depression is important and yet controversial. While some studies have shown the superiority of SSRIs to psychotherapy alone in dysthymic patients (22), some others have emphasized the rapid and robust effect of medication and its little role in reducing risks once it is discontinued (23). Imel et al. (2008) found that psychotherapy has significant benefits at follow-up and prophylactic effects not retain by medication (24) However, the majority of

researches have suggested combined treatment as having the most improvement rate compared to each of these methods alone (22, 25 and 26). In the case of MBCT, Kuyken (2008) suggests that adding MBCT to usual treatment with antidepressants significantly reduced residual symptoms and relapse/recurrence rates of depression over 15-month follow-ups (27).

According to the mentioned studies, it seems that adding psychotherapy to pharmacotherapy in the treatment of patients with dysthymia could have an additive effect. In this study, we aimed to evaluate MBCT method to achieve the positive results in a group of patients with chronic depression.

Materials and Method

Participants

Using convenience sampling, we selected 75 patients out of all patients who referred to two of the psychiatric clinics affiliated to Shiraz University of Medical Sciences. These individuals had been regularly referred to the collaborator psychiatrists during their course of disorder and were diagnosed to have dysthymia or double depression disorder. A master of clinical psychology interviewed the participants using SCID-I to ensure they met the diagnostic and inclusion criteria for this study. According to the study criteria, 50 individuals were entered into the study and randomly assigned to control and case groups. The case group received MBCT in addition to medication, while the control group received medication only. All the study participants had been receiving antidepressants of any type depending on the psychiatrist's clinical judgment for at least six months before the study. They participated in the study without changing the type and dosage of medication they have been using treatment as usual (TAU). All the participants signed the informed consent form before entering the research project.

The inclusion criteria of the study were as follows: Suffering from depression for at least two years based on the DSM-IV-TR diagnostic criteria of dysthymia or double depression; being older than 18 yrs.; having at least a high school diploma; not receiving any other psychological treatment elsewhere such as individual psychotherapy that could coincide with the study; not being diagnosed with severe mental disorders such as psychosis, mania, or a full criteria personality disorders in the clinical interview; lack of drug or alcohol abuse while taking part in the study; and not suffering from depression resulting from a simultaneous physical problem. Moreover, the participants had to attend to at least five to eight treatment sessions.

Procedure

This study was conducted with a two-group quasi-experimental or static group comparison design to evaluate the effect of MBCT program on emotion

regulation and treatment of patients with dysthymia who received medication.

Measures

Beck Depression Inventory-2 (BDI-II): This 21-item self-report questionnaire is a revised version of BDI questionnaire that was developed to measure depression, and it is more consistent with DSM-IV-TR compared to the first edition. BDI-II is used to assess the severity of depression in people older than 13 years. Furthermore, Mohammadkhani and Dobson (2007) showed BDI-II as a valid and reliable instrument for the Iranian population. The reliability coefficient for all the 21 items was 0.913. The correlation of each item with the questionnaires indicated that item 15 (lack of energy) with a coefficient of 0.618 had the highest possible recognition and item 19 (difficulty concentrating) with a coefficient of 0.454 had the least ability to diagnose. To determine the construct validity of the questionnaire, the correlation between the BDI-II and Depression Scale of Brief Symptom Inventory was calculated to be 0.87 (28).

Difficulties in Emotion Regulation Scale: Gratz developed this scale in 2004. It is a 36-item, multidimensional, self-report questionnaire, which evaluates the individual's emotion regulation patterns and includes six subscales. This scale has been designed based on the experimental and conceptual works that define emotion regulation as follows: Awareness and perception of the emotions; acceptance of the emotions; the ability to control the impulsive behaviors and trying to achieve goals while experiencing negative emotions; the ability to use flexible emotion regulation strategies to regulate the emotional responses for the individuals to reach their goals and situational needs. Problem in each of these domains could indicate a disorder in emotion regulation.

This scale assesses six subscales including not accepting the emotional responses, problem in performing the behaviors leading to one's goal, impulse control problems, lack of emotional awareness, limitation in finding emotion regulation strategies and lack of emotional clarity (29).

Sharifi et al. (2009) standardized this questionnaire in Iran. The reliability of the questionnaire was calculated using bisection and Cronbach's alpha methods to be 0.86 and 0.8, respectively for the whole questionnaire ($P < 0.01$), indicating acceptable coefficients for the questionnaire. To determine the concurrent validity of the questionnaire, its scores were correlated with the scores of Zuckerman Sensation Seeking Scale, and a significant positive correlation was found between them ($n = 59$, $r = 0.26$, $p = 0.43$).

Structured Clinical Interview for Diagnosing Axis I Disorders in DSM-IV-TR (SCID-I): This interview was designed by First, Spitzer, Gibbon, and Williams (2002), and it is used for diagnosing dysthymia and refusing differential diagnoses. It has appropriate reliability and validity for diagnosing psychological

disorders. Sharifi et al. (2004) calculated psychometric properties of the questionnaire for the Iranian population. Diagnostic agreement with clinical interview by two psychiatrists according to Kappa index was above 0.6. Total Kappa index for all current diagnosis was 0.52 and it was 0.55 for lifetime diagnosis (30).

Treatment Process

Segal et al. derived the program protocol from "MBCT for depression" (2002), which is displayed in Table 1. It included eight weekly sessions with the duration of two to two and half hours. Clinical interview was performed in a briefing session before the 8th session, and the participants were evaluated in terms of inclusion and exclusion criteria, and treatment method was explained to them.

Results

Three participants dropped out from each group, so the final sample of the study was 44, each group consisting 22 participants. The control group included 6 males and 16 females, while the case group included 5 males and 17 female. The mean age of the control group was 35.2 (± 9.4) years and it was 30.7 (± 7.9) years for the case group. Considering the fact that the participants were selected through convenience sampling, to be able to generalize the study findings, we evaluated the two groups considering the demographic variables including age, sex, and level of education. The results of Chi-square test and independent t-test revealed no significant difference between the two groups in these variables. The mean scores of depression and emotion regulation disorder in the two groups before and after the intervention are presented in the following graphs. As the Fig. 1 demonstrates, the intervention group's depression scores considerably decreased in the post-test compared to the pre-test. The decrease was statistically significant ($P = 0.000$).

Fig. 2 displays a considerable decrease in the intervention group's mean score of emotion regulation disorder in the post-test compared to the pre-test. On the other hand, a slight increase could be observed in the mean score of the control group. The two groups were independently considered in the analyses, so ANCOVA was used to control the effect of the pre-test. Before performing ANCOVA, the variables were investigated concerning the necessary assumptions, and the results revealed that parallelism of the slope of the regression line and normal distribution of the data applied to the data in both groups.

According to the following table, a significant difference was found between the two groups in the emotion regulation disorder scores in the pre-test and the post-test ($F = 7.2$, $P = 0.01$). Moreover, the study results revealed a significant difference between the two groups in the subscales of "not accepting the emotional responses", "problem in impulse control", and "limitation in finding emotion regulation strategies".

Table1. Curriculum of each Intervention Sessions' content

Sessions	Contents of each session
Session 1	Establishing orientation of the class and setting the rules, raisin exercise was used to train the participants to concentrate on the present moment; body scan practice; breath focus exercise
Session2	Body scan practice; thought and feeling exercise; pleasant event calendar, mindfulness of routine activities
Session 3	Seeing and hearing exercises; sitting meditation; a three-minute breathing space; mindful walking; unpleasant event calendar
Session 4	Seeing and hearing exercises; sitting meditation; defining the territory of depression: Negative automatic thoughts; diagnosis criteria for depression
Session 5	Sitting meditation; breathing space; reading poems related to mindfulness; introducing the concept of "acceptance"
Session 6	Sitting meditation; mood; thoughts and alternative points exercise; breathing space, observing thoughts and feelings technique
Session 7	Sitting meditation; exercise to explore links between activity and mood; behavioral activation (generate a list of pleasure and mastery activities); identifying actions to take in low mood periods
Session 8	Body scan practice; reviewing the whole course; discussing how to keep up with what was developed over the past seven weeks; discussing plans and positive reasons for maintaining the practice

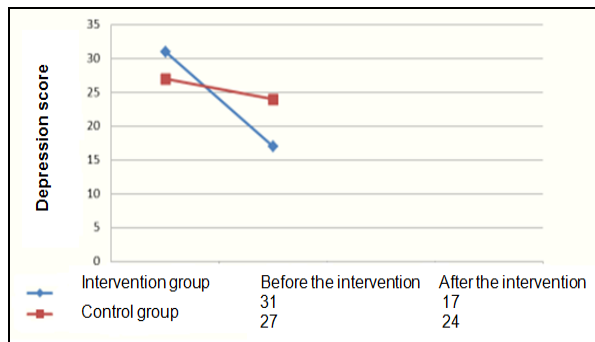


Figure1. The Mean Changes in Depression Scores Pre and Post Treatment

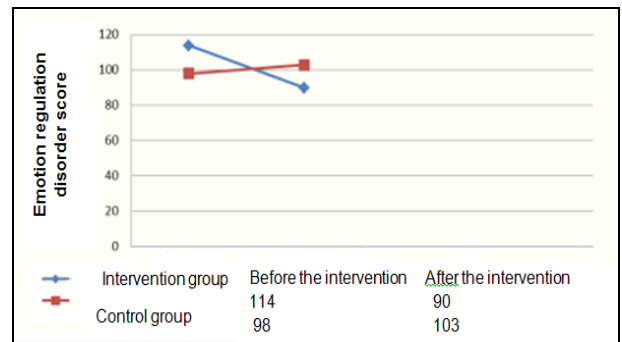


Figure2. The Mean Changes in Emotion Regulation Disorder Pre and Post Treatment

Table2. The Results of ANCOVA on the Groups' Mean Scores of Emotion Regulation Post-Test

	Source of change	Sum of squares	Degree of freedom	Mean squares	F coefficient	P-value
Subscales	Not accepting the emotional responses	185.2	1	185.2	5.2	0.02*
	Problem in performing purposeful behaviors	21.8	1	21.8	1.4	0.24
	Problem in impulse control	120.7	1	120.7	6.6	0.01*
	Lack of emotional awareness	63.8	1	63.8	3.6	0.06
	Limitation in finding emotion regulation strategies	147.3	1	147.3	6.8	0.01*
	Lack of emotional clarity	2.1	1	2.1	0.15	0.69
	Emotion regulation disorder	2557.8	1	2557.8	7.2	0.01

However, no significant difference was observed between the two groups in the subscales of “problem in performing purposeful behaviors”, “lack of emotional awareness”, and “lack of emotional clarity”.

Discussion

Studies have shown that depressed individuals have problems in neglecting the loss-related emotional signs and distracting their attention from them. In other words, they are considerably incapable of regulating their emotions after a loss or failure, which is a critical area in depression (10). As Figure 1 depicts, after the intervention, the mean score of depression in the case group significantly differed from that of the control group. The mean scores of depression decreased from severe to mild based on BDI-II in the case group, while the mean scores of the control group was average based on BDI-II both before and after the intervention.

The results of Figure 2 revealed a decreasing trend in the case group in terms of emotion regulation variable after receiving MBCT intervention. This result is consistent with the findings of Erisman, Salters-Pednault, and Roemer (n.d) that found levels of mindfulness have a significant relationship with emotion regulation measured by Difficulties in Emotion Regulation Scale (DERS) (31). Thus, it seems that MBCT provides the individuals with dysthymia with more efficient and effective strategies for emotion regulation.

Prior to the emergence of acceptance-based approaches, controlling emotions was a proposed way to manage them; however, studies have shown that suppressing emotions to regulate them results in more negative consequences such as poor social adjustment and well-being (32). Repressed emotions also underlie experiential avoidance which means trying to avoid experience of emotions, feelings, thoughts and other mental contents (33) and studies have shown it to have a critical role in levels of anxiety disorders and human suffering such as prolonging the course of depression (34, 35). Therefore, emotional acceptance by adopting a non-judgmental and welcoming stance toward internal experiences have been encouraged in stark contrast to struggling to eliminate, control or changing emotions (32). This concept has been discussed extensively in the context of mindfulness-based theories. Mindfulness-based therapies by changing one's relationship with his/ her experiences and cultivating the notion of acceptance provides strategies for effective emotion regulation and self-regulation (36). Furthermore, facing with unpleasant emotional states repeatedly, which is broadly encouraged in MBCT, is also a kind of exposure with these unwanted mental contents to the goal of extinction. Apparently, it differs from cognitive therapy approaches in that the focus is on altering the content of thoughts (31, 37).

The results of Table 2 showed that among the emotion regulation subscales, the main changes could be

attributed to three subscales of “acceptance of positive or negative emotions”, “problem in impulse control” and “individuals’ finding strategies for regulating these emotions”. In line with recent studies that propose emotional experiences rather than suppression as an effective strategy for emotion regulation (32, 34, 37-39), we can state that increasing one’s acceptance toward his/ her emotional responses can broaden one’s mental space to search for new solutions to manage internal impulses and external events. More recent theories of emotion regulation emphasize that identification, acceptance, and being aware of the emotions lead to selecting the most appropriate way for achieving the intended goals. The results also revealed that accepting emotions rather than suppressing and denying them, impede self-blaming in the individual, a component that studies found to create more problems in emotion regulation (11).

On the other hand, the significant decrease in the mean score of “problem in impulse control” in the intervention group showed the difference between experiencing an emotion and acting on its base, which is highly emphasized in mindfulness interventions. For most people, experiencing an emotion means acting upon it or suppressing it. In addition, mindfulness exercises and meditations provide the individual with various choices to replace the usual inefficient strategies when experiencing negative emotion-focused strategies used to distract from the present condition and focusing on other environmental components. This can be confirmed by significant changes in the scores of “problem in impulse control” and “limitation in finding emotion regulation strategies” subscales.

With respect to the other subscales, no statistically significant difference was observed between the two groups in “lack of emotional clarity” subscales in the post-test. These subscales evaluate the distinction among the emotions as well as the emotions’ verbal description, which seems to be less affected by the mindfulness training. It seems that the change in the regulation of emotions was affected by factors other than identifying accurate emotions. In the Iranian culture, depressed people tend to report and recognize their mental contents as thoughts rather than feelings. Patients’ inability to differentiate thoughts from emotions might be due to the inseparable nature of differentiating thoughts, emotions or other mental contents as mindfulness literature did not make such a distinction either (31). Wilber (1996) proposes that “information processing occurs hierarchically across cognitive, emotional and physiological systems, which have been suggested to be functionally interdependent and inseparable” (31). However, more researches are needed to enable us to interpret this result accurately.

As no significant change was found in the “problem in performing purposeful behaviors” subscale, and because our sample was a group of dysthymic patients, we dealt with two delineating factors of chronic course of depression and chronic use of antidepressants, both

of which are accompanied by apathy features. Hence, transferring cognitive and emotional changes into behavioral ones can be attributed to these features. The short-term course of the treatment can also be another reason because converting the adaptive alternatives for emotional regulation into practical solutions to the extent that the individuals can overcome their daily hassles is a time consuming process and needs more long-term interventions. Moreover, making use of cognitive-behavioral interventions such as self-control and positive reinforcement programs together with mindfulness might be accompanied by more comprehensive effectiveness.

Limitations

Non-random selection of this study and lack of follow-up due to time constraints were two of the study limitations. Therefore, conducting more studies on this topic is highly recommended to generalize the findings and evaluate the maintenance of the results over time. Moreover, the type and dosage of antidepressant medication were not controlled in the two groups. Therefore, it seems that evaluating the efficacy of MBCT combined with specific dosage or group of antidepressants could more accurately determine the optimal mode of the combination therapy. Furthermore, we suggest that anxiety, which seems to be a moderating factor in the effectiveness of treatment be controlled in the future studies.

Conclusion

In this study, it was found that the severity of depression and the ability of emotion regulation of patients with dysthymia who had participated in MBCT sessions improved significantly compared to the patients who did not participate in the program. Hence, it may be argued that mindfulness skills could show their effects in relation to chronic depression, in which emotion regulation has a central role.

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Conflict of interest

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