



Effectiveness of mindfulness-based cognitive therapy on depression and anxiety in women with systemic lupus erythematosus

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Original Article

Abstract

BACKGROUND: Mindfulness-based cognitive therapy (MBCT) is an effective psychological approach for chronic mood disorders. This study was conducted to examine the effectiveness of MBCT on depression and anxiety in women with systemic lupus erythematosus (SLE) within a 3-month follow-up.

METHODS: This study was quasi-experimental with pretest-posttest design and control group. Study population consisted of 200 women with SLE in Sari, Iran, in 2016. Of whom, 30 depressed and anxious women were selected and assigned to two 15-member groups randomly. Experimental group participated in 8 sessions of intervention, while control group were in waiting list. MBCT was educated to women. To collect data, Beck Depression Inventory (BDI-II) and Beck Anxiety Inventory (BAI) were employed at baseline and follow-up stages. To analyze data, descriptive statistics [mean and standard deviation (SD)] and analysis of covariance (ANCOVA) were used through SPSS software.

RESULTS: There was a significant difference between experimental and control groups in scores of depression and anxiety in post intervention and follow-up stages ($P < 0.001$).

CONCLUSION: MBCT could decrease chronic negative mood symptoms such as anxiety and depression in patients with SLE. We suggest this psychological approach for women with SLE.

KEYWORDS: Mindfulness; Mindfulness-Based Cognitive Therapy; Depression; Anxiety; Systemic Lupus Erythematosus; Women

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Introduction

Systemic lupus erythematosus (SLE) is an autoimmune disease which includes the production of autoantibodies with many different clinical signs and symptoms.¹ Manifestations could present with musculoskeletal, dermatologic, cardiovascular, movement, hematologic, and neurologic symptoms.² SLE is seen more in women and 8

to 1 ratio of women to men is shown.²

Pisetsky et al. have coined the term "Type 2" symptoms.³ The symptoms include sleep problems, chronic and severe pain in body, mood disorders, and cognitive dysfunction. These symptoms usually could not be removed with immunosuppressive drugs. Neurological and psychiatric symptoms affect function of the patients with SLE.⁴ Throughout their lives, more than 65% of patients experience mood disorder, such as major depression (47%), phobia (24%), panic disorder (16%), obsessive-compulsive disorder (OCD) (9%), and bipolar disorders (6%). Thus, the

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psychological consequences related to SLE are significant, and it has a considerable impact on all mental states of patients.⁵

Several studies showed that stress could worsen SLE symptoms.⁶ In fact, several studies have shown that the majority of people with SLE believe that stress plays a major role in the onset and exacerbation of their illness.⁷⁻⁹ We know that emotional problems are a critical issue in patients with SLE. The lifetime risk of depression for women is 10% to 25% and for men is 5% to 12%. Suicide as a symptom of depression is one of the main reasons that can lead to death.¹⁰ It has been reported that there is 2 times higher prevalence of depression and anxiety in patients with SLE compared to the general population.

Mindfulness involves “paying attention purposefully to the present moment or being here and now, and having non-judgmental approach”.¹¹ It refers to conscious awareness and attention on here and now with an open and non-judgmental mind.^{12,13} According to several evidence, mindfulness-based interventions (MBI) could improve coping with pain and psychological symptoms. Segal et al. introduced mindfulness-based cognitive therapy (MBCT) as a psychological approach for prevention of recurrence of depression and anxiety.¹⁵ This therapeutic approach could increase the flexibility of cognitive activity and reduce the rumination, obsession and overgeneralization of biographical memory, self-critical talking, and chronic negative mood. Patients could learn to process an experience without judgment, and change their relationship with obsessions, rumination, and emotions and embrace them.^{14,15} MBCT can be helpful in the prevention of recurrence of major depressive episodes. Moreover, this approach could control rumination in psychiatric patients and is effective in improving general health in patients with SLE.¹⁶

Considering the importance of depression and anxiety in patients with SLE, the aim of this study was to examine the effectiveness of

MBCT in reducing depression and anxiety in women with SLE.

Methods

This study was a quasi-experimental study with pretest-posttest plan and control group. Sample size consisted of 200 women with SLE referring to Medical Center of Bagheban (Tooba) in Sari, Iran, in 2016. Sampling method was convenience sampling. Inclusion criteria included having SLE at least for 2 years, having elementary education level, and tendency to participate in study. Exclusion criteria included bipolar disorder, psychosis, substance abuse, and having suicidal thoughts. Some information was given to participants about confidentiality and right to exit from study after signing consent form; moreover, it was explained to control group that this therapy was postponed for a certain time of 2 months when they were waiting, then they would receive therapy freely.

Experimental group received MBCT intervention in 8 sessions, while control group was in waiting list. To collect data, all patients filled out Beck Depression Inventory (BDI-II) and Beck Anxiety Inventory (BAI) at baseline and follow-up stages. The data were analyzed by analysis of covariance (ANCOVA) through SPSS software (version 22, IBM Corporation, Armonk, NY, USA). This study has been derived from a master dissertation (No. 15920701882020) approved by Islamic Azad University, Tonekabon Branch, Tonekabon, Iran.

BDI-II: The BDI-II is a scale of 21 items and one of the self-report measurements most widely used. The original BDI's psychometric properties are well established. The Persian version of this inventory has a validity coefficient of 70%, reliability coefficient of 77%, and an internal consistency of 91%. The internal consistency of the BDI-II for Iranian population has been found to be 87%, and the test-retest reliability is 73%.¹⁷

Table 1. Comparing scores within pretest, posttest, and follow-up

Statistical index	Number	Pretest (mean ± SD)	Posttest (mean ± SD)	Follow-up (mean ± SD)
Depression	24	20.50 ± 50.18	7.56 ± 6.22	4.18 ± 8.00
Anxiety	24	1.51 ± 35.20	21.40 ± 12.29	3.11 ± 10.43

SD: Standard deviation

BAI: The BAI is a 21-item scale that was developed to discriminate anxiety from depression. Each item on the scale describes a symptom of anxiety. In a 4-point scale ranging from 1 to 3, the respondent should rate each symptom over the past week. The items yield a total score between 0 and 63. The BAI has high internal consistency and total item correlations ranging from 0.30 to 0.71 (median = 0.60) and studies show its convergent and discriminatory validity. Studies show that BAI's validity and reliability are robust. This tool's consistency coefficient was found to have a 92% alpha coefficient, and its correlation varied from 30% to 76%. In an Iranian study, the validity coefficient of the BAI was equal to 0.72 and validity coefficient of test-retest was equal to 0.83 within one month and Cronbach's alpha was equal to 0.92.¹⁸

Treatment protocol of MBCT: The experimental group participated in eight sessions (45-60 minutes) of MBCT intervention. This approach is based on Segal et al.'s study.¹⁵

The content of sessions included setting rules, doing exercise for being in the present moment, body scan practice, breathing exercise, sitting meditation, three-minute breathing space, mindful walking, and observing thoughts and feelings technique.

Results

30 women with at least 2-year history of SLE aged

between 30 to 45 participated in this research. Two hypotheses were tested in this research:

Hypothesis 1: MBCT can affect depression reduction (Table 1).

According to table 2, multi-variable F-value is significant at level of $P < 0.001$. Hence, it can be stated that MBCT can affect depression reduction. To find this effect, repeated measures analysis of variance (ANOVA) was employed.

According to significance level of Huynh-Feldt ($P < 0.05$), effect of MBCT on depression was confirmed.

Hypothesis 2: MBCT can affect anxiety reduction (Table 3).

According to table 4, multi-variable F-value is significant at level of $P < 0.001$. Hence, it can be stated that MBCT can have an effect on reducing anxiety. To find this effect, repeated measures ANOVA was employed.

According to significance level of Huynh-Feldt ($P < 0.05$), effect of MBCT on anxiety was confirmed (Table 5).

According to table 6, F value for test group was obtained to be 19.94 that is above critical $F = 4.60$ at confidence level (CI) of 95% and significance level of 0.05, indicating the significant effect of MBCT on anxiety of experimental group.

Discussion

Results of current study showed that MBCT could reduce depression and anxiety symptoms in women with SLE.

Table 2. Repeated measures analysis of variance (ANOVA) to examine the effect of mindfulness-based cognitive therapy (MBCT) on reducing depression

Test	Value	Hypothesis df	Error df	F-value	P
Pillai's trace	0.67	1	6	28.51	< 0.001
Wilks' lambda	0.32	1	6	51.34	< 0.001
Hotelling's trace	11.20	1	6	51.28	< 0.001
Roy's largest root	11.20	1	6	28.51	< 0.001

df: Degree of freedom

Table 3. Interactional effect of dependent variable of depression

Source		Sum of squares	df	Mean square	F-value	P
Depression	Sphericity assumption	7.97	1.00	3.98	31.50	< 0.001
	Greenhouse-Geisser	7.97	1.98	4.12	31.50	< 0.001
	Huynh-Feldt	7.97	1.00	3.98	31.50	< 0.001
	Low boundary	7.97	1.00	7.97	31.50	< 0.001
Group	Sphericity assumption	1.09	1.00	0.50	3.96	0.242
	Greenhouse-Geisser	1.09	1.98	0.51	3.96	0.025
	Huynh-Feldt	1.09	1.00	1.09	3.96	0.024
	Low boundary	1.09	1.00	1.01	3.96	0.056

df: Degree of freedom

Table 4. Repeated measures analysis of variance (ANOVA) to examine effect of mindfulness-based cognitive therapy (MBCT) on reducing anxiety

Test	Value	Hypothesis df	Error df	F-value	P
Pillai's trace	0.432	1	6	10.26	<0001
Wilks' lambda	0.568	1	6	10.26	<0001
Hotellin g's trace	0.760	1	6	10.26	<0001
Roy's largest root	0.760	1	6	10.26	<0001

df: Degree of freedom

This result is in line with some studies which showed that MBCT could improve psychological well-being and quality of life and reduce negative mood of patients with SLE.^{15,19} We know that these patients suffer from physical and psychological pain due to this disease and psychological intervention could reduce distress and negative emotions in these patients.

Furthermore, our results reveal that

mindfulness-based stress reduction (MBSR) may have an alleviating effect on negative mood among individuals with SLE. These therapeutic effects were found in several studies. Negative mood is a prevalent emotional symptom of SLE. It may stem from physical symptoms (e.g., weight gain and facial rashes) as well as the experience of living with as a patient who experiences a severe and chronic disease that could affect the daily functioning of patients.^{19,20}

The main aim of the study was to evaluate the efficacy of MBCT on negative mood such as depression and anxiety in patients with SLE. Furthermore, findings of this study are matched with results of some studies conducted about the efficacy of MBCT in general health and negative mood of patients with SLE. Kim et al. showed that MBSR could improve psychological distress and negative mood among patients with SLE. These findings are in line with the study of Kim et al.²¹ They showed the efficacy of MBCT on negative mood in Korean patients with SLE.

Table 5. Interactional effect of dependent variable of anxiety

Source		Sum of squares	df	Mean square	F-value	P
Depression	Sphericity assumption	5.61	1.00	2.80	11.21	< 0.001
	Greenhouse-Geisser	5.61	1.67	3.35	11.21	< 0.001
	Huynh-Feldt	5.61	1.83	3.06	11.21	< 0.001
	Low boundary	5.61	1.00	5.61	11.21	0.002
Group	Sphericity assumption	0.02	1.00	0.01	0.04	0.955
	Greenhouse-Geisser	0.02	1.67	0.01	0.04	0.932
	Huynh-Feldt	0.02	1.83	0.01	0.04	0.944
	Low boundary	0.02	1.00	0.02	0.04	0.832

df: Degree of freedom

Table 6. Tests of between-subjects effects dependent variable

Source	Sum of squares	df	Mean square	F-value	P
Modified model	756.25	1.00	756.25	1.77	0.414
Pre-test	222.08	6.00	37.01	1.11	0.502
Group	323.78	1.00	327.78	19.94	0.002
Error	104.81	3.14	33.32		

df: Degree of freedom

Interestingly, the reduction shown in SLE symptoms in our study was associated with reduction in negative mood. We think that this result supports the mind-body relation in SLE, which has already been accepted in some studies. Thus, when one's physical symptoms improve, psychological distress reduces. MBSR is a mind-body intervention that could target both physical and psychological aspects of SLE symptoms.^{22,23}

This study has some limitations including sample size, female gender, and a reliance on self-reporting measures which could be associated to reporting bias for memory deficits. Thus, our findings should be considered with caution in future studies. We suggest that future studies should employ larger samples.

Conclusion

MBCT is a significant therapeutic approach for patients with SLE, as it has emphasis on acceptance of external and internal experiences. Mindfulness skill is a promising intervention for SLE. Therefore, rheumatologists and psychologists could apply this intervention for reduction of anxiety and depression in these patients.

Conflict of Interests

Authors have no conflict of interests.

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