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Can Mindfulness-Based Cognitive Therapy Reduce the Symptoms of Irritable Bowel Syndrome in Women?

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Quantitative Study

Abstract

Background: Irritable bowel syndrome (IBS) is a functional disorder of the lower gastrointestinal (GI) tract caused by stress, which may benefit from a biopsychosocial treatment such as mindfulness-based cognitive therapy (MBCT). The thrust of the study was to examine the efficacy of MBCT on physical and psychological symptoms of women who suffered from IBS. It was hypothesized that MBCT patients would experience greater reduction in overall IBS symptoms in comparison to control patients.

Methods: This survey was conducted in Isfahan, Iran, to investigate the impact of MBCT on a group of Iranian women diagnosed with IBS. In this quasi-experimental study 20 women with the diagnosis of IBS were randomly and equally assigned to experimental and control groups. Severity of IBS was measured by the IBS Severity Scoring System (IBS-SSS) while the patients' psychopathology was assessed by Symptom Checklist 90-R (SCL-90-R). The experimental group was exposed to 8 sessions of MBCT on a weekly basis; each session lasting 90 minutes. Data were analyzed using SPSS software and MANCOVA.

Results: A significant reduction was noted in anxiety, depression, and somatization symptoms after the intervention and in anxiety and obsessive–compulsive disorder (OCD) at follow-up ($p < 0.05$). However, during the follow-up there was no significant progress in the level of somatization and depression. Apparently our treatment modality did not have any impact on the severity of physical symptoms.

Conclusion: Psychological symptoms of IBS can be managed largely with the help of MBCT, resulting in the promotion of mental health in women afflicted by this disorder.

Keywords: Irritable bowel syndrome, Physical symptoms, Psychological symptoms, Mindfulness-based cognitive Therapy

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Introduction

Irritable bowel syndrome (IBS) is a functional gastrointestinal (GI) disorder characterized by abdominal pain and abnormal bowel function. The diagnosis of IBS is based on symptom description, as no organic, biochemical, or structural abnormalities are present (Hillilä, 2010). A higher proportion of women are affected by this disorder compared to men (Spiller, Aziz, Creed, Emmanuel, Houghton, Hungin, & et al., 2007). The etiology of IBS is multifactorial with altered visceral sensitivity, altered gastrointestinal motility, and psychosocial factors influencing symptom generation (Hillilä, 2010). For IBS, the most frequent comorbid psychiatric disorders seen include: 1. Anxiety disorders (panic and generalized anxiety disorder (GAD)); and 2. Mood disorders (major depression and dysthymic disorder) and somatoform disorders (hypochondriasis and somatization disorder) (Drossman, Creed, Olden, Svedlund, Toner, & Whitehead, 1999). There are also evidences regarding the presence of depression and anxiety among individuals with IBS (Sun Cho, Myung Park, Hyun Lim, Kyung Cho, Seok Lee, WooKim, & et al., 2011; Ladep, Obindo, Audu, Okeke, Malu, 2006; Tosic-Golubovic, Miljkovic, Nagorni, Lazarevic, Nikolic, 2010).

Given the increased stress response associated with viscerally related events, poor or inappropriate coping responses to GI-related events, psychosocial adjustment to illness, and the limited success of current medical treatments, psychological treatments have been investigated to address symptoms of IBS (zernicke, Campbell, Blustein, Fung, Johnson, Bacon, & et al., 2012). Cognitive behavioral therapy (CBT), psychodynamic interpersonal therapy, hypnotherapy, and relaxation training are psychological treatments used for patients with IBS (spiller et al., 2007). CBT, dynamic psychotherapy, and hypnotherapy, but not relaxation therapy, are more effective than usual care methods in relieving global symptoms of IBS (Brandt, Chey, Foxx-Orenstein, Chiller, Schoenfeld, Spiegel, & et al., 2009).

Mindfulness-based approaches are increasing in psychological management of IBS. Mindfulness-based cognitive therapy (MBCT) was manualized by Segal, Williams, and Teasdalin 2002 based largely on Kabat-Zinn's (1990) mindfulness-based stress reduction (MBSR) program. MBCT incorporates elements of cognitive therapy that facilitate a detached or decentered view of one's thoughts (Baer, 2003). The efficacy of MBCT in the reduction of depression and anxiety is well documented. (Evans, Ferrando, Findler, Stowell, Smart, & Haglin, 2008; Barnhofer, Crane, Hargus, Amarasinghe, Winder, & Williams, 2009; Foley, Baillie, Huxter, Price, & Sinclair, 2010).

Compared to CBT, MBCT focuses on attitude with nonjudgmental acceptance of inner experiences rather than changing and modifying them. Since somatic symptoms and psychological pain are common in patients with IBS, attention with openness, curiosity, and acceptance can help these patients connect with their somatic symptoms, thoughts, and feelings in a different way. Despite the efficacy of MBCT in IBS treatment, not much attention has been paid in Iran to approach the psychological and physiological symptoms associated with IBS. The present study aims to investigate the efficacy of an MBCT program in improving physical and psychological well-being, and IBS symptoms in a sample of women who met the Rome III diagnostic criteria.

Methods

The study design was pre-post experimental and the population under investigation consisted of women with the diagnosis of IBS. The sample study comprised of women who referred to the urban primary health centers in Isfahan, Iran, during autumn 2012. The inclusion criteria included diagnosis of IBS based on the Rome III diagnostic criteria, adherence to the treatment regime prescribed by the IG specialist, studied at least 9 grades of high school, and aged 20-50.

Patients with the signs and symptoms of psychosis and personality disorders as per the DSM-IV criteria were excluded from the study.

Considering the inclusion and exclusion criteria, only 24 women fulfilled the requirements; however, two of them dropped out and the remaining 20 persistently cooperated with us throughout the study.

The severity of IBS was determined with the help of the IBS Severity Scoring System (IBS-SSS). This instrument is sensitive to change in symptoms over time. The score of the system is based on five items and uses visual analogue scales. The symptom severity score was calculated by summing the five items of pain severity, pain frequency, distension, bowel habit dissatisfaction, and life interference. Patients were classified as having either mild IBS (75-174), moderate IBS (175-299), or severe IBS (300-500) (Francis, Morris, Whorwell, 1997). Scores below 75 indicate remission or normal bowel function (Zernicke et al., 2012). Administration of this scale on a sample of 30 patients yielded a Cronbach's value of 0.71, which is acceptable.

The Symptom Checklist 90-R (SCL-90-R) is a widely applied self-assessment instrument for a broad range of mental disorders and assesses the subjective symptom burden. Moreover, the high acceptance and extensive worldwide application of this instrument as an outcome instrument in the treatment of patients with physical and psychological disturbances should also be noted. This instrument contains 90 items which assess a broad range of psychopathologic symptoms including somatization, obsessive-compulsive disorder (OCD), interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism.

Results

Participants' Select Characteristics

In this study, more than 50 eligible patients were assessed. In total, 24 patients completed baseline measures. They were randomized into treatment conditions (Experimental: n = 12; Control: n = 12). Two cohorts were conducted, and within each class, there were 10 patients. In terms of sex, they were all women. The average age for the experimental group was 35.75 and for the control group was 33.81. Educationally, about 67% of the patients in the experimental group were undergraduates and slightly more than 33% were high school students for the control group, about 91% were undergraduates and less than 10% had studied about 9 grades of high school.

Symptom Severity Change

Table 1 shows that by and large there are considerable changes in anxiety, depression, somatization, and OCD in the experimental group after the intervention (Table 1).

Table 1: Mean Difference in Severity of Symptoms at Baseline, Post-MBCT, and 2-Month Follow-Up; Experimental Versus Controls

Variable	Baseline	Post-MBCT	Follow Up
Experimental Group			
IBS-SSS	337.5 ± 76.7	268.0 ± 117.1	214.5 ± 59.3
Anxiety	14.2 ± 9.1	10.0 ± 9.7	12.6 ± 10.3
Depression	18.6 ± 10.9	12.9 ± 11.8	17.2 ± 13.2
Somatization	20.2 ± 11.4	18.5 ± 11.5	22.2 ± 12.9
OCD	14.3 ± 8.1	12.0 ± 9.7	14.0 ± 9.5
Control Group			
IBS-SSS	227.0 ± 115.8	210.8 ± 117.8	180.8 ± 90.9
Anxiety	12.4 ± 8.8	12.6 ± 8.3	13.3 ± 8.9
Depression	23.5 ± 11.7	20.0 ± 11.0	18.6 ± 11.9
Somatization	18.8 ± 10.2	17.0 ± 9.1	16.6 ± 10.6
OCD	18.0 ± 9.2	14.8 ± 8.7	14.9 ± 10.2

MBCT: Mindfulness-based cognitive therapy; IBS-SSS: Irritable bowel syndrome-Severity scoring system; OCD: Obsessive–compulsive disorder

Table 2. Means and Standard Errors and Effect Sizes for Total Scores of Outcome Measures in MBCT Treatment and Control Groups

Variable Outcome	Assessment Phase	d.f	Mean Square	F Value	Sig Value	Effect Size	Statistical Power
IBS_SSS	Post-MBCT	1	62214.00	11.95	0.01	0.52	0.88
		1	21672.90	4.16	0.07	0.28	0.46
	Follow-Up	1	9999.23	1.68	0.22	0.13	0.22
		1	1905.06	0.32	0.58	0.03	0.08
Anxiety	Post-MBCT	1	187.01	6.96	0.02	0.39	0.67
		1	245.46	9.13	0.01	0.45	0.79
	Follow-Up	1	253.40	6.60	0.03	0.38	0.65
		1	205.03	5.33	0.04	0.33	0.56
Depression	Post-MBCT	1	44.40	0.65	0.44	0.06	0.11
		1	531.27	7.72	0.02	0.41	0.72
	Follow-Up	1	2.31	0.03	0.88	0.01	0.05
		1	294.78	3.26	0.10	0.23	0.39
Somatization	Post-MBCT	1	159.27	3.95	0.07	0.26	0.44
		1	223.43	5.54	0.04	0.34	0.57
	Follow-Up	1	10.62	0.13	0.73	0.01	0.06
		1	133.41	1.58	0.24	0.13	0.21
OCD	Post-MBCT	1	87.68	1.62	0.23	0.13	0.21
		1	239.88	4.43	0.06	0.29	0.48
	Follow-Up	1	170.69	4.64	0.05	0.30	0.50
		1	258.80	7.03	0.02	0.39	0.68

MBCT: Mindfulness-based cognitive therapy; IBS-SSS: Irritable bowel syndrome-Severity scoring system; OCD: Obsessive–compulsive disorder

Results of the covariance analysis showed that by controlling the effect of variables such as education and duration of illness, there were significant differences between the two groups in terms of anxiety, depression, and somatization before and after the intervention ($p < 0.05$). However, for patients who attended the entire course and completed the classes, from post-MBCT to 2-month follow-up, there were significant changes in the levels of anxiety and OCD ($p < 0.05$). Further analysis shows that, in order of importance, MBCT could reduce the level of anxiety by 45.4%, depression by 41.2%, and somatization by 33.5% in the experimental group after the first phase of intervention. A main effect time was observed for the SCL-90-R scores in anxiety domain ($F = 9.129$, $p = 0.012$) as well as OCD domain ($F = 7.03$, $p = 0.023$), indicating the momentum of lowering the anxiety and OCD levels continued from post-MBCT to 2 months follow-up (Table 2).

Discussion

The primary aim of this study was to evaluate the impact of an MBCT program on the somatic and psychological symptoms in women with IBS. In this study, we found that MBCT reduced self-reported psychological symptoms such as anxiety, depression, somatization, and OCD in female IBS patients. Moreover, the results showed that this treatment does not have any effect on somatic symptoms. Lack of efficacy of MBCT on somatic symptoms is inconsistent with results of Gaylord, Palsson, Garland, Faurot, Coble, Mann, and et al. (2011); Zernicke et al. (2012); Moghtadaei, Kafi, Afshar, Ariapouran, Daghaghzadeh, and Pourkazem (2013); and Zomorod, Rasoulzadeh Tabatabaei, Arbabi, Ebrahimi Daryani, and Fallah (2013).

Zernicke et al. (2012) studied the effect of MBSR on 90 patients with IBS; the results showed improvement in symptom severity in the MBSR group. Furthermore, 75 female

patients participated in the study by Gaylord et al. (2011). However, in the current survey, only 20 IBS patients participated, and MBCT was used as the main treatment. Regarding lack of efficacy of MBCT on somatic symptoms, we can say that this treatment may have effect on the patient's perception of pain rather than severity of somatic symptoms. In other words, MBCT may have increased patient's acceptance and reduced their sensitivity to the symptoms, but it did not change the nature and severity of symptoms.

Our observations in psychological symptoms reinforce earlier findings. The effectiveness of MBCT on anxiety is consistent with the studies by Evans et al. (2008), Foley et al. (2010), and Hofmann, Sawyer, Witt, and Oh (2010). The effectiveness of MBCT on depression is also consistent with the studies by Evans et al. (2008), Foley et al. (2010), Kaviani, Javaheri, and Bahyraei (2005), and Masomi (2011). In addition, the findings in OCD are in line with the study by Singh, Wahler, Winton, and Adkins (2004). Sustained, nonjudgmental observation of anxiety-related sensations, without attempts to escape or avoid them, may lead to reductions in the emotional reactivity typically elicited by anxiety symptoms (Baer, 2003). During mindfulness exercise, participants are encouraged to attend their inner experiences such as sensations, thoughts, and feelings at present and any moment. In MBCT, individuals are trained to be aware of their thoughts and feelings and to connect with them in a different way (acceptance). This awareness can lead to improvement in emotional processing and coping skills in chronic diseases. In other words, mindfulness techniques target rumination, worry, and poor emotional regulation resulting in increasing of positive effects and reducing of negative effects.

The failure to retain the momentum of reducing psychological symptoms, such as depression and somatization, at the follow-up phase can be attributed to the lack of time and severity of physical symptoms of the participants. The benefit from the MBCT depends on persistency and adherence to the practical exercises. It is possible the study participants did not perform the exercises a sufficient number of times, partly due to their physical symptoms and environmental stresses which surrounded them. MBCT deals with old habits and ways of life; thus, it is unrealistic to believe that over a short span of time it can perform a miracle and cause fundamental changes in the patient who suffers from chronic IBS.

While the current study extends previous research by using a randomized controlled design and blind assessments, there are a number of limitations that need to be taken into account. First, and most importantly, this study is based on a small sample of female patients. Because of this, the study is potentially more vulnerable to spurious effects and generalizability of its findings is more uncertain. Another limitation of the study is that the main outcome variables are based on self-reports, which are liable to subjective biases. Ideally, these measures would have been complemented by observer-rated measures of symptom severity. As such the study simply relied on structured interviews to assess the physical and psychological states of the study participants before and after the intervention.

Despite all these limitations, findings of this study pave the way to undertaking larger research studies, which embody a larger population of both men and women with IBS across different social strata. The findings provide preliminary evidence suggesting that using mindfulness meditation is feasible in the treatment of IBS, providing valuable addition to already established interventions. Further research into the effects of mindfulness meditation will help to tailor the MBCT program more specifically for IBS patients with more reliable psychological symptoms. We not only need to replicate the study, but also use more extensive follow-ups given the high risk of IBS.

Conclusion

The results of this study showed that MBCT can reduce psychological symptoms, but it does not affect the severity of somatic symptoms. Therefore, this intervention can be used for reduction of psychological symptoms in patients with IBS.

Conflict of Interests

Authors have no conflict of interests.

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