Case Report

Mindfulness-Based Cognitive Behavior Therapy in Patients with Anxiety Disorders: A Case Series

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ABSTRACT

The present study is aimed at evaluating the effectiveness of a Mindfulness-Based Cognitive Behavior Therapy (MBCBT) for reducing cognitive and somatic anxiety and modifying dysfunctional cognitions in patients with anxiety disorders. A single case design with pre- and post-assessment was adopted. Four patients meeting the specified inclusion and exclusion criteria were recruited for the study. Three patients received a primary diagnosis of generalized anxiety disorder (GAD), while the fourth patient was diagnosed with Panic Disorder. Patients were assessed on the Cognitive and Somatic Anxiety Questionnaire (CSAQ), Penn State Worry Questionnaire (PSWQ), Hamilton's Anxiety Inventory (HAM-A), and Dysfunctional Attitudes Scale. The therapeutic program consisted of education regarding nature of anxiety, training in different versions of mindfulness meditation, cognitive restructuring, and strategies to handle worry, such as, worry postponement, worry exposure, and problem solving. A total of 23 sessions over four to six weeks were conducted for each patient. The findings of the study are discussed in light of the available research, and implications and limitations are highlighted along with suggestions for future research.

Key words: *Anxiety, cognitive behavior therapy, dysfunctional cognitions, mindfulness*

INTRODUCTION

In recent years there has been increasing interest in the application of meditation approaches in the management of mental health concerns.[1] Meditation is considered to be one of the three self-regulatory strategies that are effective in the management of anxiety.[2,3]

Mindfulness-based interventions can be traced back to one of India's most ancient meditative techniques, *Vipassana* meditation. The word *Vipassana* in Pali language means to see or observe in a special way and comes from two words, *Vi,* which means 'special', and *passana*, which means, 'to see, to observe'. The word mindfulness is the English translation of the Pali word *Sati* and refers to being conscious, aware, observing, or paying attention.[4] It is a state in which one is required to remain psychologically present and 'with' whatever happens in and around one, without reacting in any way.[5] Thus, the practice of mindfulness meditation enables the person to respond consciously and reflectively, rather than react automatically to internal or external events. Kabat-Zinn (1982) developed the Mindfulness-Based Stress Reduction (MBSR) program, which is a clinical program to facilitate adaptation to medical illness.[6] MBSR consists of eight to ten weekly sessions,[7] and follows a skill-based, educational format.[8] Research indicates that a majority of people who have undergone mindfulness-based treatment programs have shown significant reductions in both

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physical and psychological symptoms.[9-12] Mindfulness-based interventions have been reported to be efficacious in a variety of stress-related medical conditions, and medical conditions with emotional disorders.[2,13-16] There is evidence for the usefulness of mindfulness-based interventions in India, across clinical and non-clinical samples, including tension headaches, obsessive compulsive disorder, depression, occupational stress, and coronary heart disease.[17-23]

It has also been effectively used in the management of anxiety and depression.[2,12,24,25] Segal, Williams, Teasdale (2002) developed the Mindfulness-Based Cognitive Therapy (MBCT) for patients who had recovered from depression.[26] Their therapy is based on the effectiveness of MBSR in psychological and physical problems and it is an integration of the aspects of Beck's cognitive therapy for depression[27] with components of Kabat-Zinn's MBSR program.[6] The application of the MBSR program to anxiety disorder was first reported by Kabat-Zinn.[2]

Anxiety is unwarranted fear, excessive fear that interferes with the individual's overall functioning.[28] The six subtypes of anxiety disorders share common features of emotional experience and cognitive and informational processes. They are characterized by dysregulation of emotional, behavioral, physiological, and cognitive processes.[29] Researchers have examined the conceptual links between certain subtypes of anxiety, such as, Generalized Anxiety Disorder (GAD) and the construct of mindfulness.[30] GAD is characterized by a chronic focus on future negative events along with a sense of apprehension. Worry, which is a hallmark of GAD leads to an experiential avoidance of anxiety, and thereby, prevents emotional processing that is required to overcome anxiety. Individuals with GAD habitually respond to non-existent perceived threats, rather than focusing on the present moment experience, which provides an alternative response that may facilitate adaptive responding.[31,32] Thus, the mechanism by which mindfulness works in anxiety is through a process of detachment between external contingencies and internal experience that is otherwise enhanced by worry and other types of verbal activity, as well as effective emotional regulation skills.[33,34] Habitual patterns of responding to cues and contingencies are gradually replaced by greater awareness of the present-moment experience and reflective focus. Monitoring techniques commonly adopted across cognitive-behavioral interventions can also be considered as a type of mindfulness exercises, which enhances awareness in patients.[29]

Mindfulness is also specifically associated with relaxation techniques — a common and essential element across a number of treatments for anxiety disorders and GAD, and Panic Disorder in particular.[35] Mindfulness-based techniques are likely to be most effective in reducing the cognitive component of anxiety, one of which is the worrisome thinking seen in GAD.[36,37]

The effectiveness of MBSR in the treatment of anxiety disorders has been well-documented and treatment gains are maintained at follow-up.[2,12] Cognitive methods help in the management of worries and in changing expectations and beliefs about vulnerability to dangers that are typical in all anxiety disorders.[38] Results from recent meta-analytic reviews indicate the effectiveness of mindfulness-based therapies across populations presenting with anxiety and depression. However, this review also notes that studies have been carried out on heterogeneous populations that include medical illnesses, non-clinical samples, and only a few studies include psychiatric samples.[39]

A review of studies on MBCT has shown mixed results. Even as some support its effectiveness,[39] others are less confident of its benefits.[40,41] Thus, research studies in the field of mindfulness-based therapies indicate its efficacy in the management of anxiety. Some of these studies have also demonstrated the maintenance of gains over time.[12] Despite the increase in research on MBCT in emotional disorders, there has been little systematic effort to examine its effect on the Indian population. Anxiety disorders are also known to be debilitating and run a chronic course, hence, it is important to identify interventions that help not only symptom reduction, but also equip the individual with strategies to deals with exacerbations. MBCT can be a time- and cost-effective strategy in a setting like India, where a large number of people seek treatment for anxiety disorders. It would be important to understand its effectiveness in patients with anxiety disorders, as few studies have focused on specific diagnostic groups other than the depression and medical population. Hence, the present study is an attempt to examine the effectiveness of MBCT in reducing symptoms of anxiety and worry, and modifying dysfunctional beliefs in patients with anxiety disorders.

Methodology

A pre–post intervention design was adopted. Five clients (four males and one female) with a diagnosis of anxiety disorder were recruited from the outpatient mental health services of NIMHANS. However, one patient dropped out of the study and the final sample comprised of four clients (three males and one female) with a diagnosis of GAD and Panic disorder (F 41.1, F 41.).[42] Those with concurrent diagnosis of psychosis, organic brain syndrome, mental retardation, major medical illness, or previous exposure to cognitive behavioral intervention were excluded from the study.

They were explained the nature of the study and their informed consent to participate was obtained before the start of the study.

Tools

A Sociodemographic and Clinical Data Sheet was used to obtain information on the demographic and clinical history. The behavioral analysis proforma[43] was used to assess specific behaviors in various areas including antecedents, historical, social, cognitive, and biological factors. The behavioral analysis provided the comprehensive data required for selecting the appropriate intervention strategies. Cognitive and somatic aspects of anxiety were assessed using the Cognitive Somatic Anxiety Questionnaire (CSAQ).[44] The Hamilton Anxiety Rating Scale (HARS)[45] was used as the clinician's assessment of anxiety. The frequency and intensity of worry was assessed by the Penn State Worry Questionnaire (PSWQ),[46] and dysfunctional cognitions were assessed on the Dysfunctional Attitude Scale (DAS).[47]

Procedure

Therapeutic program

The therapeutic program consisted of approximately 23 sessions for each client over a period of four to six weeks. The sessions were conducted individually. The specific components of the program were based on the MBCT program. It included self-monitoring of anxiety symptoms, education regarding the nature of anxiety and the different components of anxiety, relaxation training through mindfulness-meditation, and cognitive restructuring for modifying dysfunctional beliefs. The patients were trained in sitting mindfulness meditation. In addition, specific strategies for handling negative automatic thoughts and worries, such as, worry postponement and distraction, and cognitive strategies such as verbal challenging and reattribution were carried out. Each session lasted for approximately 60 minutes. Five sessions were spent for assessment at both time periods, and eighteen sessions for therapy.

CASE REPORTS

Case 1

Mr. S, was a 34-year-old married male, a postgraduate, and was employed at the time of recruitment to the study. His chief complaints were those of continuous brooding and worries over matters related to the past and career, feeling inferior, anxious, and nervous, and he had palpitations since the last eight years, with an increase since two years. He was apparently doing well eight years back. He moved to Bangalore city after completing his graduation, to pursue a higher degree and was working to support his education. He found himself committing minor mistakes at work, for which his employer chided him. This made him feel inadequate and inferior to his colleagues and he would constantly compare himself to his friends. He was reluctant to approach his employer to ask for help and was apprehensive that his mistakes would be pointed in the presence of clients. Meanwhile, the client failed in his examination, which led to a sad mood and increased inferiority. He gradually began avoiding his friends. In addition, he felt very insecure about his job and began to worry about his career and future. He then resigned and subsequently changed jobs twice. Mr. S considered his life to be a complete waste, and felt like a failure and blamed himself for being a burden. He frequently experienced physical problems such as abdominal pain and digestive problems.

He reported a mild depressive episode 12 years back, with spontaneous remission. It was precipitated by a fight with his father. He shares a warm, close relationship with his wife. The patient is the first of the two siblings, born of a non-consanguineous union, and his father was very authoritative and strict. He reports that he never received emotional or financial support from his father in whatever he wanted to do in life, and therefore, had to be self-reliant. Mr. S was referred for the management of his anxiety symptoms.

Case 2

Ms. B, a 37-year-old married woman, a computer engineer, but currently a homemaker, presented with complaints of intermittent tachycardia, breathlessness, choking sensation, palpitations, and thoughts that she would have a heart attack and collapse, with symptoms lasting for approximately ten to fifteen minutes. She had been experiencing these symptoms since the age of ten. She was apparently doing well till the age of ten, at which point she had an accident involving a truck when riding back home on her bicycle. Following this there was an incident of losing her grandmother due to cancer. Ten days following her grandmother's death she experienced a sudden onset of palpitations with breathlessness, accompanied by thoughts that she would die. The symptoms lasted for approximately 20 minutes, after which she felt better. These episodes continued for six months thereafter and in between the attacks she would anticipate the occurrence of another attack with dread. She became preoccupied with her health. Again at the age of 23, she experienced the same symptoms, which continued till the age of 27. During this time, she was also found to have developed sinus tachycardia. Her heart beat increased during her first pregnancy. It normalized after she delivered her child. During her second pregnancy, she once again had high blood pressure and had to be started on medication. In February 2003, she had one episode of sudden onset of palpitations and breathlessness, accompanied

by tremors, an upset stomach, and fear that she was having a heart attack. An electrocardiogram revealed a normal report. Her palpitations subsided and the choking sensation, which she felt in her throat, resolved. A diagnosis of panic disorder was made. Since then, she has been constantly having tachycardia, and she is preoccupied with this.

The patient is the older of two siblings, born of a non-consanguineous union. There is a history of cardiac arrest in her paternal uncles. The patient's father has a cardiac problem. The client has been preoccupied with her health and illness since childhood. Her husband is concerned about her health, because of the episodes of panic. Premorbidly, she was well adjusted and sociable. A diagnosis of panic disorder was made and the patient was taken up for the study after consent was obtained.

Case 3

Mr. RA, a 24-year-old unmarried male, pursuing his Master's degree, presented with complaints of headache, feeling tensed and anxious, and worried about his future, examinations, and family, which were pervasive in nature. He was apparently doing well till 1999. He was doing his under graduation at that time, when he became tense about his examinations. He wanted to do well, due to which he experienced headaches with vomiting. He was advised to take tranquilizers by his family doctor for 10-15 days. Thereafter, he became better and completed his internship. After this, his headaches worsened and would last the whole day. He would be extremely distressed due to the headaches. He frequently worried about his future, what he would do for his career. He would worry about any misfortune befalling his family whenever he read about disasters in the newspapers. Mr. RA felt he should always be the best in whatever he did. He was very stressed for the same reason at his work. He worked for two years and later joined his Master's course. He felt more tensed, as he believed that other classmates were better off than him in studies. He set high standards for himself regarding his work performance, especially with regard to the progress of his patients. He preferred not to spend any leisure time and pressurized himself to spend as much time studying. He would rush through all activities and would be hasty about his work. He felt tensed and anxious most of time and had significant physiological arousal. His past history was not significant. Personal history revealed that the client was prone to worry with regard to his studies. He was concerned with securing good grades and had excelled in academics. Premorbidly, the patient was reportedly anxious by nature and tended to hurry through any work, to ensure that he completed it on time. Mr. RA was referred for the management of his perfectionistic thinking and anxiety.

Case 4

Mr. D was a 23-year-old unmarried male, a graduate from an urban background, and employed. He presented with complaints of being tensed and anxious, getting 'butterflies in his stomach', worrying excessively, and having difficulty in communicating with others. He described himself as having always been shy. He began interacting with others only when he was in college. He had recently started working, after completing his graduation. He was placed in the marketing as well as accounts section, and was required to talk to and interact with his customers during which time he would experience anxiety. He would also begin to stammer or would feel his mind go blank. During his weekly presentations, he would feel anxious. Often he felt tongue-tied and stated that he was unable to speak. His fear was marked when he faced authority figures and generalized to friends or family members. He felt he was unable to explain himself clearly due to his anxiety. The patient also had several concerns over domestic issues, especially related his to eldest brother. The patient would be angered over his brother's behavior, but felt helpless, as his efforts at changing the behavior of his brother had been unsuccessful. He was referred with a diagnosis of Generalized Anxiety Disorder and Social Phobia, for further management.

Statistical analysis

Statistical analysis was carried out on the four patients. Clinically significant changes (50% and above) based on pre- and post-therapy data[48] were used to assess the efficacy of the therapeutic intervention.

Pre Score – Post Score x 100 = Therapeutic Change

Pre Score

Using this formula the percentage of change between pre- and post-therapy points was calculated.

RESULTS AND DISCUSSION

The aim of the present study was to evaluate the efficacy of Mindfulness-Based Cognitive Therapy (MBCT) in the management of anxiety disorder. The first objective of the study was to study the efficacy of MBCT in reducing the anxiety symptoms of patients with anxiety disorders. The pre and post intervention scores of clients who completed therapy are shown in Table 1. The analysis of the results for individual cases suggests that on HARS, an objective measure of anxiety, significant improvement was observed at the completion of intervention in all the clients. Analysis of group data for this measure also revealed that MBCBT was effective in bringing about statistically significant reduction in anxiety symptoms on the completion of

Table 1: Pre- and post-intervention assessment scores with improvement percentage for four clients who completed the therapy

Index case no.	HARS			CASQ			PSWQ			DAS		
	Pre	Post	IP	Pre	Post	IP	Pre	Post	IP	Pre	Post	IP
1	28	07	75*	41	31	24	54*	37	32	174	112	36
2	27	08	70*	48	33	28	58*	39	33	153	92	40
3	22	09	59*	49	34	31	51*	28	45	163	87	47
4	23	11	52*	37	25	32	47	33	30	172	110	36

IP - Improvement percentage (in %); *Clinically significant; HARS - Hamilton anxiety rating scale; CASQ - Cognitive and somatic anxiety scale; PSWQ - Penn state worry questionnaire; DAS - Dysfunctional attitude questionnaire

therapy. The cognitive–somatic symptoms of anxiety as measured on the CSAQ reduced significantly at post therapy assessment. The improvement between pre- and post-assessment was found to be clinically significant. These findings on HARS and CSAQ suggest that MBCT was effective in reducing both physiological / somatic symptoms, as well as cognitive symptoms of anxiety in patients with anxiety disorders. These findings are consistent with the previous research, wherein, mindfulness-based stress reduction intervention in the treatment of anxiety disorder resulted in clinically and statistically significant improvement.[2,12] Although relaxation is not the primary aim of mindfulness meditation, it does produce the benefits of relaxation through its focus on breathing. This is also supported by various studies that have demonstrated the effectiveness of MBCT on anxiety symptoms.[39]

The second and third objectives of the study were to examine the effectiveness of MBCT in the reduction of cognitive symptoms of anxiety, namely, worry and dysfunctional attitudes that contribute to and maintain anxiety. The individual case analyses suggest that there was consistent reduction in worry (PSWQ) and dysfunctional cognitions (DAS) with the progress of therapy, however, the improvement did not qualify for the criterion of significant clinical improvement (>50%). Post assessment, reduction in worry and dysfunctional cognition was clinically significant in comparison to the pre-assessment scores, for both the measures. Mindfulness is associated with developing an awareness of alternative perspectives and detaching from one's own habitual way of responding.[29] As such, it may have been an important element in altering the habitual patterns of worrisome responding. Mindful focus on the present moment experience provided an alternative response that may have facilitated adaptive responding.[36,37]

The modification of dysfunctional beliefs requires substantial time and this change takes place slowly.[2,12] The cognitive component of the treatment program results in significant change in dysfunctional cognitions. However, this change is not statistically significant and ranges from 36 – 47%. Alternative ways of coping with anxiety rather than merely reducing the maladaptive coping strategies are more likely to be effective in bringing about change.[49] In addition, anxiety disorder is characterized by an attentive bias to threat and a tendency to overestimate risk;[50] therefore, repeated focus on desirable outcomes may lead to a shift in the biased information processing, by making positive outcomes more evident and accessible. Borkovec (1999) hypothesized that a focus on desired action and choice is likely to decrease deficits in problem-solving and decision-making and increase the positive control of behaviors.[51] It is likely that if the therapeutic program had been longer, the changes in dysfunctional cognitions would have been more evident.

Mindfulness approaches that have been incorporated in several cognitive behavioral treatments for preventing relapse in depression[26] and substance abuse[52] and as part of a comprehensive treatment for borderline personality disorder,[33] have shown positive findings.

In conclusion, the findings of this case series indicate that MBCT can be an effective intervention in the management of anxiety disorders. The study has some significant implications. This is the first study to be carried out in India, which has adopted Mindfulness Meditation and Cognitive Therapy in the management of patients with anxiety disorder. Training in mindfulness meditation is cost-effective in terms of time and is applicable to a wide range of patients. All the clients who participated in the study were drug naïve. The significant reduction in anxiety symptoms that occurred in the patients following the intervention indicates that MBCT is an effective treatment method in the management of patients with anxiety disorder.

The small sample size is a significant limitation of the present study, as it does not allow for rigorous analysis of data and generalization of results. The inclusion of a control group would have strengthened the study. The absence of follow-up is another limitation, as it would provide information on the maintenance of treatment gains. Furthermore, the sample was heterogeneous with respect to diagnosis and a more homogenous sample would have been informative with regard to treatment.

Future research should be conducted with larger samples and follow-up to establish the efficacy of this program. The addition of a control group and a more homogenous sample would be helpful. The assessment of functioning and quality of life would further help in understanding the impact of the program on psychosocial outcomes.

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