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RESEARCH ARTICLE

A PILOT STUDY ON THE EFFECT OF BRIEF MINDFULNESS BASED COGNITIVE BEHAVIOUR THERAPY (MBCBT-B) IN INDIVIDUALS WITH RESIDUAL DEPRESSIVE SYMPTOMS

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ABSTRACT

Depression is a recurring and relapsing disorder of mind. Patients with depression suffer from varying levels of symptoms over considerable span amount of time. About 80% of individuals experiencing a single depressive episode go on to suffer multiple episodes during their lifetime. The current pilot study is an effort to study the effect of a Brief Mindfulness Based Cognitive Behaviour Therapy intervention on individuals with residual depressive symptoms. This pilot feasibility trial on effect of MBCBT-B was helpful in elucidating the usefulness of this third wave psychotherapy in reducing symptoms in residual depression. Since this study entailed a shorter spanned, intense therapeutic schedule which eventually proved effective in symptom reduction with a high statistical significance, a more scientifically robust evidence generation is planned. Promising response of patients in terms of acute stress and symptom reduction and observed increase in mindfulness was found to be a significant finding.

INTRODUCTION

Depression is a recurring and relapsing disorder of mind. It runs a protracted course in lifetime with patients suffering from varying levels of symptoms over considerable amount of time(1). One of the most crippling and upsetting aspects of depression is its tendency to recur. Up to 80% of individuals experiencing a single episode of depression go on to suffer multiple episodes during their lifetime(2). Approximately 55% of patients with major depressive disorder are shown to respond to treatment with administration of the first antidepressant medication(3). Individuals with residual symptoms are at much higher risk of relapse than those without the residual symptoms. It was found that 32% of patients had residual symptoms 12-15 months after the resolution of acute episode(4). It was also found that a significant percentage of patients with major depressive disorder are symptomatically unwell at any point in time over a 12 year follow up(5).

Many patients with major depressive disorder prefer psychotherapeutic interventions over pharmacological interventions, especially when they have to be continued for a prolonged period of time. All the participants in the current study were selected because theyexpressed their disinterest in taking medicines and because they either wanted to stop medicines or reduce dose of medicines. A survey of literature on mindfulness based interventions (MBIs) showed that mindfulness based interventions are effective in preventing relapse and in treating the subnormal states of depression.

Mindfulness Based Cognitive Therapy (MBCT)

MBCT was developed by Williams, Segal and Teasdale as a group intervention to be delivered over 8 weeks to the recovered depressed individuals to reduce the rates of recurrence(6). The MBCT program gives training to participants in a series of mindfulness skills, based on the techniques of meditation, stretching and postures, along with techniques from cognitive therapy. It has been showed that people who had experienced three or more episodes of depression and participated in an MBCT group had significantly reduced rates of relapse at 1 year follow up to compared to controls (37% vs. 66%)(7). Several authors have suggested that the effects of mindfulness in depression is mediated by a reduction in levels of rumination which has been shown to be an important cognitive vulnerability factor in recurrent depression (6,8,9).

The present study uses brief version of a structured program named Mindfulness Based Cognitive Behaviour Therapy (MBCBT-B), which was designed based on the mindfulness based stress management program named Mindful Life Management (MLM) and MBCT. S as the programme for children. Both runs on the same chord of mindfulness of body,

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thoughts, and emotions. But the delivery is on an age adapted way

Mindful Life Management (MLM)

MLM is an experiential educational stress management program developed by the Holistic and Psychosomatic Clinic of the Department of Psychiatry, Government Medical College, Thiruvananthapuram in 2009. The major components of MLM include mindfulness meditations, mindful yoga, mindful movements, life skills awareness and psycho-education on stress. The program has been functioning in the Department of Psychiatry since the past 8 years. The program is offered as two-day workshop and as eight-week program with one 2.5 hours session every week on a fixed day. The participants are encouraged to spend a minimum of 30 - 45 minutes per day at home for self-practice. The package can be useful for children and adolescents with minor changes in the time duration. For younger children, weekly sessions are of 60- 90 mts duration and the daily practice sessions are of 5 - 10 minutes duration. A pilot study to know the perceptions of teachers to mindfulness through Mindful Life Management, a stress management program developed by the Holistic and Psychosomatic Clinic of the Department of Psychiatry, Government Medical College, Thiruvananthapuram showed that MLM could be used as a tool for enhancing focus and attention and also for enabling better emotional regulation among teachers, parents and students(10). A pilot study of changes in perceived stress following an 8 week MLM program showed statistically significant reduction in the stress score and an increase in mindfulness score(11).

Mindfulness Based Cognitive Behaviour Therapy (MBCBT)

Mindfulness Based Cognitive Behaviour Therapy (MBCBT) programme was designed by the Holistic and Psychosomatic Clinic of the Department of Psychiatry, Government Medical College, Thiruvananthapuram. The original MBCBT program included 10 weekly sessions, each of 2 ½ hours duration. This includes a preliminary session establishing contact with the patients and their significant others and a follow-up session held 1 month after the intervention, which includes the post assessment. The program was carried out by two therapists- one from the Department of Psychiatry, Government Medical College, Thiruvananthapuram and another a psychologist who worked voluntarily for the project. The 10 week program adhered to the session structure as described in the brief training manual. The initial sessions teach participants to shift from 'doing' to being mode , which is achieved by training them to develop mindfulness via formal mindfulness meditation practice, body scanning techniques and mindful movement training. In the later stages the practice instructions are repeated and the methods to identify and deal with negative emotions and thoughts are included.

Brief Mindfulness Based Cognitive Behaviour Therapy (MBCBT-B)

MBCBT-B is a brief version of Mindfulness Based Cognitive Behaviour Therapy which can be completed in 4 weeks with one 45-90 minute session per week. The main components of MBCBT-B include mindfulness meditations, informal mindfulness techniques, mindful movements and short interactive discussions about stress, depression, anxiety, automatic pilot and cognitive distortions. A preassessment interview of about 60 minutes is done prior to the week 1 session of MBCBT-B.

Table 1 shows the components and structure of the MBCBT-B Program.

Table 1 Week-wise Components of the MBCBT-B Program

Week ➔	**1**	**2**	**3**	**4**
Duration	45-90 minutes	45-90 minutes	45-90 minutes	45-90 minutes
Theme	Introduction to Mindfulness; Doing and being modes; Automatic Pilot, Mindfulness of breath, sound and touch	Mindfulness of thoughts; Dealing with Barriers	Mindfulness of Emotions	Mindfulness in day to day activities
Exercises	Mindfulness of breath, mindful movements; mindful eating mindful walking Short mindfulness meditation (5 -7 minutes)	Mindful movements, body scan meditation; Long guided mindfulness meditation (20) minutes	Mindful postures Mindful movements RAIN technique Long mindfulness meditation (unguided)	3 minute breathing space; Mindful movements; Unguided Mindfulness meditation.

The post assessment is done 1 month after the 4th session of MBCBT-B.

An important aspect of MBCBT-B program was that the sessions could be delivered to the participants in one to one sessions or in groups of 2-3 subjects within the constraints of the outpatient wing itself. It was designed in such a way so that it could be delivered by mental health professionals within the limited space of their consultation rooms.

METHODOLOGY

This pilot study aimed to the find the effect of MBCBT- B, a brief 4 week Mindfulness Based Cognitive Behaviour Therapy (MBCBT-B) program in improving the symptoms of depression in individuals with depressive disorder in partial remission. The hypothesis of the study was that the 4 week's brief MBCBT-B program will result in amelioration of the depressive symptoms experienced by the patients at the end of 1 month following a 4 week program. 23 patients were selected for this initial feasibility study after informing that the current project is an experimental one to study the effect of a newly developed program for depressive symptoms. A total of 14 patients who were willing to be part of the study, were included in the study.Nine subjects were excluded from the study for the following reasons.

Table 2 Reason for exclusion of subjects

Number of Subjects	**Reason for exclusion**
3	Patient / Relative was not interested
2	Didn't agree for the home practice schedule
2	Dose of medicines had to be increased because of development of depressive symptoms after the first session.
2	Dropped out after 2 sessions

Participants were aged between 20 and 65 years of age with the following diagnoses.

1. Major depressive disorder, in partial remission

2. Recurrent depressive disorder, now in partial remission with a current PHQ score of between 5 (mild depression) and 19 (moderately severe depression).

Exclusion criteria were a diagnosis of mental retardation, substance use disorder, differential diagnosis or comorbid diagnosis of any major psychiatric illness like schizophrenia. All patients were at optimal doses of antidepressants. No patient was on any antipsychotic drugs or mood stabilizers. 6 of the subjects stopped the benzodiazepines at their own will during the study. 5 of the other 8 subjects continued benzodiazepines which they were getting earlier. No change in the medical treatment was made in any of the subjects in the group during the period of study. Two patients in whom changes in medicines had to be done were excluded from the final analysis, but they continued to be part of the sessions at their own interest.

5 of the patients had a history of suicide attempts in the past and 2 had recurrent suicidal ideations. Suicidal ideations, gestures, and thoughts were assessed verbally and by behavioural observation during the entire course of the study. Family members were asked to monitor and report the same.

The main tools used for the study were a semi-structured proforma for collecting socio-demographic data, Patient Health Questionnaire-9 (PHQ-9), Perceived Stress Scale Score (PSS) and Mindful Attention Awareness Scale (MAAS). PHQ-9, PSS and MAAS were done during the preassessment phase and as a part of post assessment one month after the session of the fourth week.

RESULTS

The data were analysed using frequency and paired t test. The sociodemographic pattern of the participants is shown in the table 3. There were a total of 14 participants in this pilot study. 50% (n=7) were males and 50% (n=7) were females. 85.7% (n=12) were married. 64% (n=9) had education above SSLC. 78.6% (n=11) were employed. 78.6% (n=11) had a diagnosis of major depressive disorder and 21.4% (n=3) had a diagnosis of recurrent depressive disorder. The mean duration from the first day of the previous episode of major depressive disorder was 10 months.

Table 3 Sociodemographic data of the study participants

Characteristic	Number
Participants	Total = 14 Male = 7 Female = 7
Marital Status	Married = 12 Unmarried = 1 Widow = 1
Education	Postgraduates = 3 Degree = 3 SSLC = 5 Plus two / Predegree = 3
Occupation	Professionals = 3 Clerk = 4 Business = 4 Housewife = 3
Diagnosis	MDD = 11 RDD = 3
Mean duration from the first day of previous episode of major depressive disorder	10 months (SD=3.96)

Table 4 shows the mean and standard deviation in the PHQ before and after the intervention. The table shows that difference in mean and standard deviation before and after intervention. It is seen that the mean score plunges down to nearly half the pretest score in post- test assessment.

Table 4 Mean and standard deviation in PHQ before and after intervention (n=14)

	Mean	Std. Deviation	Std. Error
PHQ-Pre	15.36	1.823	.487
PHQ-Post	8.43	1.342	.359

Figure 1 illustrates the changes in self -reported symptoms of the subjects after MBCBT-B training for 8 weeks. Those subjects who scored highest in PHQ expressed a decrease in post intervention assessment by more than 8.

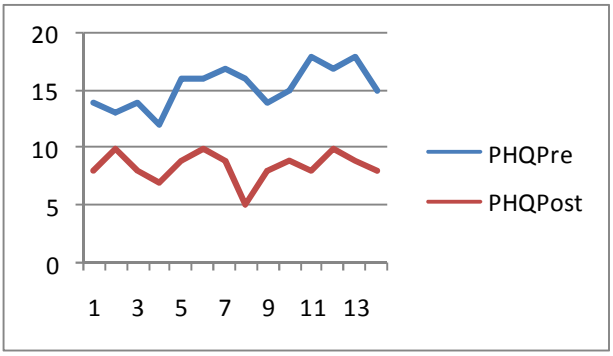

Fig 1 Scores obtained in Patient Health Questionnaire before and after MBCBT-B (n=14)

Table 5 shows the Mean and Standard Deviation obtained in Perceived Stress Scale. The table below clearly describes the difference in the mean score of PSS across the subjects before and after MBCBT intervention. The post intervention mean score is less than pre- intervention mean score by more than 50%.

Table 5 Mean and Standard deviation in PSS (n=14)

	Mean	Std. Deviation	Std. Error
PSS-Pre	29.21	4.526	1.210
PSS-Post	14.43	3.631	.971

Fig. 2 shows the scores obtained in the Perceived Stress Scale before and after the MBCBT-B intervention. The graph depicts the changes in Perceived Stress Scale score before and after intervention. Majority of the subjects experienced a sharp reduction in perceived stress as evidenced by a diminished PSS score by more than 10 points.

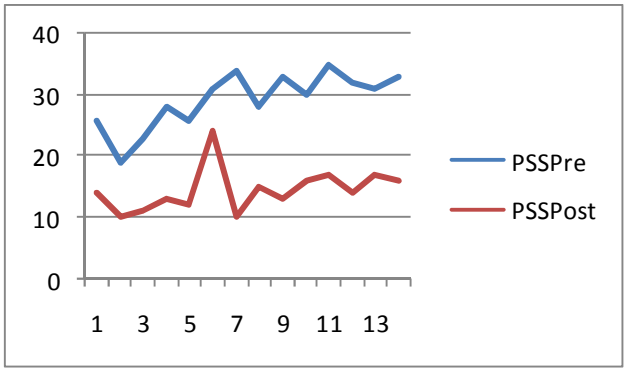

Fig 2 Scores obtained in Perceived Stress Scale before and after MBCBT (n=14)

Table 6 shows the results from paired samples test and shows the differences in PHQ, PSS and MAAS between pre and post test. This vividly throws light on the statistical significance of each score at a p value less than .000. All the t scores show a very high significance. Equality of variance tested using Levene's test strengthens the alternate hypothesis.

Table 6 Mean and Standard Deviation in MAAS (n=14)

	Mean	Std. Deviation	Std.Error
MAAS-Pre	2.343	.550	.147
MAAS-Post	4.384	.453	.121

Fig 3 shows the Scores obtained in MAAS before and after the MBCBT-B intervention. The picture self-explains the increase in mindful attention and awareness amongst study subjects after MBCBT. Every subject shows an increase in level of mindfulness.

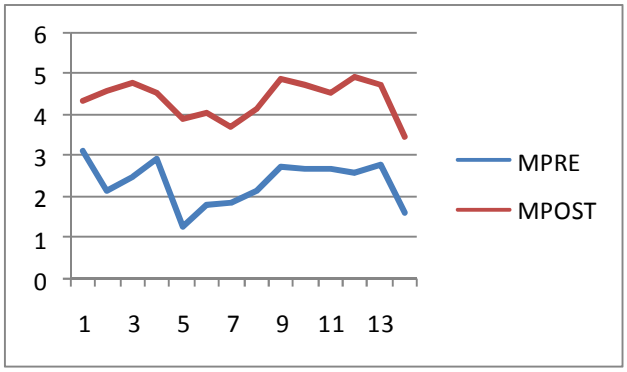

Fig 3 Scores obtained in Mindful Attention Awareness Scale before and after intervention (n=14)

Table 6 showsthe mean and standard deviation in MAAS before and after the MBCBT intervention. It shows that heightening of level of mindfulness post MBCBT. The mindfulness score has almost doubled after intervention.

Table 6 Paired samples test

	Paired Difference		t	Df	Sig- 2 tailed
	95% confidence interval				
	Lower	Upper			
PHQ pre- post	5.742	8.115	12.612	13	.000
PSS pre- post	12.242	17.330	12.557	13	.000
MMAS pre- post	-2.2567146	-1.8261245	-20.485	13	.000

It is very evident that as the scores of mindfulness increased, acute stress and subjective symptoms associated with depression decreased. A statistically significant or proportionate difference among the test values could not portrayed in this study since the sample size was inadequate to reach a more generalizable result. But the alternate hypothesis that MBCBT- B will reduce the symptoms of depression and acute stress stays valid. An analysis based on other variables like age, marital status, diagnosis etc could not be carried out because of the limited sample size.

DISCUSSION

We aim to discuss the major findings of the feasibility trial we conducted in conjunction with few other similar studies which employed MBIs. In the present study, every study subject showed significant reduction in depressive signs and symptoms. A similar study conducted at NIMHANS which was published in 2013 gave a similar result. The study participants expressed clinically significant improvement on depression, work and social adjustment and Quality of Life (12). The NIMHANS study examined the effectiveness of mindfulness based cognitive therapy in 5 patients with depression using a single case design with pre and post assessments. The duration of intervention was 8 weeks. MBCBT-B was a 4 week intervention with outcome measured at the end of 1 months from the last training session.

Perceived stress is major confounder in progressing towards a symptom managed life in depression. Therefore we intended to know the changes in perceived stress after MBCBT- B. The study proved that MBCBT- B produced statistically significant reduction in perceived stress as measured with PSS. A review on empirical studies on effect of mindfulness on psychological health which systematically analysed mindfulness based interventions expressed that MBIs were effective in bringing down the perceived stress (13). The now conducted single group pre and posttest trial very lucidly proved a significantly improved state of mindfulness and subsequently improving symptom and stress levels. Mindfulness-Based Cognitive Therapy to prevent relapse in recurrent depression in a parallel 2-group randomized controlled trial gave a result quite akin to our study outcome. In that study too, a reduction of residual depressive symptoms and psychiatric comorbidity and heightened quality of life in the physical and psychological domains was observed (14). A preliminary feasibility study conducted by our team which employed Mindful Life Management, a stress management programme based on mindfulness, in reducing stress of general population also showcased a similar outcome. There was a statistically significant reduction in perceived stress after MLM as an intervention (11).

Since the study held a major limitation by its sample size, a more generalizable result could not be generated. The methodological delimitation by a relatively shorter span in obtaining post test result has essentially blinded us from evaluating a long term effect of MBCBT- B. However, the present pilot study was effective in enlightening upon the use of mindfulness based interventions in managing depression. The authors feel that from this preliminary study. it could be suggested that MBCBT- B may be efficacious in treating recurrent depressive episodes and interepisode symptoms in people with other forms of depressive disorders.

CONCLUSION

The feasibility trial on effect of MBCBT-B was helpful in elucidating the usefulness of this third wave psychotherapy in reducing symptoms in residual depression. Since this study entailed a shorter spanned, intense therapeutic schedule which eventually proved effective in symptom reduction with a high statistical significance, a more scientifically robust evidence generation is planned. The most important outcome of the study was the promising response of patients in terms of acute stress and symptom reduction whilst an observed increase in mindfulness. This outcome needs further ratification through an RCT.

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