

Abstract

Background:

Research on Mindfulness-Based Stress Reduction (MBSR) has supported the utility of the technique in a number of clinical settings. This study explored whether MBSR, used as an adjunct to individual psychotherapy, would result in more rapid alleviation of symptoms, increased achievement of therapeutic goals, and a decrease in number of therapy sessions sought by clients.

Methods:

A group undergoing psychotherapy coupled with training in MBSR was compared with a group undergoing psychotherapy alone.

Results:

At the conclusion of MBSR training, the groups showed a comparable significant decrease in psychological distress. However, the MBSR group's gains on a novel measure of goal achievement was significantly greater than those of the comparison group. In addition, the MBSR group terminated therapy at a significantly greater rate than the comparison group.

Recommendations:

The effects of introducing MBSR early in psychotherapy, as well as its effect on self-directed goal attainment in non-psychotherapy contexts, deserve further attention.

Mindfulness-Based Stress Reduction (MBSR) is an intensive, structured, client-centered educational approach to mindfulness meditation, adapted by Jon Kabat-Zinn from the Buddhist meditation practice known as Insight or Vipassana [1].

MBSR has been used successfully in a range of settings, clinical [2, 3] and non-clinical including hospitals [4, 5, 6] and colleges [7]. It has been used as an adjunct in the treatment of conditions as diverse as psoriasis [8] and cancer [9]. Kabat-Zinn and colleagues have explored the effectiveness of MBSR in the treatment of anxiety disorders [10, 11] and chronic pain [12, 13].

Training in MBSR or in skills of mindfulness has been incorporated into various short-term [14] and long-term psychotherapy regimens [15, 16]. Training in skills of mindfulness has been incorporated into a number of cognitive-behavioral psychotherapy regimens and discussed theoretically, such as Dialectical Behavior Therapy (DBT) to treat Borderline Personality Disorder [17, 18], Acceptance and Commitment Therapy (ACT) [19, 20], and Relapse Prevention Therapy for substance abuse [21]. MBSR, on the other hand, is a mainstay of Mindfulness-Based Cognitive Therapy (MBCT), which has demonstrated efficacy in the prevention of depressive relapse [22, 23]. With some exceptions [9, 22, 23], these studies as a group are subject to criticism on methodological grounds, such as lack of adequate controls [24].

The purpose of the current study is to add to the discussion about the utility of mindfulness meditation as an adjunct to psychotherapy. The progress of clients undergoing individual psychotherapy alone was compared with that of clients who opted to learn MBSR as a part of their psychotherapy. All clients were in treatment with the same therapist, whose primary therapeutic method involved the use of systemic family therapy with individuals, with selective borrowing from object relations theory and self psychology [25]. The exploration of differences, if any, between clients who chose to add MBSR to their psychotherapy versus those who chose to undergo psychotherapy alone was also of interest. All clients were assessed at the beginning and end of the intervention period using a standard measure of psychological functioning as well as a novel outcome measure consisting of a subjective goal attainment scale. In addition, the number of therapy sessions sought by clients before and after the intervention was measured. It was hypothesized that clients whose treatment regimen included MBSR would show less psychological distress and greater progress toward goal attainment at the end of the intervention period than clients undergoing psychotherapy alone. It was also expected that clients learning MBSR would seek fewer therapy sessions following the intervention and/or terminate therapy at a greater rate than the comparison group.

Method

Participants

Participants were drawn from the psychotherapy practice of the senior author, who had completed the most advanced training in MBSR, taught by Jon Kabat-Zinn, Saki Santorelli, and other senior faculty from the Stress Reduction Clinic at the University of Massachusetts Medical Center [26]. Thirty-one clients of specified DSM-IV diagnoses (depression and anxiety disorders) were asked to participate in the study. Fifteen of these opted to learn MBSR, while the remaining 16 participants continued routine psychotherapy as the comparison group. Several participants (three in the MBSR group and one in the PO group) were being treated with psychotropic medication (SSRIs). In all cases this treatment had been initiated at least six months prior to the study period. Overall the two groups were well matched on age and marital status (Table 1).

Procedure

Clients who agreed to participate in the study chose either to devote a portion of the one-hour psychotherapy sessions to learning MBSR, or to continue with standard psychotherapy. The MBSR group underwent eight, one-hour individual sessions, the first and last devoted entirely to MBSR training, and the intervening six sessions evenly divided between routine therapy and MBSR training. Sessions were approximately one week apart; training was completed within 12 weeks. During sessions, clients learned the techniques of MBSR, practiced MBSR and provided feedback to the therapist about their experiences. The therapist underscored positive experiences reported by clients, helped clients to develop strategies for difficulties encountered during practice, introduced ideological themes associated with mindfulness meditation (e.g., the transitory nature of all phenomena) and, when appropriate, linked insights or difficulties that arose during meditation to therapeutic issues. Additionally, participants committed to practice MBSR for a half-hour daily, six days weekly, and were provided with meditation tapes created by Jon Kabat-Zinn for use at home in order to structure and reinforce in-session training. Participants in the psychotherapy-only (PO) group met with the therapist approximately once a week for a one-hour session of routine individual therapy.

Measures

Therapeutic gain was assessed by means of the Global Severity Index (GSI) of the Symptom Checklist-90-R (SCL-90-R) [27] completed by all participants one week prior to the first study session and at the completion of the study period. At the beginning of

the study, participants were asked to specify an important goal of therapy, rating themselves on a 100-point scale indicating distance from their goal. At the end of the study, clients were reminded of their self-identified goals and asked to assess their current status on the same scale.

Psychotherapeutic gains were quantified by comparing the number of therapy sessions sought by clients before and after the study period, expressed in terms of weekly session rate for the intervals two months prior to the intervention and six months afterward. Rate of termination of therapy was also tracked for the two groups. Fewer sessions sought was presumed to reflect an improvement in functioning, as was a client's decision to terminate therapy altogether. A follow-up questionnaire was mailed to the MBSR group to check their commitment to the continued practice of meditation six months after the intervention, as well as their thoughts about its impacts.

Results

Participants

The groups were well matched in total number of therapy sessions prior to the intervention ($t(1,29) = 1.26, P = 0.22$, two-tailed.) and in pre-intervention session rate ($t(1,29) = 1.49, P = 0.15$, two-tailed.). The groups were similar on all baseline measures, however, they did differ on the goal measure, with the MBSR group reporting a significantly greater distance from goal attainment than the PO group ($t(1,29) = 3.26, P < 0.01$, two-tailed.). These findings are summarized in Table 1 as are pre- and post-treatment scores for each measure.

Global Severity Index

There was a significant decrease in psychological distress shown, $F(1,29)=27.15, P<0.0001$ for both groups. There was no significant main effect of group ($P=0.193$), nor was the interaction of time and group significant ($P=0.204$). When baseline scores were treated as a covariate to control for the tendency to report greater distress of the MBSR group at the beginning of the training period, no significant group differences emerged ($P=0.833$) (See Table 2).

Goal Scores

Participants in the MBSR group tended to rate themselves more negatively than did the PO group prior to MBSR training. There was no main effect of group ($P= 0.791$), but there

was a significant main effect of measurement period, $F(1, 29) = 43.91, P < 0.0001$. There was also a significant interaction of group and measurement period, $F(1, 29) = 18.02, P = 0.0002$. Tukey-adjusted post-hoc contrasts showed a significant difference in the two groups' initial goal scores ($P = 0.014$), as well as in their post-intervention scores ($P = 0.037$). When the data were analyzed with baseline goal score treated as a covariate, there was a significant difference between the two groups, $F(1, 28) = 8.04, P = 0.008$, the group that received MBSR training showing a significantly greater improvement on this measure than did the PO group (See Table 2).

Session Rate

Participants' session rates for the two months prior to the intervention period and six months post-intervention are depicted in Table 2 as the weekly average. There was a significant main effect of measurement period, with session rate lower six months after the end of the intervention period, $F(1, 29) = 44.26, P < 0.0001$. There was no main effect of group, however ($P = 0.129$), nor was there a significant interaction of group and measurement period ($P = 0.792$). When baseline rate was treated as a covariate, no significant differences between the two groups emerged ($P = 0.33$) (See Table 2).

Termination of Therapy

Seven MBSR participants (47%) terminated their treatment within six months following the intervention, whereas only one PO participant (6%) did so. This difference was significant by Fisher's exact test, $P = 0.016$.

Follow-up Questionnaire

Eleven of 15 MBSR participants returned the six-month follow-up questionnaire designed to assess continuation of meditation and its impact. Responses uniformly indicated a strong positive effect. Every participant indicated that s/he was still meditating, and found meditation a skill of lasting value. Participants assessed the importance of meditation in their lives on a scale of 1 to 10 (least to most important); the average rating was 9.1 ($SD = .94$). Changes in participants' activity levels, energy levels, and coping ability were assessed on scales ranging from 1 (worse than before the intervention) to 5 (great improvement). Mean responses to these items were 3.4 ($SD = 1.2$), 4 ($SD = .93$), and 4.6 ($SD = .5$), respectively. Finally, items assessing overall improvement in attitudes and behaviors on a scale of 1 to 4 (no improvement to most improved) showed mean improvement as averaged across all items was 3.3 ($SD = .38$).

Discussion

The results highlight the value of MBSR training for clients treated in individual psychotherapy for symptoms of depression and anxiety. Both MBSR and PO groups showed significant improvement on all measures at the end of the intervention period. The MBSR group, however, showed significantly greater gains on goal achievement measure, and a higher rate of termination of therapy. The differences suggest that, in addition to helping reduce psychological distress, MBSR may increase practitioners' sense of agency and self-directedness. A higher termination rate among clients who chose to learn MBSR may indicate that they acquired, in a brief period, a technique that continued to be useful in the absence of continued formal instruction or psychotherapy. Participant's responses to the follow-up questionnaire support this interpretation. They also reported lasting improvements in activity and energy levels, as well as coping abilities, and all had maintained meditation practice. Terminating patients who later failed to return their questionnaires (n=4) had reported in the exit interview with the therapist, that they were pleased with the outcome of their therapy and were terminating because they felt better and no longer required therapy. Other studies suggest that mindfulness meditation can confer long-term beneficial effects (22,28,29).

In this interpretation, the educational component of MBSR becomes an important part of a therapy regimen. Segal et al [30] suggest that in Mindfulness-Based Cognitive Therapy (MBCT) the therapist may function more as instructor than as therapist in the traditional sense, teaching clients a new way of relating to their experience, rather than helping them solely to " 'untie the knots' of their thinking and feeling...[and] staying with a problem until it was resolved." (p. 59). The possibility of an educational function of a therapist in using MBSR in the context of psychotherapy is worth considering.

While the design of the present study incorporated a comparison group, unlike many studies of the effects of MBSR, the constraints of the context, a private psychotherapy practice with individuals, did not permit random assignment to treatment group. This technical shortcoming engenders interesting questions. For example, why did some clients choose to learn MBSR along with their therapy and others choose the psychotherapy-only (PO) condition. One possibility is suggested by the differences noted between the groups at the beginning of the study, particularly that goal achievement scores were significantly lower for the MBSR group. These clients experienced themselves as further away from their self-selected goals than did the PO group.

That all clients of specified diagnostic criteria were drawn from the senior author's

private psychotherapy practice may be viewed as a conflict of interest. However, this may also be viewed as a strength of the study. That is, the elimination of the possibly confounding variable of multiple therapists.

Another question raised by the present study concerns the timing of the introduction of MBSR into the psychotherapeutic regimen. While there was considerable variability within groups in the total number of therapy sessions prior to the beginning of the study, the median number of prior sessions sought was similar for both groups, and relatively high. It is possible that earlier introduction of MBSR into the psychotherapeutic process might increase its impact.

In conclusion, the present study supports the utility of MBSR as an adjunct to more traditional psychotherapy, and suggests that one of its effects is to enhance practitioners' sense of agency and self-directedness in a durable manner. Future research might attempt to corroborate and extend these findings using other measures of these attributes and further exploring related constructs. Investigation of the issue of goal attainment in other MBSR training contexts, as well as introducing MBSR earlier in the process may be profitable as well.

**TABLE 1
DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANT GROUPS**

Participant Characteristics	Group			
	MBSR(a)		PO(B)	
	(Percent)	(Number)	(Percent)	(Number)
Age				
M (SD)	41	(11.9)	44.6	(14.1)
Mdn (Range)	41	(22-61)	41.5	(26-75)
Gender				
(% female)	73	(11)	50	(8)
Marital Status				
Single	27	(4)	25	(4)
Married	67	(10)	63	(10)
Divorced	7	(1)	0	(0)
Cohabiting	27	(4)	7	(1)
Widowed	0	(0)	7	(1)
Education				
Graduate school	67	(10)	38	(6)
College	53	(8)	50	(8)
High school	7	(1)	7	(1)
Diagnosis				
Primarily depression	67	(10)	69	(11)
Primarily anxiety	80	(12)	44	(7)

Note: an = 15. bn = 16.

TABLE 2
SUMMARY OF SCORES ON OUTCOME MEASURES FOR MBSR AND PSYCHOTHERAPY-ONLY (PO) GROUPS, PLUS BASELINE COMPARISON OF PARTICIPANT GROUPS ON GSI, GOAL SCALE AND SESSION RATE MEASURES.

Measure	MBSR				PO			
	Pre-intervention		Post-intervention		Pre-intervention		Post-intervention	
	M	SD	M	SD	M	SD	M	SD
GSI	0.64	0.34	0.33	0.20	0.46	0.35	0.27	0.23
Goal Scale	25.8 a*	13.7a	68.8b	16.2b	44.1a*	17.7a	53.5b	26.2b
Session Rate	0.64d	0.24d	0.42 c	0.24 c	0.53d	0.25d	0.29 c	0.21c
Termination Rate(e)	47%				6%			

Note: Higher scores on the GSI indicate greater psychological distress; higher Goal Scale scores indicate greater progress in reaching a primary therapeutic goal.

a Assessments carried out upon entering into study.

b Post-intervention assessment carried out at end of 8-week training period.

c Post-intervention weekly session rate calculated at 6 months.

d Weekly session rate calculated for 2 months preceding study period.

e Percentage of patients who terminated within 6 months post-intervention. (P= 0.016, Fisher exact test.)

* Baseline difference was significant, $t(1,29) = 3.29, P < 0.01$

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