Mindfulness-Based Wellness: A Pilot Project on a University Campus

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ABSTRACT: A semester-long program for students, faculty, and staff at a small university combined Mindfulness-Based Stress Reduction with values-based behavior activation. Participants showed significantly improved scores on measures of: depression, anxiety, attention, overall psychological discomfort, psychological/emotional sensitivity, impulsivity, attentional deficits, mindfulness, and overall quality of life.

INTRODUCTION:

We live in a fast-paced, high-stress world. It is often reported that, overall within our time and culture, our capacity to pay attention is diminishing, while our blood pressure, cholesterol levels, and waistlines are rising. Addictions and other compulsive behaviors are rampant… Diseases that are largely preventable by lifestyle changes are not being prevented. It has been speculated that our young people could be characterized as a "sick herd" that threatens to overwhelm our health care system, as they mature and age.

On our small Midwestern university campus, our students are mostly first-generation college students; many of our full-time students, both undergraduate and graduate, hold down jobs, either on- or off-campus. Teaching load for professors is relatively heavy, and salaries are relatively low, as are typical in small, private, religious-affiliated universities. University administration and staff personnel are comparably stressed, in terms of long hours and relatively low pay.

Can we create a culture within which the members of our community learn to embody wellness in mind, body, and spirit? And, in so doing, can we be the impetus for a ripple effect that spreads outward from our small campus to the larger society that is impacted by our students, faculty, and staff members, as they come into contact with their family, friends, neighbors… with those whom our students will teach, mentor, coach, minister to, and treat?

- Stress: A major problem
- Wellness: A major challenge
- MBSR: Much evidence supports its effectiveness

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- Values-based behavioral activation: can be effectively paired with mindfulness training

METHOD:

Participants: We solicited volunteers from university faculty, staff, and students. Solicitation was accomplished by campus-wide emails, and via announcements at university staff/faculty meetings. We had an initial pool of 45 volunteers, which we divided into the Fall Group (n = 24) and the Spring Group (n = 21). Assignment into groups was done randomly, insofar as possible; however, 4 people were placed into the Fall Group directly, because their schedules would not have permitted them to participate in the program during Spring Semester, '08. The Spring Group served as a wait-list control group, and completed all the measures, along with the Fall Group and at the same times as the Fall Group. It was intended that the control group would experience an equivalent intervention during Spring Semester 2008.

Members of the Fall Group and the Control Group did not significantly differ on any variables except overall Quality of Life; members of the Fall Group scored significantly lower on the QOLI (Fall Group mean = 44; Control Group mean = 51; t = -2.4, sig = .020).

Mean age for the Fall Group was 43 (SD = 13); Mean age for the control group was also 43 (SD = 9). Most members of both groups were female (6 men in the Fall Group; 3 men in the control group). Most members of both groups were faculty or staff members, and many were also full- or part-time students.

Measures:

We used the following instruments:

- The Mindful Attention Awareness Scale (MAAS):
- Five-Factor Personality Assessment (NEO-PI-R):
- The Meaning in Life Questionnaire (MLQ):
- The Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI is a reliable instrument frequently used in clinical and research settings. It yields 10 subscales measuring various types of psychological symptoms, including "Anxiety" and "Depression" scales, and a composite scale labeled the "Global Severity Index."
- Connors Adult Attention Rating Scales (CAARS)
- The Quality of Life Inventory (QOLI):

- Self-Compassion Scale (Neff 2003): Shapiro: “The scale is designed to measure three components of self-compassion on separate subscales: Self-Kindness Versus Self-Judgment,
  Common Humanity Versus Isolation, and Mindfulness Versus Overidentification. This scale has been shown to be psychometrically sound (Neff, 2003).“
- Personal Growth (PGIS):
- Trails A & B:

We administered three additional written questionnaires: a demographic questionnaire given to all participants, including the control group, and two surveys (one given to the intervention group at mid-point, and another at the post-intervention data collection point). These two surveys served to assist in gathering information about the participants’ progress, and their responses to the program and its components. In the post-intervention questionnaire, participants were asked to rate the “helpfulness” of various components of the program in “meeting their wellness goals.” Ratings were made on a four-point scale (4 = “very helpful”; 1 = “not very helpful”).

We also measured the following biometric variables:

Weight
Height
Body Mass Index (a simple function of weight and height)
Blood Pressure
Body Fat (using electronic calipers)

Interventions:

This program was modeled on the Mindfulness-Based Stress Reduction (MBSR) program developed by Jon Kabat-Zinn, nearly 30 years ago. Five significant differences between our program and the traditional MBSR program were:

1. Our program met weekly, for one hour and fifteen minutes each week, over the course of a traditional university semester (12 class sessions). The first author of this paper was the primary instructor; the second author contributed information about journaling.
2. We explicitly addressed goals and the attainment of goals in our program. We were specifically focused on “wellness”-related goals (including mental, physical, and spiritual wellness goals).
3. We did no pre-screening or orientation, and employed no exclusionary criteria.
4. We adopted an “invitation” instead of an “expectation” stance toward homework assignments, including the assignment of daily mindfulness practice.

5. Hatha Yoga was not taught in the weekly classes, but was taught by a highly experienced yoga instructor in a separate weekly class session, available to the entire university community. Classes in Tai Chi and in Zumba were also offered to the entire campus.

Our curriculum included:

- What is mindfulness?
- Formal mindfulness practice
- Informal mindfulness practice
- The nature of thoughts, feelings, emotions, sensations, memories, and impulses
- Stress and its impact on the body
- Attention and the enhancement of attention skills
- Exploration and Identification of Values
- Effective Goal-Setting
- Self-Compassion
- Meditation, Spirituality, and Contemplative Practices

Hypotheses:

We hypothesized that the intervention group would show *increases* in the following variables:

- Mindfulness (MAAS)
- Quality of Life (QOLI)
- Self-Compassion
- Meaning in Life (Presence of Meaning, and Search For Meaning; MLQ);
- Personal Growth (PGIS)

We hypothesized that, in the intervention group, the following variables would show *decreases*:

- Attentional deficits (CAARS)
- Depression (BSI and NEO)
- Anxiety (BSI and NEO)
- Overall painful psychological symptoms (BSI)
- Neuroticism (NEO)
- Impulsiveness (NEO)
- Body Mass Index
- Blood Pressure
- Body Fat %

RESULTS:

Out of 24 people who began the program in the Fall Group, 20 were classified as "completers," based on their having completed all pre- and post-intervention assessments. The four who did not complete the post-intervention assessments were classified as "non-completers." Non-completion (or drop-out) rate was 17%. All four non-completers were female. As compared to completers, the group of non-completers had a significantly lower mean score on the QOLI and a significantly higher mean score on the measure of attentional deficits; they did not significantly differ from completers on other pre-intervention scores. Completers attended an average of 8.6 out of 12 class sessions; non-completers attended an average of 4.8 class sessions.

Demographic data for the 20 participants: 14 were female; average age was 43 (range = 21-63); 9 were either full or part-time students.

A series of t-tests indicates that the treatment group made significant changes in the hypothesized directions in many of our targeted variables. In contrast, the control group showed no significant changes in any of the targeted variables.

FALL '07 MBW PARTICIPANTS

	Pre	Post	Significance Level
MAAS Mindfulness	3.75	4.43	.006
Quality of Life	45.8	52.1	.018
CAARS ADHD	50.1	44.8	.012
BSI Anxiety	56.9	50.5	.012
BSI Global Severity	57.7	50.3	.011
Self-Compassion	3.3	3.76	.039
NEO Neuroticism	53.0	45.3	.025
N1 Anxiety	55.4	48	.022
N3 Depression	52.5	45.8	.026
N5 Impulsivity	55.6	47.5	.019

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Body Fat %	31.3	23.9	.001
BP Systolic	139	130.1	.023
Personal Growth	4.2	4.80	[appr sig] .07
BSI Depression	53.1	48.3	[appr sig] .089
BP Diastolic	83	82.7	[not significant]
Trails B	65.9	63.1	[not significant]
Weight	187.2	186.1	[not significant]
MLQ Presence	26.5	28.9	[ns] .19
MLQ Search	20.2	17.8	[not significant]
5F Wel	??	??	

There were no group differences on multivariate analyses.

Biometric measures: Most participants in both groups had BMI's greater than or equal to 25. There were no significant mean changes in BMI in either group. There was an apparent significant reduction in body fat, and in systolic blood pressure, in the treatment group (and not in the control group); post hoc analysis of the instrumentation suggested that the accuracy of these measures may have been adversely affected by changes in personnel using the equipment.

One purpose of the post-intervention questionnaire was to gauge the responses of the participants as to how helpful (or not) they had found various of the program components. It was apparent that (although none of the components received a very low score) the class sessions, yoga (this was an optional class regularly attended by 12 of the participants), and mindfulness practice were the components judged most helpful.

Helpfulness Questionnaire Results:

(Scale: 1="Not at all Effective"; 4="Highly Effective")

Class Sessions	3.6
Yoga (n = 12)	3.6
Formal Mindfulness Practice*	3.5
Informal Mindfulness Practice*	3.4
Assigned Readings	3.2
Optional Daily Meditation Sessions	3.1
"Extra" Readings sent by email	2.9
Working with my Mentor	2.9

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*[Note: "**Formal mindfulness practice**" was defined as: Sitting Meditation, Walking Meditation, Body Scan, or 3-Minute Breathing Space; "**Informal mindfulness practice**" was defined as: Engaging in ordinary daily activities in a mindful, attentive, and non-judgmental manner.]

Participants were also asked at post-intervention assessment to estimate the number of days per week, on average, on which they engaged in formal mindfulness practice; they reported an average of 3.8 days per week.

Also at post-intervention, participants were asked to give narrative responses to the following questions:

- What parts of the program would you like to see included in the future?
- What part(s) of the program would you like to see excluded in the future?
- Is there anything that you feel might be beneficial that we have not included in the program?

Responses to these questions indicated a very high level of satisfaction with the program. Most respondents expressed the opinion that all aspects of the program should be retained, and that no aspects should be excluded, in future versions. Full responses are set out in Appendix 1, below, at page xx…

DISCUSSION:

LIMITATIONS:

Absence of a placebo: As is typical of non-drug efficacy studies, it was impossible to provide a control group that was administered any sort of placebo.

Pre-treatment difference between Intervention Group and Control Group: The Intervention group did score significantly lower (on baseline measures) on overall QOL than the Control group; this difference may have influenced the motivation level of the Intervention Group to work harder to change aspects of their lives that were distressing. However, the opposite could have been true, as well (lower QOL possibly correlating with diminished capacity to improve one's circumstances). Given that none of the other psychometric or biometric variables showed significant differences, however, it seems unlikely that this single pre-treatment difference had a large impact on the observed post-treatment differences.

Group Composition and Cohesion: Participants in the intervention group were assigned either to the morning or the afternoon section (12 participants in each section), but they were permitted to attend either session, depending on their changing schedules, as well as convenience factors. There was a significant amount of shifting as to group composition, from session to session. Accordingly, some participants noted

that they did not always feel they “knew” the people who were in their group. It appears that group cohesion was not as optimal as it could have been. A fixed group may have encouraged greater levels of sharing of personal goals, attainments, and barriers. This flux in group composition may also have contributed to the drop-out rate. As instructor, I found that there seemed to be some reluctance among participants about talking about personal goals.

Mentor component: The idea behind the “mentor component” was that it would give each participant a trained personal coach with whom they could meet individually, on a weekly basis, to discuss (a) mindfulness practice, and any barriers (and successes) they might be encountering; and (b) goal-setting and activities in support of goals, and any barriers (and successes) they might be encountering. Unfortunately, participants did not rate the mentor component as favorably as they did other components. Those who did regularly meet with their mentors rated those interactions as very helpful; however, discussions with mentors throughout the duration of the program, and efforts to use mentors to assist in data collection, indicated that roughly half of the participants used the mentor component very little, or not at all. Mentors themselves expressed some confusion as to their roles, both as advisors/coaches, and also with respect to desired data collection.

Measurement of Goal Attainment: Although the study addresses changes in participants across a number of important psychosocial and biometric variables, there was no specific mechanism for measuring the success, or lack of success, that the individual participants may have attained in meeting specific personally set wellness goals. Anecdotally, the data indicate that there were some very significant goals attained: for example, one participant successfully stopped smoking, and another participant stated that she had found that she was able to be much calmer and less reactive when engaged in very stressful interpersonal situations. In the future, however, it would be a good idea to introduce specific ways to measure attainment of personally set wellness-related goals.

Drop-Out Rate: Our non-completion (or drop-out) rate was 17%. This rate is not inconsistent with MBSR programs in general: typical dropout rates in MBSR programs are reported to lower than 20% (Kabat-Zinn, 1982; Kabat-Zinn et al., 1985; Shapiro et al., 1998; Shapiro et al., 2005).

To put this issue in context, we should note that drop-out rates in psychotropic medication treatment for major depressive disorder are around 60%, and rates of premature termination in counseling and psychotherapy are reported to be around 50%. In Shapiro et al. (2005), a recent study of MBSR for health care professionals, 44% failed to complete the intervention. Drop-out rates consistently present a challenge to those working in the areas of health care and wellness promotion. However, we are very much committed to developing a program that is both widely accessible and also

very effective, and would like to find ways to minimize the drop-out rate as much as possible, without diminishing effectiveness.

Our decision not to use pre-screening or orientation sessions, and to employ no exclusionary criteria, doubtless contributed to the drop-out rate. Comparisons of psychometric variables between completers and non-completers indicate that the non-completers were, overall, more psychologically distressed than the completers. Moreover, this was a brand-new program, and those who signed up to participate had very little opportunity to learn in any detail what the program would entail. Certainly they were not asked to make any commitment to attend all sessions, or to complete between-session mindfulness and goal-related activities. We made a deliberate decision to adopt an "invitational" approach, rather than an approach based on expectations, with respect to attendance and homework. For some individuals, this was a very attractive aspect of the program, and it may have actually boosted their incentive to participate fully; but for others, it may have resulted in a sense that neither attendance, nor completion of suggested homework assignments, were really of much importance.

Finally, in our efforts to explore numerous avenues, we used a large number of instruments and procedures for data collection procedures, with the result that each data collection process consumed between 1-2 hours for each participant, both pre- and post-intervention.

Biometric Variables: Personnel need to be better trained in a consistent protocol for measuring blood pressure, and, with respect to measurement of body fat, consistency of personnel needs to be maintained, as it appears that (even with well-trained raters) interrater reliability is not excellent (using electronic calipers).

FUTURE DIRECTIONS: This program could be strengthened by: elimination of, or major changes within, the mentor component; enforcing consistent group composition; and employing a pre-screening method, including exclusionary criteria (especially for those who are unable or unwilling to commit to "homework" between sessions).

DISCUSSION: Participants in MBW displayed progress in numerous wellness-related areas, most prominently in the areas measured by psychometric instruments. It is not easy to tease out "mind"-related wellness from "body"-related wellness, or "spirit"-related wellness. The connections between and among mood/anxiety symptoms, spirituality, and "physical" illness are numerous and well-documented, even if not fully understood. Our participants showed significant improvements on psychometric scales designed to measure: depression, anxiety, overall psychological discomfort, psychological/emotional sensitivity, impulsivity, attentional deficits, mindfulness, and

overall quality of life. No significant changes in any of these areas were measured in the control group.

We suggest that the methods of action are as follows: First, mindfulness training enhances attention. Specifically, participants practice, and gain increased capacity to *direct* their attention to a specific target, and to *sustain* their attention on their target(s) or object(s) of choice. In and of itself, mindfulness training has been repeatedly demonstrated to be of benefit in many ways. The MBW program is designed to take these beneficial results and to enhance them by targeting them in a particular way: that is, by teaching participants to take the attentional capacities they develop through mindfulness practice, and to use those capacities in a particularly focused way, i.e., by asking participants to pay particular attention to the values-based wellness-related goals that they formulate, as part of the program.

In MBW, along with mindfulness training, participants are taught to identify their values, choose goals consistent with their values, and select small targeted activities that can be accomplished on a daily or frequent basis, to help them achieve their goals. They are taught to use their attentional and goal-setting skills to more frequently bring their values and goals salient into their awareness, or consciousness. And they are also taught to use a non-judgmental (or compassionate) attitude or stance toward themselves, others, and all phenomena; this helps them to let go of harsh (and counterproductive) judgments, and negative expectations, concerning their performance in achieving goals.