

# Mindfulness-Based Stress Reduction for Health Care Professionals: Results From a Randomized Trial

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*The literature is replete with evidence that the stress inherent in health care negatively impacts health care professionals, leading to increased depression, decreased job satisfaction, and psychological distress. In an attempt to address this, the current study examined the effects of a short-term stress management program, mindfulness-based stress reduction (MBSR), on health care professionals. Results from this prospective randomized controlled pilot study suggest that an 8-week MBSR intervention may be effective for reducing stress and increasing quality of life and self-compassion in health care professionals. Implications for future research and practice are discussed.*

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*Keywords:* mindfulness, stress, health care professionals, meditation

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There is considerable evidence that the stress inherent in health care negatively impacts health care professionals. Stress can lead to increased depression (Tyssen, Vaglum, Gronvold, & Ekeberg, 2001), decreased job satisfaction (Blegen, 1993; Flanagan & Flanagan, 2002), disrupted personal relationships (Gallegos, Bettinardi-Angres, & Talbott, 1990), psychological distress (V. Jain, Lall, McLaughlin, & Johnson, 1996); and even suicide (Richings, Khara, & McDowell, 1986). Stress also may harm professional effectiveness: It decreases attention (Smith, 1990), reduces concentration (Askenasy & Lewin, 1996), impinges on decision-making skills (Klein, 1996; Lehner, Seyed-Solorforough, O'Connor, Sak, & Mullin, 1997), and reduces providers' abilities to establish strong relationships with patients (Pastore, Gambert, Plutchik, & Plutchik, 1995).

Stress also may lead to increased *burnout* (Spickard, Gabbe, & Christensen, 2002), defined as a syndrome of depersonalization, emotional exhaustion, and a sense of low personal accomplishment. A recent study found that burnout was significantly associated with suboptimal self-reported patient care (Shanafelt, Bradley, Wipf, & Back, 2002). Over a decade ago, the field identified these problems and called for change, advocating better care for health professionals (Butterfield, 1988). Despite this call for change, dissatisfaction and distress have continued to increase. For example, a study of U.S. physicians showed a decline in satisfaction with every aspect of their professional life from 1986 to 1997 (Murray et al., 2001). It is clear that health care professionals need support in addressing the numerous stressors inherent in their work.

The current study attempted to address this need, by offering an intervention to health care professionals to help cope with their considerable stress. The intervention was modeled after a well-established, cost-effective stress reduction program, mindfulness-based stress reduction (MBSR), developed by Kabat-Zinn and colleagues at the University of Massachusetts Medical Center (Kabat-Zinn, 1982). MBSR is an educationally based program focusing on training in the Eastern contemplative practice of mindfulness. Mindfulness is a form of meditation originally derived from the Theravada tradition of Buddhism (Hanh, 1976). The 2,500-year-old practice known as Vipassana was developed as a means to cultivate greater awareness and insight (Goldstein, 1976). *Mindfulness* is often translated as "to see with discernment."

The MBSR intervention is designed to teach participants to become more aware of, and relate differently to thoughts, feelings, and body sensations. MBSR helps participants cultivate a nonjudging yet discerning observation of all the stimuli that enter their field of awareness moment by moment. Mindfulness practice allows for greater awareness of the "here and now," as the practitioner learns to let go of ruminations about the past and fears regarding the future. In this way, practitioners learn to see their habitual

reactions to stress and to cultivate healthier, more adaptive ways of responding. The essence of mindfulness involves awareness and acceptance of whatever is occurring in the present moment.

Research demonstrates that mindfulness interventions can effectively reduce stress, anxiety, and depression in both clinical and nonclinical populations (Miller, Fletcher, & Kabat-Zinn, 1995; Shapiro, Schwartz, & Bonner, 1998). Further, research suggests that MBSR is an effective intervention for prevention of relapse of major depression (Teasdale et al., 2000; Teasdale, Segal, & Williams, 1995). Evidence also suggests that MBSR may be an effective intervention for psoriasis (Kabat-Zinn, Wheeler, Light, & Cropley, 1998), chronic pain (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth, & Burney, 1985), and fibromyalgia (Kaplan, Goldberg, & Galvin-Nadeau, 1993) and has been associated with significant decreases in general medical symptomatology (Kabat-Zinn et al., 1992).

Specifically related to health care professionals, two previous studies have demonstrated the beneficial effects of MBSR for medical students and prehealth students. In a randomized control trial of MBSR for medical and premedical students, findings indicated significant decreases in depression and anxiety and significant increases in empathy in the MBSR intervention group as compared with controls (Shapiro, Schwartz, & Bonner, 1998). These findings were replicated in a recent randomized controlled trial of prehealth students (S. Jain, Shapiro, Swanick, Bell, & Schwartz, 2004). Although these studies contribute significantly to the literature on preparing health care students in training, they do not directly test the effects of MBSR for health care professionals actively engaged in clinical practice. The current study aimed to do this by examining the effects of MBSR on job burnout and psychological distress in health care professionals currently involved in clinical work.

### AIMS AND HYPOTHESES

The primary purpose of the current study was to replicate and extend initial research demonstrating the value of MBSR for medical students (Shapiro et al., 1998) and prehealth students (S. Jain et al., 2004). To date, no study has examined the effects of MBSR for health care professionals actively engaged in clinical practice. To address this gap in the literature, the current study examined the effects of MBSR in a population of health care professionals who were currently involved in clinical work, as opposed to being “in training” as with the previous student populations studied. The primary hypotheses of the study were that MBSR would (a) decrease overall psychological distress, (b) decrease stress, and (c) decrease job burnout. We

also hypothesized that MBSR intervention would have positive benefits of (a) increasing overall life satisfaction and (b) increasing self-compassion.

## METHOD

This pilot study used a randomized controlled study design that implemented a 2 (experimental vs. wait-list control group)  $\times$  2 (baseline, post-treatment) study design, yielding a between-groups comparison condition. Participants were randomly assigned to an 8-week MBSR group or a wait-list control group. The control group received the identical MBSR intervention after the experimental group completed the program.

### Participants

All health care professionals (e.g., physicians, nurses, social workers, physical therapists, and psychologists) from the Palo Alto and Menlo Park Divisions of the Veterans Affairs Palo Alto Health Care System were eligible for the study. Recruitment consisted of posting flyers around the hospital and sending out e-mails describing the *free* stress management program for health care professionals. The flyers and e-mails explained that the intention of the program was to reduce stress, decrease burnout, and increase overall well-being. Fifty-one participants responded to the e-mail and flyer recruitment. Inclusion criteria included (a) being a current health care professional, (b) having an age greater than 18 years, and (c) being English speaking. (The reason for this criterion is that the MBSR intervention, including all patient material, is currently only available in English, and we are neither funded for nor capable at the time of translation.) Exclusion criteria included having (a) current substance abuse problems and (b) current suicidal ideation. Thirty-eight health care professionals aged 18–65 enrolled in the study, gave informed consent, and were randomly assigned to the MBSR group ( $n = 18$ ) or wait-list control group ( $n = 20$ ).

### Measures

Baseline and postintervention measures were taken on both the experimental and control groups; however, the control group did not complete postintervention measures after they received the same treatment. Psychological distress was assessed with the Brief Symptom Inventory (BSI; Derogatis, 1993). The BSI yields 10 reliable subscales reflecting different

mood states, including Anxiety and Depression, as well as a Total Mood Disturbance scale. The Maslach Burnout Inventory (MBI; Maslach, & Jackson, 1986) measures three facets of job-related burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. This is the most widely used measure of burnout in the field, and its psychometrics and validity are well supported (see Maslach & Jackson, 1986). Stress was measured with the Perceived Stress Scale, a global measure of perceived stress (see Cohen, Kamarck, & Mermelstein, 1983).

We also examined two positive outcomes—satisfaction with life and self-compassion. Life satisfaction was measured with the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). This is a measure of global life satisfaction in the field and is supported by strong psychometrics. The Self-Compassion Scale created by Neff (2003) was used to measure self-compassion among the participants. 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). In an effort to further assess the subjective experiences of participants, the following two questions were administered at the end of the intervention:

1. “On a scale from 1–10, how meaningful has the MBSR program been in your life?”
2. “What do you feel you gained from the MBSR program?”

### **Intervention**

Mindfulness has been conceptualized as a state in which one is highly aware of the present moment, acknowledging and accepting it, without getting caught up in thoughts about the present experience or in emotional reactions to it (Bishop et al., 2004). Mindfulness involves paying attention to one’s present experiencing in a nonjudgmental, nonevaluative way. Although mindfulness requires a certain degree of calm and equanimity, it is not to be confused with relaxation techniques. Mindfulness approaches and relaxation techniques differ significantly. Mindfulness is a form of mental training intended to enhance awareness and the ability to disengage from maladaptive patterns of mind that make one vulnerable to stress responses and psychopathology. Training in mindfulness attempts to increase awareness of thoughts, emotions, and maladaptive ways of responding to stress, thereby helping participants learn to cope with stress in healthier, more effective ways (Bishop et al., 2004).

The current MBSR intervention consisted of eight 2-hr sessions, 1 session per week. Participants received training in the following meditative practices: (a) *sitting meditation*, involving awareness of body sensations, thoughts, and emotions while continually returning the focus of attention to the breath; (b) *body scan*, a progressive movement of attention through the body from toes to head, observing any sensations in the different regions of the body; (c) *Hatha yoga*, which consists of stretches and postures designed to enhance greater awareness of and to balance and strengthen the musculoskeletal system, and (d) *three-minute breathing space*, a “minimeditation” that focuses on the breath, the body, and what is happening in the present moment (Segal, Williams, & Teasdale, 2002). Inherent in all these techniques is an emphasis on mindfulness, continually bringing attention to the present moment. In addition to the mindfulness exercises, a “loving kindness” meditation was introduced, in an attempt to help health care professionals develop greater compassion for themselves, their coworkers, and their patients.

The atmosphere of the group was safe and open, facilitating an environment where participants could share their direct experience with the practices. The environment was not, however, similar to that of a support group, in that participants shared about their experiences of mindfulness, instead of difficulties in their lives. The intervention was led by a clinical psychologist with extensive training and experience in MBSR. The same instructor led the intervention for the control group as well.

### Control Group

Participants assigned to the wait-list control condition received the equivalent MBSR intervention immediately after the experimental group completed the intervention.

### Statistical Analyses

Baseline analyses revealed a trend indicating that study participants assigned to the treatment group reported more distress than controls. To control for possible regression to the mean, we carried out regression analyses for each of the five primary study outcomes—burnout, perceived stress, psychological distress, satisfaction with life, and self-compassion—controlling for baseline levels of those same variables. Owing to the pilot nature of this study and the small sample size, we did not perform intent-to-treat analyses but compared only those participants who did not drop out.

## RESULTS

Of the 18 participants randomized to the mindfulness intervention, 8 did not complete the intervention. Reasons included health issues ( $n = 2$ ), family problems, resignation from job, insufficient time ( $n = 4$ ), and other ( $n = 2$ ). At baseline, there was a trend in the direction of study completers being slightly more distressed than dropouts on some measures. However, these differences were not statistically significant. Of the 20 participants randomized to the control group, 2 individuals failed to complete end-of-study assessments.

As shown in Table 1, significant between-group differences were observed for the Perceived Stress ( $p = .04$ ) and Self-Compassion Scales ( $p = .004$ ). Compared with controls, the intervention (MBSR) group demonstrated a significant mean reduction (27% vs. 7%) in perceived stress and increase in self-compassion (22% vs. 3%). In the MBSR group, 88% of the participants improved their stress scores while 90% demonstrated increases in self-compassion. In addition, the MBSR condition demonstrated trends toward greater positive changes in all of the dependent variables examined. Compared with controls, intervention participants reported greater satisfaction with life (19% vs. 0%), decreased job burnout (10% vs. 4%), and decreased distress (23% vs. 11%; see Table 1).

Owing to the significant changes observed on the self-compassion measure, we examined the extent to which changes in this variable mediated changes in perceived stress and/or satisfaction with life. Separate regression analyses were performed using changes in self-compassion as a covariate. Changes in self-compassion significantly predicted positive changes in perceived stress but did not have predictive power for satisfaction with life. Although these findings must be interpreted with caution given the small sample size in this study, they do point to the value of examining self-compassion as a potentially important mediating mechanism in future studies of mindfulness.

## DISCUSSION

The results of this study suggest the potential benefits of a meditation-based intervention for health care professionals. Those who participated in the MBSR intervention reported decreased perceived stress and greater self-compassion when compared with controls. Reported psychological distress, satisfaction with life, and job burnout were decreased; however, the differences between experimental and control groups along these dimensions were not significant. This may be understandable given the small numbers in

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**Table 1.** Means and Statistics for Pre- and Posttreatment

Primary outcome	Mindfulness		Wait-list control		Between-group analyses <sup>a</sup>
	Pretreatment	Posttreatment	Pretreatment	Posttreatment	
Satisfaction With Life	20.80	24.80	23.94	23.83	$F(2, 25) = 3.84, p = .06$
Burnout Scale	75.90	68.40	72.94	70.00	$F(2, 25) = 1.69, p = .21$
Perceived Stress	28.89	21.22	23.78	22.17	$F(2, 24) = 4.4, p = .04$
Brief Symptom Inventory	0.61	0.47	0.56	0.50	$F(2, 22) = 1.44, p = .25$
Self-Compassion	16.48	20.15	19.51	20.07	$F(2, 24) = 9.85, p = .004$

<sup>a</sup>*p* values are based on the results of separate regression analyses and refer to the test of significance for group assignment (treatment or wait list), controlling for the effects of baseline levels of each outcome variable examined.



the study and the likelihood that the study was therefore insufficiently powered.

In addition to the findings of the quantitative data, responses to our open-ended question suggest further benefits of the mindfulness intervention, perhaps not so easily captured through the use of traditional psychological inventories. The anonymous participant responses to the question “What effects did the MBSR program have on your life?” suggest that the intervention had a significant positive impact on their lives (see the Appendix). Adding support to this are the anonymous participant responses to the question “On a scale of 1–10 what impact did the MBSR program have on your life?” The mean rating of the impact of MBSR was 9.2, indicating that, according to subjective report, the 8-week MBSR program did substantially impact participants’ lives. The qualitative responses in conjunction with the high rating of the program suggest that MBSR may indeed prove beneficial for those health care professionals who are able to participate in and complete the intervention.

Given the reported benefits and satisfaction with the intervention, the significant dropout rate seen in the intervention group is a concern. Forty-four percent of the MBSR group did not complete the intervention. Typically, dropout rates are less than 20% for an MBSR intervention (Kabat-Zinn, 1982; Kabat-Zinn et al., 1985; Shapiro et al., 1998). Although these participants may not have felt they were deriving benefits from the intervention, all 8 of them reported that dropping out was due to lack of time and increased responsibility rather than to lack of interest in or need for stress management. Supporting this is the fact that 90% of the control group completed the postassessment measures, indicating their strong desire and commitment to participate in the next MBSR program. We suggest that the high dropout rate in this study does not indicate a lack of need or interest but instead indicates that adding a 2-hr intervention plus daily home practice to an already demanding schedule may not be feasible for a substantial number of health care professionals.

Future research could improve on this study by exploring ways to offer stress management interventions without adding additional time-commitment and strain. Creative means of incorporating the 8-week MBSR intervention into work schedules may be an important way to prevent burnout and increase job (and life) satisfaction in health care professionals. Future research could also address a limitation of this study: lack of a credible placebo control. Future research could also benefit by including follow-up assessment to determine whether the benefits of MBSR are enduring. Finally, future research could include additional forms of assessment that extend and strengthen the self-report measures used in the current study, for example, examining whether the positive effects of MBSR translate into enhanced patient care.

## CONCLUSION

MBSR offers a well-established model for providing a brief, cost-effective program that can be implemented easily in hospitals and health care clinics. In light of the significant stress reported by health care professionals, and the deleterious consequences of this stress on their lives, it seems important to begin to seriously explore more effective means of supporting them. Further, given that job burnout and distress have been significantly associated with decreased patient satisfaction (Garman, Corrigan, & Morris, 2002) and suboptimal self-reported patient care (Shanafelt et al., 2002), incorporating MBSR interventions for health care professionals also has the potential to enhance patient care. It is hoped that this research will contribute to changes in the field of medicine, leading to enhanced care for health professionals and ultimately for the patients they serve.

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(Appendix follows)

## Appendix

## Anonymous Participant Responses to the Question, "What Effects Did the MBSR Program Have on Your Life?"

1. "The best benefit is being more gentle and kind with myself. . ."
2. "This practice is vital to living with compassion and loving-kindness."
3. ". . . increase in spirituality. . ."
4. ". . . opened my mind to the destructive thought patterns I have and to various ways of addressing them."
5. "The most meaningful thing to me was looking into myself and becoming aware of just how important I am to me."
6. "Originally I signed up for this class to learn how to deal with my stress at work. What I have learned is by taking care of me, the stress just falls away."
7. ". . . helped me learn how to better manage painful emotions."
8. ". . . increased sense of living more fully."
9. "I will always be able to access this method of stress reduction especially in times of emotional difficulty."
10. "I am enjoying more of the fine details of each day."
11. "I am more mindful of the beauty in nature and in each person I come in contact with."

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