

**A MINDFULNESS COURSE DECREASES  
BURNOUT AND IMPROVES WELL-BEING  
AMONG HEALTHCARE PROVIDERS\***

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**ABSTRACT**

*Objective:* Healthcare providers are under increasing stress and work-related burnout has become common. Mindfulness-based interventions have a potential role in decreasing stress and burnout. The purpose of this study was to determine if a continuing education course based on mindfulness-based stress reduction could decrease burnout and improve mental well-being among healthcare providers, from different professions. *Design:* This was a pre-post observational study conducted in a university medical center. A total of 93 healthcare providers, including physicians from multiple specialties, nurses, psychologists, and social workers who practiced in both university and community settings, participated. The intervention was a continuing education course based on mindfulness-based stress reduction that met 2.5 hours a week for 8 weeks plus a 7-hour retreat. The classes included training in four types of formal mindfulness practices, including the body scan, mindful movement, walking meditation and sitting meditation,

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as well as discussion focusing on the application of mindfulness at work. The course was offered 11 times over 6 years. The main outcome measures were work-related burnout as measured by the Maslach Burnout Inventory and self-perceived mental and physical well-being as measured by the SF-12v2. *Results:* Maslach Burnout Inventory scores improved significantly from before to after the course for both physicians and other healthcare providers for the Emotional Exhaustion ( $p < 0.03$ ), Depersonalization ( $p < 0.04$ ), and Personal Accomplishment ( $p < 0.001$ ) scales. Mental well-being measured by the SF12v2 also improved significantly ( $p < 0.001$ ). There were no significant changes in the SF12v2 physical health scores. *Conclusion:* A continuing education course based on mindfulness-based stress reduction was associated with significant improvements in burnout scores and mental well-being for a broad range of healthcare providers.

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**Key Words:** meditation, psychological stress, professional burnout, physicians, nurses, health personnel

## INTRODUCTION

Healthcare providers are under increasing stress due to a variety of work-related issues, often including steadily increasing clinical productivity expectations among other pressures [1, 2]. Work-related burnout is common among a variety of healthcare professions, including physicians, nurses, and psychologists [3-7]. Burnout is marked by any or all of the following: emotional exhaustion, depersonalization, and decreased sense of personal accomplishment [8, 9]. Emotional exhaustion is the central quality of burnout, and refers to being less able to experience emotion related to work. Depersonalization is the process of providers distancing themselves from patients or clients by diminishing the qualities that make them unique. Personal accomplishment is the feeling of achievement related to working with people. Burnout among healthcare providers has been correlated with a number of effects that may impact patients, including decreased patient satisfaction and increased errors [6, 10, 11]. Burnout may also affect learning as it has recently been associated with lower scores on the In-Training Examination for internal medicine residents [12].

Training in mindfulness has been proposed as a means of decreasing healthcare provider burnout, increasing satisfaction, and improving patient care [13-17]. Mindfulness is defined as intentional present-moment awareness without judgment. It can be cultivated through a variety of meditation practices [15]. A number of recent studies have demonstrated decreased burnout among nurses [18, 19] and physicians [20, 21] who participate in mindfulness classes. Recently, Krasner and colleagues reported that an educational program in mindful communication for primary care physicians resulted in decreased burnout and increased empathy

[20]. We wished to determine if a similar program provided to a broad range of healthcare providers, including physicians from both primary care and other specialties as well as to nurses, psychologists, social workers and other healthcare providers, could also decrease burnout and improve well-being.

## METHOD

### Participants

We recruited physicians and other healthcare providers from the Charlottesville, Virginia area to participate in an 8-week program called Mindfulness for Healthcare Providers. The classes were offered once or twice a year beginning in 2004. The classes were advertised through e-mail announcements at the University of Virginia and through local print media. Participants paid \$400 for the classes, except for those in training who paid \$200. All participants could receive continuing education credits sponsored by the University of Virginia for the classes. The study was approved by the University of Virginia Institutional Review Board.

### Procedures

The intervention was based on the 8-week Mindfulness Based Stress Reduction (MBSR) course developed by Jon Kabat-Zinn at the University of Massachusetts [22]. The classes were taught by both the authors working together. They are experienced teachers, having taught MBSR for 14 and 10 years respectively. The course met for 2.5 hours a week for 8 weeks, and included a 7-hour silent retreat between the 6th and 7th weeks. Four types of formal mindfulness practices were taught, including the body scan, mindful movement, walking meditation, and sitting meditation. The body scan involves paying attention to parts of the body and bodily sensations in sequence. Mindful movement is based on Hatha yoga, and focuses on paying attention to the body during stretching exercises. During walking meditation, the focus of attention is on the process of walking, paying attention to the movement of the body and bodily sensations while walking. In sitting meditation, the primary focus of attention is on breathing. In all these exercises, when thoughts arise and the attention wanders, the practice is to return the attention to the intended focus, whether it is the body at rest or with movement or the breath. Participants were asked to practice one of these techniques for 45 minutes a day, 6 days a week using recorded instructions provided on CDs for guidance.

In addition to formal meditation practice, each class had a presentation of a topic by the teachers and a discussion period. The topics covered were: 1) overview of mindfulness; 2) applying mindfulness in everyday life; 3) mindful movement; 4) applying mindfulness to challenging situations; 5) mindful communication;

6) practicing appreciation; 7) compassion meditation; and 8) review. As part of their weekly homework, group members were asked to pay attention, particularly at work, to their physical, emotional, and cognitive responses. These were discussed during the follow-up session, and common themes were identified and highlighted. They were then asked to pay attention to further examples of highlighted themes as well as to the emergence of new themes and issues.

Participants completed two instruments during the first and last classes. These were the Maslach Burnout Inventory [8] and the SF-12v2 [23]. The Maslach Burnout Inventory (MBI) is a 22-item questionnaire that measures burnout using three scales, Emotional Exhaustion, Depersonalization, and Personal Accomplishment. The MBI is widely used and validated as a measure of burnout among healthcare providers. Each item is measured by a 7-point Likert scale of frequency, from “never” to “every day.” The Emotional Exhaustion scale has nine items and, for healthcare providers, a score above 26 is in the highest tercile and used as the cut-off for “burnout.” The Depersonalization scale has five items, and the cut-off for burnout is 13 or more. The Personal Accomplishment scale has eight items and is scored in the opposite direction from the other two subscales, and a score less than 32 is associated with burnout.

The SF-12v2 is a 12 item-questionnaire that measures self-perceived physical and mental health [23]. It results in two scores, one for each domain, that are normalized so that a score of 50 is approximately equal to the mean of the U.S. general population, and each 10 points equals one standard deviation above or below the mean.

### **Analysis**

The main outcome measures were the changes in scores for the three subscales from the Maslach Burnout Inventory and the two scores from the SF-12v2. Paired *t*-tests were used for the analyses, and physicians and other healthcare providers were analyzed separately. Differences in baseline characteristics between these two groups were analyzed using independent sample *t*-tests for comparing scores between groups and chi-square for comparison of categorical data. Differences in the changes in scores for the two instruments between physicians and other healthcare providers were also analyzed using independent sample *t*-tests.

## **RESULTS**

Over the past 6 years, we have taught 11 classes. A total of 93 participants have enrolled in the classes. This includes all those who attended at least one class. Three physicians took the class twice, one who dropped out due to a family illness and repeated it later, and two who took the entire class twice. Each is included only once in the analysis. Of the 93 participants, 51 (55%) were

physicians and 42 (45%) other healthcare providers. Of the total, 62 were affiliated with the University of Virginia, and 31 were not. The physicians included 39 in practice and 12 in training (residents or fellows). The practicing physicians represented 11 different specialties, with the largest number (13) from internal medicine, followed by 6 from pediatrics and 5 from anesthesiology. Other specialties represented include dermatology, emergency medicine, family medicine, gynecology, physical medicine and rehabilitation, psychiatry, radiation oncology, and surgery. A total of 12 physicians practiced in primary care settings.

Nurses (registered nurses and nurse practitioners) represented the largest group (15 participants) of other healthcare providers, followed by psychologists (12) and social workers (4). The remaining were from a variety of fields, including chaplaincy, dentistry, health education, physical therapy, massage therapy, and acupuncture.

Of the 93 participants, 33 (35%) were men and 60 (65%) were women. Of the 33 men, 27 (82%) were physicians and 6 (18%) were from other healthcare fields. Of the 60 women, 24 (40%) were physicians and 36 (60%) were from other fields.

At baseline, the Emotional Exhaustion and Depersonalization scores were significantly higher for physicians than for other healthcare providers (see Table 1).

There were no significant differences in any of the five scores at baseline between men and women. Of the 93 participants, 90 participated in at least four sessions, and 73 (78%) completed both the pre- and post-questionnaires. There were no significant differences at baseline between those who completed both questionnaires and those who only completed them initially. Changes in scores before and after the classes were analyzed separately for physicians and other healthcare providers. Mental Health, Emotional Exhaustion, Depersonalization, and Personal Accomplishment scores all improved significantly from the first to the last class for both groups as shown in Table 2. The differences between the pre- and post-scores for all of these were greater for physicians than other healthcare providers, although this was statistically significant only for Emotional Exhaustion (change in physician scores = 6.9, change in other healthcare providers scores = 2.9;  $p$  for difference between groups = 0.016).

High levels of stress and burnout have been well documented among residents. In order to determine if residents had higher levels of stress and burnout than other physicians or if they responded differently to the course, we compared both the scores at baseline and the change in scores between resident and non-resident physicians. None of these comparisons were statistically significantly different between these two groups.

## DISCUSSION

Stress and burnout are common among healthcare providers and, in this study, a continuing education course based on mindfulness-based stress reduction

Table 1. Baseline Characteristics of Physicians and Other Healthcare Providers

	Physicians	Other healthcare providers	<i>p</i>
Number	51	42	
Gender—Number of women	24 (47.1%)	36 (85.7%)	< 0.001
Physical health score—Mean ( <i>SD</i> )	57.5 (7.9)	56.9 (5.6)	0.70
Mental health score—Mean ( <i>SD</i> )	41.0 (8.6)	42.9 (9.1)	0.30
Emotional exhaustion—Mean ( <i>SD</i> )	27.9 (9.3)	21.3 (10.1)	0.002
Emotional Exhaustion—Number with score > 26	26 (55.3%)	14 (35.9%)	0.072
Depersonalization—Mean ( <i>SD</i> )	8.8 (5.8)	5.4 (4.3)	0.004
Depersonalization—Number with score > 12	10 (21.3%)	3 (7.7%)	0.072
Personal accomplishment—Mean ( <i>SD</i> )	37.6 (6.0)	38.5 (6.2)	0.51
Personal accomplishment—Number with score < 32	6 (12.8%)	5 (12.8%)	1.0

Table 2. SF-12v2 and Maslach Burnout Inventory Scores Before and After the Mindfulness Course

	Physicians			Other healthcare providers		
	Pre-score Mean (SD)	Post-score Mean (SD)	p-Value	Pre-score Mean (SD)	Post-score Mean (SD)	p-Value
Physical health	58.5 (6.8)	57.6 (4.2)	0.28	56.0 (5.5)	55.9 (3.9)	0.88
Mental health	40.9 (8.8)	48.5 (6.1)	<0.001	43.8 (9.3)	50.0 (6.1)	<0.001
Emotional exhaustion	28.1 (9.8)	21.3 (8.8)	<0.001	21.7 (10.2)	18.8 (9.4)	0.028
Depersonalization	9.2 (6.0)	6.7 (5.3)	0.001	5.0 (3.8)	4.0 (3.6)	0.039
Personal accomplishment	37.7 (5.8)	41.0 (5.1)	<0.001	38.4 (6.1)	41.0 (5.7)	<0.001

**Note:** Analyzed using paired *t*-tests comparing scores between the first and last classes.

resulted in increased mental health well-being and decreased burnout for individuals from a variety of professions. Overall, physicians had higher levels of emotional exhaustion and depersonalization than other healthcare professionals, but there were significant improvements across both groups. A differential effect was found only for emotional exhaustion, with physicians improving significantly more on this scale than the others.

The level of distress was high among the participants, especially among physicians. The mental health scores for both groups were below the average for the U.S. population, and for physicians was almost a full standard deviation lower.

Mindfulness programs have been shown to improve a variety of outcomes among healthcare students [24] and practitioners [17]. Recently, Krasner and colleagues offered a similar program to 70 primary care physicians in Rochester, NY [20]. Over the 8-week course they found significant improvements in a number of measures including decreased burnout that lasted for a total of 15 months. We only measured burnout among the participants in this course before and after the intervention, but our results were very similar to those found in the Rochester study as shown in Table 3. This study extends their work as we had a much broader array of physicians in our study and they only included those practicing primary care.

Our results suggest that mixed groups of healthcare providers can benefit from training in mindfulness-based stress reduction. Over the years of teaching this class, we have been struck with the similarities in the themes that emerged from year to year. Commonly identified are issues of perfectionism accompanied

Table 3. Comparison of Maslach Burnout Scores from Before and After the Mindfulness Classes among Practicing Physicians in Charlottesville, Virginia and Rochester, New York

	Pre	8 weeks
Emotional exhaustion		
Charlottesville	28.1	21.3
Rochester	27.8	23.7
Depersonalization		
Charlottesville	9.2	6.7
Rochester	8.6	7.6
Personal accomplishment		
Charlottesville	37.7	41.0
Rochester	41.2	42.0

by self criticism, feelings of guilt, and thoughts and feelings of not doing enough. Frustration with patients who are suffering in ways the healthcare provider feels powerless to help, and with patients unable or unwilling to change harmful behaviors are also commonly cited. Conversely, feelings of deep affection for patients and deep meaning in relationships with patients also come out in discussion. Although physicians have higher levels of distress overall, many of these issues are shared by participants regardless of their backgrounds.

This study was done in a real-world setting. The courses were offered as regular classes through the University of Virginia Mindfulness Center and participants paid a course fee. This provides support for the generalizability of the results to other sites where similar courses might also be offered at a cost to healthcare providers taking them. The participants also came from a broad range of backgrounds, including those working in both community and academic settings, practicing physicians from a broad range of specialties, trainees, as well as other healthcare providers including registered nurses, nurse practitioners, psychologists, and social workers. That improvements in scores were noted with participants from such diverse backgrounds also suggests that this approach may be beneficial to a wide audience.

This study had a number of limitations, including that it was observational and did not have a control group. Thus, we cannot say this is better than other approaches for reducing stress and improving well-being, but the participants did note significant improvement in multiple dimensions following the classes. We also only measured the effect before and after the classes, and have no data



regarding the duration of the effects. Others have followed participants for longer periods, and the recent study by Krasner et al. found that improvements persisted for 15 months [20]. They offered monthly follow up sessions for their cohort which we also do; however, we have not assessed the effects over time and do not know if they continue. Finally, we did not measure mindfulness or other more specific measures that might help elucidate the mechanisms by which mindfulness training is beneficial [25].

In summary, we found that mindfulness-based stress reduction classes induced significant improvements in mental well-being scores and decreased measures of burnout across a broad range of health professionals. Given the increasing levels of stress that healthcare professionals are facing, these mindfulness classes can offer a practical and viable method to decrease stress and improve well-being as healthcare professionals face continued and often increasing pressures in an ever-evolving healthcare system.

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