

BRIEF VIDEO-MODULE ADMINISTERED MINDFULNESS PROGRAM FOR PHYSICIANS: A PILOT STUDY

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Objective: The purpose of this study was to evaluate the feasibility of implementing a video-module-based mindfulness pilot program intended to reduce stress, improve well-being, and develop mindfulness skills in physicians in a community hospital setting. Preliminary findings are presented.

Materials and Methods: Using a single-sample, pre-post study design, we administered an eight-week mindfulness training offered as part of a wellness initiative for medical staff in a suburban community hospital. Participants enrolled on a first-come, first-served basis. Participants engaged in three 90-min in-person trainings, weekly online video-module trainings, and weekly teleconference coaching calls. Video-module trainings were available at all times, to be accessed at the participants' convenience. Journals and a guided meditation audio library were also provided. Physician stress, well-being (emotional exhaustion, depersonalization of patients, and sense of personal accomplishment), and mindfulness skills (observing, describing, acting with awareness, and accepting without judgment) were evaluated at baseline,

end-of-program, and eight weeks post-intervention using well-validated instruments.

Results: A total of 23 physicians enrolled and 19 completed the program. Compared to baseline, statistically significant decreases in stress, personal accomplishment, and emotional exhaustion were observed at end-of-program and eight weeks post-intervention (all $P < .05$). Significant increases in all mindfulness skills were observed at end-of-program; these increases persisted for describing, acting with awareness, and accepting without judgment at eight weeks post-intervention (all $P < .05$).

Conclusions: This study provides preliminary evidence that a flexible, video-module-based mindfulness program can decrease stress, increase well-being, and develop lasting mindfulness skills in physicians.

Key words: Mindfulness, burnout, stress, physician, webcasts

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BACKGROUND

Provider burnout is widespread in healthcare, documented at rates as high as 60% among practicing physicians.¹ Defined as "a syndrome of depersonalization, emotional exhaustion, and a sense of low personal accomplishment,"² burnout has been shown to lead to increased medical errors,^{3,4} suboptimal patient care,^{3,5} and an increase in medical lawsuits.⁶ Mindfulness can be briefly described as "the state of being attentive to and aware of what is taking place in the present."⁷ Pioneered by Kabat-Zinn⁸⁻¹¹ in the early 1980s, mindfulness based stress reduction (MBSR) programs were designed to

help individuals cope with pain, psychological conditions, or disease through meditation and focused breathing. Mindfulness programs have been developed to serve healthy individuals experiencing severe stress or burnout.¹²⁻¹⁴ Workplace-based mindfulness programs have been shown to reduce symptoms of burnout in nurses and physicians^{2,15-17} and reduce stress in otherwise healthy adults¹⁴ and medical students.¹⁸

Traditional MBSR involves a weekend retreat and weekly 2-2.5 h sessions over an 8-10-week period.^{2,8,15} However, many practicing physicians feel they are under too much stress to make time in their schedules to commit to a traditional MBSR program. Modifications have been made to the traditional MBSR format to create "abbreviated,"¹⁹ "low-dose,"¹⁴ or otherwise time-reduced models of delivery,²⁰ requiring a participant time commitment lasting 5-18 h.

We implemented a flexible, video-module-based mindfulness program for providers in a community hospital, hypothesizing that the program would decrease stress and burnout, increase job satisfaction, and develop lasting mindfulness skills in the participants. Different from the intensive

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Abbreviations: GSH, Good Samaritan Hospital; KIMS, Kentucky Inventory of Mindfulness Skills; MBI, Maslach Burnout Inventory; MBSR, Mindfulness Based Stress Reduction; PSS, Perceived Stress Scale.

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MBSR programs, ours is designed to teach the use of a single-breath mindfulness technique to give undivided attention to the present moment and the task it contains. The program was designed to enable providers operating in high-stress environments to learn and implement a mindfulness tool without the time-intensive time commitment of traditional MBSR. Our program is also unique in its use of online videos and telecoaching to deliver training materials, mitigating the need for large amounts of in-person class attendance by physicians. This delivery mechanism increases flexibility for the participants and coach over traditional methods of delivery.

METHODS

MultiCare Health System's Good Samaritan Hospital (GSH) in Puyallup, Washington, piloted a Mindfulness program using a single-sample, pre-post study design. We obtained MultiCare Health System Institutional Review Board approval in August 2013 and launched the program the following October. Established as part of a wellness initiative, all GSH medical staff physicians were offered the opportunity to participate in the pilot on a first-come, first-served basis. During the kick-off, participants were invited to engage as research subjects, agreeing to complete three well-validated inventories designed to measure stress (Perceived Stress Scale²¹), burnout (Maslach Burnout Inventory²²), and mindfulness skills (Kentucky Inventory of Mindfulness Skills²³). Inventories were administered in-person at the start and end of the eight week pilot, and via interoffice mail and email eight weeks post-intervention.

The intervention was delivered through three live sessions, eight online video trainings, and weekly teleconference coaching calls. The in-person sessions and video trainings were developed and presented by one of the authors (D.D.), a family medicine physician and certified professional coach. The videos used in the training were based on those developed for the author's private coaching clients,²⁴ with an upgrade in video quality and minor wording modifications to tailor the videos to the MHS program. The 90-min in-person group mindfulness trainings were held at the beginning of weeks one and four and at the end of week eight. Each week, a 5–7 min training video was uploaded to a secure online portal (Table 1). Participants were encouraged to view the video as many times as they wished in order to learn and reinforce the week's lesson. A weekly, one-hour coaching call facilitated by the author (D.D.) and scheduled at a time that was convenient for the largest number of participants gave participants an opportunity to engage in small group discussion of their experiences with the materials and techniques. An audio library was available and included a Body Scan and guided meditations adapted from Kabat-Zinn's²⁵ work. Journals were provided to participants at the kick-off meeting. Participants were sent daily emails which included a quotation and short message relevant to the lesson in that week's video-module.

We used paired *t*-tests to evaluate changes in stress, well-being (emotional exhaustion, depersonalization of patients, and sense of personal accomplishment), and mindfulness

skills (observing, describing, acting with awareness, and accepting without judgment) between baseline and end-of-program as well as baseline and post-intervention. Participant use of each aspect of the intervention (single-breath mindfulness technique, meditation, journaling, coaching call, and video training) was self-reported each week through an online survey. Significance was assessed at the 0.05 level, and reassessed at $\alpha = 0.003125$ to account for the multiple-testing burden using a Bonferroni correction. All analyses were conducted in the R statistical computing environment.²⁶

RESULTS

A total of 23 participants enrolled in the pilot and consented as research subjects. Nine (39.1%) were women and ages ranged from 32 to 68 (median age = 46 years). Participants represented a range of specialties including surgery, sleep medicine, obstetrics/gynecology, and anesthesia. In all, 10 subjects (43.5%) specialized in family or internal medicine. Experience varied, with as few as zero (first year residents) and as many as 38 years in practice. The majority (69.6%) had no prior mindfulness training. Four subjects (17%) stopped participating shortly after the program began. Analyses are based on the data provided by the 19 participants who completed the program.

No technical difficulties were encountered with the use of the online-video module. Response to the weekly survey was generally low (Table 2), with 8–14 (42–74%) participants providing information about their use of the program elements during the study period. However, 100% of those who did respond to the survey each week indicated integration of the single-breath mindfulness technique in their daily professional routine.

We observed significant changes in seven of the eight outcomes between baseline and end-of-program, post-intervention, or both. Most striking was a decrease in stress between baseline and end-of-program ($P = .0005$) that persisted post-intervention ($P = .0001$). Other outcomes with changes persisting post-intervention include increases in personal accomplishment ($P_{\text{end}} = .004$ and $P_{\text{post}} = .02$) and the mindfulness skills of describing ($P_{\text{end}} = .01$ and $P_{\text{post}} = .002$), acting with awareness ($P_{\text{end}} = .02$ and $P_{\text{post}} = .0003$), and accepting without judgment ($P_{\text{end}} = .01$ and $P_{\text{post}} = .007$). Results for all outcomes are provided in Table 3.

DISCUSSION

This study provides preliminary evidence of the feasibility and effectiveness of a video-module-based mindfulness program, and especially highlights the ability to deliver mindfulness training to busy providers in a flexible and timely manner. The novel delivery method allows physicians to engage with training materials as frequently as needed and at times that are personally convenient. Once the video-modules are developed, delivery of the training requires only a small-time commitment from a coach. This creates the possibility of providing the program to many participants at relatively low cost and could include training past participants to

Table 1. Program Schedule

Week	Video-Module Training Topic	Activities	Video Content
1	Mindfulness basics and single-breath mindfulness technique	90 min in-person group session: Introductions and program intentions Sitting meditation Single-breath mindfulness technique Baseline inventories Group conference call	Review of the single-breath mindfulness technique training provided in the 90 min in-person session.
2	Creating a habit of mindfulness and preventing stress buildup	Group conference call	How to select and use a trigger to encourage single-breath mindfulness practice multiple times a day.
3	Appreciative inquiry and attention focusing	Group conference call	Using intention journaling to identify positive patient encounters every day.
4	The three powers of mindfulness: awareness, attention, and intention	90 min in-person group session: Experience and practice of: 5 min sitting meditation 5 min walking meditation 5 min chair yoga Group conference call	Sitting meditation, walking meditation, and chair yoga with guided recordings for all three practices. Review of single-breath mindfulness practice.
5	Intention journaling: envisioning and becoming open to an ideal patient encounter	Group conference call	Appreciative inquiry and the importance of focusing on progress made.
6	Creating healthy boundaries between work and home	Group conference call	Creating a boundary ritual at the end of each work day.
7	Sitting and walking meditation	Group conference call	How mindfulness works, based on the framework presented in Shapiro et al. ²⁷
8	Developing a lasting mindfulness practice	90 min in-person group session: Breathing practice Personal mindfulness practice planning End-of-program inventories Graduation ceremony	Review of all lessons and creation of an action plan to develop an ongoing mindfulness practice.
16	None	Post-intervention inventories	None

Table 2. Participant Reported Use of Mindfulness Techniques, Group Coaching Call, and Video Module

Week	Responses		Single-Breath Technique		Meditation ^a		Journaling		Coaching Call		Video Training	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
1	14	74	14	74	6	32	10	53	4	21	8	42
2	11	58	11	58	3	16	7	91	7	37	10	53
3	12	63	12	63	7	37	7	91	6	32	10	53
4	10	53	10	53	7	37	4	21	5	26	7	37
5	11	58	11	58	8	42	5	26	1	5	6	32
6	10	53	10	53	9	47	2	11	1	5	6	32
7	8	42	8	42	6	32	3	16	4	21	6	32
8	9	47	9	47	7	37	4	21	2	11	7	37

^aMeditation includes walking, sitting, or guided meditation.

Table 3. Mindfulness Pilot Results

Outcome	Score Range	Baseline	End of Program (Week 8)			Follow Up (Week 16)		
		Mean (SD)	Mean (SD)	Mean of Differences ^a (95% CI)	P	Mean (SD)	Mean of Differences (95% CI)	P
MBI: emotional exhaustion	0–54	27.3 (11.0)	22.1 (11.3)	–4.1 [–9.1, 1.0]	.11	19.4 (11.9)	–8.3 [–13.5, –3.2]	.004
MBI: depersonalization	0–30	8.2 (6.1)	6.5 (4.1)	–0.8 [–3.7, 2.1]	.56	6.0 (3.8)	–2.1 [–4.7, 0.4]	.09
MBI: personal accomplishment	0–48	38.0 (7.1)	42.1 (7.3)	4.5 [1.7, 7.3]	.004	42.5 (7.5)	4.6 [1.0, 8.2]	.02
PSS: stress	0–40	18.4 (7.0)	12.3 (6.8)	–6.6 [–9.8, –3.5]	.0005 ^b	10.4 (7.0)	–8.6 [–12.0, –5.1]	.0001 ^b
KIMS: observing	12–60	41.4 (5.6)	45.1 (6.4)	3.4 [0.6, 6.3]	.02	45.0 (7.6)	2.8 [–1.0, 6.5]	.14
KIMS: describing	8–40	28.5 (6.2)	31.8 (5.1)	2.8 [0.8, 4.7]	.01	32.3 (6.5)	3.1 [1.4, 4.9]	.002
KIMS: acting with awareness	10–50	30.4 (4.1)	33.3 (5.2)	3.6 [0.6, 6.5]	.02	35.1 (3.9)	5.1 [2.8, 7.4]	.0003 ^b
KIMS: accepting without judgment	9–45	30.6 (7.3)	35.3 (8.1)	4.7 [1.1, 8.3]	.01	34.6 (7.5)	4.8 [1.5, 8.0]	.007

MBI: Maslach Burnout Inventory; PSS: perceived stress scale; KIMS: Kentucky Inventory of Mindfulness Skills.

^aAll analyses performed using paired *t*-tests.

^bSignificant after accounting for multiple testing burden, $\alpha = 0.003125$.

facilitate the in-person sessions and conference calls, creating a largely self-sustaining program.

Our primary findings were a reduction in stress at both end-of-program and post-intervention, an increased sense of personal accomplishment, and an increase in mindfulness skills. These findings are consistent with other studies demonstrating that modified mindfulness programs can deliver meaningful results at a substantially reduced participant commitment of time.^{14,19,20} The primary weaknesses of this study are its small sample size, possible source of bias from the volunteer sample without a control population, and its limited self-reported data on use of the multiple aspects of the intervention. Future research with the video-module delivery method using a larger sample and including a control group is warranted.

CONFLICTS OF INTEREST

Dike Drummond is the CEO of TheHappyMD.com. TheHappyMD.com did not finance the work related to this manuscript, is not financing the publication of this manuscript, and is not expected to benefit financially from the publication of this manuscript. The work that Dr. Drummond performed related to this manuscript was done under contract with MultiCare Health System. Should this manuscript be published, it is anticipated that Dr. Drummond will include the citation on TheHappyMD website. The other authors have no financial or non-financial conflicts of interest to declare.

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