

ORIGINAL RESEARCH

EFFECTIVENESS OF A MIND-BODY SKILLS TRAINING PROGRAM FOR HEALTHCARE PROFESSIONALS

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Context • Because of the increased use and benefits of mind-body therapies, it is important that healthcare professionals receive training in these modalities.

Objective • To determine whether healthcare professionals who attended the Center for Mind-Body Medicine's training program were incorporating mind-body skills into their professional or personal practices and whether they had a greater sense of life satisfaction.

Design • Repeated measures analysis.

Setting • Annual training programs were held in hotels and conference centers in the US.

Participants • Four hundred fifty-one healthcare professionals attended the programs from 1998 to 2001. Two hundred fifty-nine completed the one-year follow-up survey, and 307 completed the well-being survey.

Intervention • The week-long program included didactic and experiential training in biofeedback, meditation, autogenics,

imagery, and movement/exercise, as well as self-expression in small groups through drawings, written exercises, and genograms.

Main Outcome Measures • Questionnaires on previous training and personal and professional use of mind-body approaches were administered before and one year after the program. The Existential Well-Being (EWB) scale also was administered before and immediately after the training.

Results • There was a significant increase in the personal use of mind-body skills and the number of participants who were teaching their clients to use all modalities and a significant decrease in the number of participants who were referring clients to others for training. Participants also had significantly higher life satisfaction scores after the program.

Conclusion • This professional training program was effective in promoting the personal and professional use of mind-body skills and in enhancing the personal fulfillment of trainees.

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The use of mind-body therapies has been steadily increasing,¹ and there is considerable evidence of efficacy of these therapies in the treatment of coronary artery disease, chronic low back pain, headache, insomnia, and urinary incontinence and in the management of disease-related symptoms of cancer and arthritis.² Mind-body techniques also offer patients an opportunity to participate actively in their own treatment and give them methods for maintaining wellness. In addition, several studies have demonstrated the cost effectiveness of these modalities.² The increased use, benefits, and cost effectiveness of mind-body therapies, taken together, substantiate the need for educating healthcare professionals in this area.

Complementary and alternative medicine (CAM) education programs are being incorporated into many medical schools. The most recent study, using data gathered in 1999-2000, reported that 82 of the 125 medical schools in the US included content related to CAM as part of a required course.³ Mind-body therapies were prominent in these courses. Meditation, for example, was included as a component of the required CAM courses in 25 of the schools. In a study of 53 medical schools, conducted in 2000, 66% of the schools taught meditation and relaxation, 37% taught guided imagery, and 34% taught biofeedback.⁴ Although mind-body medicine is gradually entering medical school curricula, the level of training in this approach is usually minimal. At the graduate and post-graduate levels, most physicians and other healthcare professionals are even less likely to receive adequate training; therefore, there is a need for continuing education in these skills.

Direct experience with mind-body skills is crucial to their clinical use. These practices are by nature experiential and cannot be fully appreciated and skillfully used by those who study

only didactic material on their physiology and clinical efficacy. The experiential component of this training allows healthcare professionals to fully appreciate the effects of these modalities and to incorporate them into their own lives both before and while using them with patients. The personal use of these approaches by healthcare professionals also provides a means to address the stress and burnout that are commonly found in this population. A 22% burnout prevalence has been reported among US physicians,⁵ and another study reported that 43% of nurses had high burnout scores.⁶ By increasing self-awareness and the capacity for self-care, the experiential component of the training gives healthcare professionals a practical way to address their personal stress.

The Center for Mind-Body Medicine (CMBM) training in mind-body-spirit medicine combines large group didactic instruction with the experience of mind-body skills in a small group setting. The small group promotes self-expression and sharing of experiences and supports participants as they begin to use these techniques. It also provides trainees with the experience of participating in the kind of small group that they will later be trained to lead.

One of the main goals of continuing education for healthcare professionals is incorporation of the skills they learned into their practices. One review found that interactive continuing medical education (CME) sessions (on conventional medical topics) that enhance participant activity and provide the opportunity to practice skills can effect significant change in professional practice and may affect healthcare outcomes.⁷ Five of seven CME courses that included both didactic and interactive elements had a positive impact on physician performance.⁷

The purpose of this study was to determine whether a one-week training program in mind-body skills, which included both didactic and experiential components, would result in the incorporation of these skills into the personal and professional practices of participants one year after the program. Because the practice of mind-body skills, with an emphasis on awareness and acceptance, tends to enhance various components of spiritual health, changes in the sense of life satisfaction and life purpose immediately after the program also were measured.

METHODS

Participants

Four hundred fifty-one healthcare professionals attended the CMBM annual training programs from 1998 to 2001, and 259 completed the one-year follow-up survey. The professional distribution of the 259 participants was as follows: 91 physicians (35%); 39 social workers (15%); 37 nurses (14%); 29 psychologists (11%); 21 counselors (8%); and 10 bodyworkers (ie, massage therapists and energy healing practitioners) (4%). The 32 others (12%) included administrators, clergy, educators, researchers, and physical therapists. Of the participants, 198 were women, and 61 were men. Fifteen participants were not in active clinical practice before the training program, and 21 participants were not in active clinical practice one year after the training program.

An additional 20 participants were not in active clinical practice either before or one year after the program. Of the 56 participants who were not seeing clients or patients, 17 were physicians, 11 were nurses, five were psychologists, five were social workers, and the other 18 included administrators, bodyworkers, clergy, researchers, and students.

Three hundred seven participants—233 women and 74 men—completed the existential well-being (EWB) questionnaires before and after the program. Of the 307 participants, 192 were the same people who had completed the one-year follow-up; therefore, the distribution of professions of these 307 participants was nearly the same as the 259 who completed the one-year follow-up. The distribution of those who completed the Existential Well-Being scale was as follows: 99 physicians (32%); 47 social workers (15%); 51 nurses (17%); 37 psychologists (12%); 27 counselors (9%); and nine bodyworkers (3%). The 37 others (12%) included administrators, clergy, educators, chiropractors, physician assistants, and physical therapists. One participant did not specify her professional area of practice.

Program

The CMBM seven-day annual training program was first held in 1994. It was developed by the CMBM founder and director and his colleagues to train health and mental healthcare professionals in the use of mind-body approaches with individuals and groups. Large-group didactic sessions that last approximately 1.5 hours are followed by two-hour, small-group experiential sessions. There are 22 hours of large-group training and 20 hours of small-group experience.

The program is designed to educate participants about the various modalities included in the mind-body approach and to give them the experience of these modalities in small group sessions. The small groups also provide opportunity for self-awareness and self-expression through words, drawings, genograms, and movement. The experiential component is a central part of the program. It gives participants an intimate understanding of the effects that these modalities have on their own thoughts and feelings and allows them to experience firsthand the power of self-expression and group support.

The large-group didactic sessions included lectures on the “fight or flight” response and stress, posttraumatic stress (in 2001), psychoneuroimmunology, autogenic training, biofeedback, imagery, meditation, breathing, music, genograms, exercise/movement, spirituality and healing, ritual, and death and dying. After each large-group session, participants attended a two-hour, small-group session. Each group consisted of eight to 10 participants and one leader. All leaders had been trained extensively by the CMBM. At the end of each day of training, the leaders participated in group supervision.

Each group began with a brief meditation and a “check-in,” which provides an opportunity for self-expression. The check-in focused mainly on participants’ feelings about the training and any other thoughts or concerns they had during check-in. It was a time for both self-awareness and self-expression. Each small-

group session taught a particular modality that included experiential exercises in autogenics, biofeedback, guided imagery, and several forms of meditation. These sessions also included the use of drawings that mobilize the expression of feelings and thoughts; the construction of genograms to explore strengths and vulnerabilities in participants' own families; and the use of written dialogue to explore the unconscious meaning of symptoms and ways to address them. After each exercise, participants shared their experiences. Each group concluded with a brief meditation.

Self-Report Surveys

Questionnaires administered before the program and one year after the program included questions on the following modalities: biofeedback, autogenics, imagery, meditation, exercise/movement (ie, sports, yoga, martial arts, walking, dance), and psychoeducational support groups. Participants were asked whether they had received previous training in any of these modalities. They also were asked whether they had practiced any of the modalities for their personal benefit in the last two months. Healthcare professionals who were seeing clients or patients were asked if they trained their clients or referred them to other trainers for each modality. The choices were as follows: (a) train; (b) refer; (c) train some and refer some; or (d) neither train nor refer. For the question on the psychoeducational groups, they were asked about leading groups and the word "lead" was substituted for "train." The choices for the psychoeducational support groups were as follows: (a) lead; (b) refer; (c) lead some and refer some; or (d) neither lead nor refer.

One-year follow-up questionnaires were mailed to participants of the 1998-2001 programs. The 2001 surveys were electronically posted on the CMBM website, and participants were contacted by e-mail and invited to answer the survey electronically. Questionnaires were mailed to those who could not be reached by e-mail. Due to the low response rate in 1998 (43%), one additional follow-up survey was mailed or e-mailed in 2001 to participants of the 1999-2001 programs who did not respond to the first mailing. The second mailings resulted in an increased response rate. The overall response rate for all years was 61%. This response rate is based on the 429 participants who had filled out the initial surveys at the training program. Twenty-two people (5%) did not fill out initial surveys at the training programs and therefore were not contacted for follow-up.

The EWB subscale of the spiritual well-being (SWB) scale was administered before and after the program.⁸ This 10-question instrument is designed to measure levels of life satisfaction and purpose. The EWB scale includes statements such as, "I feel that life is a positive experience," "I feel unsettled about my future," and "I believe there is some real purpose for my life." Each statement is rated on a six-point, Likert-type scale with responses ranging from "strongly agree" to "strongly disagree." About half of the items are worded in reversed direction to minimize response set bias. The SWB scale and its subscales have been shown to have good validity and reliability.

The test-retest reliability of the EWB scale in three samples has been reported to be above 0.85, and coefficient alpha measurements of internal consistency ranged from 0.78 to 0.86.⁸ In this study, Cronbach's alpha was 0.79 and 0.83 for the EWB scale before and after the program, respectively.

Attendees were informed that participation in this research evaluation was voluntary and that confidentiality of individual results would be maintained. Participation in the survey from the programs in 1998 to 2000 indicated voluntary consent. Written consent forms were obtained from participants of the 2001 program.

Statistical Analysis

The numbers of participants who were using the modalities in each category (ie, train, refer, both train and refer, neither train nor refer) or using the modalities in their personal practice before and at follow-up were compared using the McNemar test because the data was dichotomous. Differences in the mean number of modalities used were analyzed using a paired *t* test. Cochran's Q test was used to analyze data on the participants' previous training in the various modalities. Post hoc analysis was done using the McNemar test with Bonferroni correction to accommodate for the increased risk of a Type I error. The adjusted alpha was $\alpha = .05/15 = .003$. Differences in the EWB scale scores were analyzed using Wilcoxon signed ranks test. This nonparametric test was used because the post-program data were not normally distributed and, therefore, did not meet the assumptions of parametric analysis. A Chi-square test for two independent samples was used to analyze the differences in distributions of professions and gender for possible respondent bias in the following groups: (a) responders and non-responders to the one-year follow up and the pre- and post-EWB scale; and (b) participants with and without clients who responded to the one-year follow-up. When statistical significance was found, standardized residuals were analyzed to determine which cells in the contingency table were influencing the outcome.¹⁰

RESULTS

Previous Training

Previous training for each of the modalities was reported as follows: biofeedback 26% (n=257); autogenics 45% (n=258), imagery 71% (n=258); meditation 86% (n=257); exercise/movement 78% (n=259); psychoeducational groups 73% (n=259). All participants, including those without clients or patients, were included in this analysis. Variations in the numbers of participants in the above categories are due to categories that were left blank on a few questionnaires. Participants had significantly less prior training in biofeedback and autogenics ($P < .01$) compared to the other modalities. They had significantly more training in meditation ($P < .01$) than in all the other modalities except exercise/movement.

Personal Use of Mind-Body Skills

All participants were included in the analysis of personal

use of mind-body skills, regardless of whether they had an active clinical practice at the time of the survey. There was a significant increase in the personal use of all mind-body modalities except psychoeducational groups in the two months before the one-year follow-up compared to during the two months before the training program (Table 1). The average number of modalities used during this time also significantly increased, from 3.2(1.3) (mean [SD]) in the two months before the program to 4.1(1.2) in the two months before the one-year follow-up (Table 2).

Professional Use of Mind-Body Skills

The number of participants who trained clients or patients was significantly higher ($P < .01$) for all modalities one year after the training program (Table 3). The number of participants leading psychoeducational groups also increased significantly ($P < .01$). More participants were training their clients in the use of mind-body skills after the program, and fewer were referring their clients to other trainers. Referrals significantly decreased for all modalities except exercise and movement. One year after the training program, significantly more participants indicated that they both trained some patients and referred some patients in the following modalities: biofeedback, autogenics, imagery, and exercise/movement. There were no significant changes in the train-and-refer category for meditation or psychoeducational groups. The number of participants who neither trained nor referred was significantly lower one year after the program for all modalities except psychoeducational groups (data not shown). Participants were training their clients in significantly more modalities one year after the program (1.9 [standard deviation, 1.9]) than before the program (0.8 [1.2]). The number of modalities in the train-and-refer category also increased (1.5 [1.5] before versus 1.9 [1.7] after). The number of modalities for which participants neither trained nor referred to other trainers were both significantly decreased (Table 2).

Personal Well-Being

There was a significant ($P < .01$) increase in EWB scale scores after the training program. The mean score before the program was 49.9(6.8), and after the program, the mean score was 53.5(5.7) ($n=307$). The highest possible score on this scale is 60. The overall increase of 3.6 points is meaningful for this subscale and the ceiling effects (ie, a large proportion of respondents scoring at the highest level of the scale) that have been

reported for the religious well-being (RWB) subscale of the SWB scale have not been prominently observed with the EWB subscale.¹¹ Cohen's d effect size was 0.6, indicating a moderate clinical difference from before to after the program.

Determining Non-Respondent Bias

To determine whether there were any differences between those who did respond and those who did not respond to either the one-year follow-up or to the pre- and post-existential well-being questionnaires, the genders and professions of the responders and non-responders in these groups were compared. There was no statistically significant difference in the gender distribution of those who did respond and those who did not respond to either the one-year follow-up or to the pre- and post-EWB questionnaires. There also was no statistically significant difference in the distribution of professions of the responders and non-responders to the one-year follow-up. There was a difference in the distribution of professions of those who did and did not respond to the pre- and post-existential well-being questionnaire; however, on analysis of the standardized residuals to see which groups were affecting this outcome, the difference in the distribution of professions was accounted for by an "other" category that included all the professions that consisted of one to nine people (most professions in this category had three or fewer people). Without this "other" category, there was no difference in the distribution of the professions of this group.

Twenty-two percent of those who responded to the one-year follow-up did not have an active clinical practice before, after, or both before and after the program. Because it was expected that most people attending the program would have active clinical practices, this number was surprisingly high. Although the only responses from this group that were reported were their personal use of mind-body skills and previous training in these skills, it was still of interest to see whether there were any differences between participants with and participants without clinical practices. The only additional data gathered on this group were their gender and professional training. Therefore, a similar analysis was done comparing the genders and professional training of those with a clinical practice and those without a clinical practice. There was no statistically significant difference in the distribution of genders or

TABLE 1 Personal Use of Mind-Body Skills

	N	Before (%)	1 Year After (%)	P Value
Biofeedback	256	11	34	<.0001
Autogenics	250	40	71	<.0001
Imagery	257	68	83	<.0001
Meditation	256	85	96	<.0001
Exercise	257	85	93	.0017
Groups	256	26	35	.0117

TABLE 2 Number of Modalities

	N	Before Mean (SD)	1 year After Mean (SD)	P Value
Personal Use	244	3.2 (1.3)	4.1 (1.2)	<.0001
Professional Use:				
Train	192	0.8 (1.2)	1.9(1.9)	<.0001
Refer	192	1.3 (1.4)	0.9 (1.1)	<.0001
Train & Refer	192	1.5 (1.5)	1.9 (1.7)	.0001
Neither Train or Refer	192	2.3 (1.9)	1.3 (1.7)	<.0001

professional training backgrounds of those with a clinical practice and those without a clinical practice who responded to the one-year follow up. The 21 counselors with clients were put in the “other” category for this analysis because there were no counselors without clients.

DISCUSSION

This follow-up study included four years of participants from the Center for Mind-Body Medicine’s Professional Training Program and had an overall response rate of 61%. This response rate is comparable to rates seen in voluntary mail surveys published in medical journals, in which physicians and non-physicians had mean response rates of 54% and 68%, respectively.¹² It is of note that 22% of respondents did not have an active clinical practice before, after, or both before and after the program.

As a group, these healthcare professionals already had some training in mind-body skills before attending the training program. Compared to participants in other surveys, this group had more personal experience and more training in imagery and meditation than other healthcare professionals. In the two months preceding the training program, meditation and imagery were used at least once by 85% and 68% of the participants, respectively. These values are much greater than those previously reported, where the use of imagery by healthcare professionals was 13% to 39% and the use of meditation was 38% to 48%.¹³⁻¹⁶ Based on the level of personal practice of mind-body modalities, it would be expected that training program participants would have had more previous training in these modalities than other groups of healthcare professionals. The number of participants with previous training in imagery and meditation was 71% and 86%, respectively. These values were much higher than those found in other surveys, where previous training in meditation and imagery was found in 16% to 58% and 15% to 39% of participants, respectively.^{13,14,17,18} A higher level of personal practice and more familiarity with mind-body skills, especially imagery and meditation, would be expected given that this group had committed itself to a week of residential exper-

iential and didactic training to deepen their understanding and enhance their use of these skills.

Despite the familiarity with and prior personal use of mind-body skills, there were significant increases in the use of all of the skills in participants’ personal practices one year after the program. The largest increases were in the areas of biofeedback and autogenics. The use of biofeedback increased from 11% to 34%, and the use of autogenics increased from 40% to 71% (Table 1). Meditation was the most popular modality for personal practice. Ninety-six percent of the participants reported using meditation at least once in the two months before the one-year follow-up.

One of the advantages of teaching multiple modalities in the CMBM training is that different modalities appeal to different people and can be applied to the same person in different circumstances. For example, an active, expressive exercise may be more appealing and relaxing to a tense, angry adult or a restless teenager than a quiet meditation. The use of a thermistor to objectively validate the physiological effects of biofeedback and autogenics is important to many people and may account for the increase in the personal use of these two modalities. In addition to the overall increase in the incorporation of each modality into personal practice, there was also a significant increase in the number of modalities used. This suggests that participants were expanding their repertoire of mind-body skills and were incorporating skills that they had not used before the training.

Participants in the CMBM training are encouraged to practice on their own the skills they learn. The training lectures emphasize the scientific evidence of the efficacy of relaxation, biofeedback, imagery, meditation, and group support. The small group encourages participants to determine for themselves whether, in what way, and when these techniques are helpful to them. The increase in the incorporation of mind-body skills in participants’ personal practices at the one-year follow-up suggests that the participants experienced benefits from these practices and would be more likely to encourage their clients and patients to practice the skills.

Data collected for professionals with active clinical practices show that the program was also successful in equipping them to integrate mind-body skills into their work. There was a significant increase in the number of participants who were training their clients and patients to use each of the modalities. There was also a significant increase in the number of participants who were both training and referring in most of the modalities (ie, biofeedback, autogenics, imagery, exercise, and movement). Because participants were doing more training, it is likely that they were doing less referring of their clients and patients to others. This decrease in referrals was observed for all modalities except for exercise and movement, for which 34% of participants continued to refer their clients and patients to others.

Programs that incorporate mind-body skills and group support may have a spiritual impact.¹⁹ It is not surprising that this occurred in the CMBM program. The central approach of the training is meditative, and its world-view, which holds that all experience can be a teacher, is compatible with many spiritual and religious traditions. Particular spiritual components that may have

TABLE 3 Professional Use of Mind-Body Skills

	N	Train (%) [*]		Refer (%) [†]		Train & Refer (%) [‡]	
		1 year		1 year		1 year	
		Before	After	Before	After	Before	After
Biofeedback	199	3	20	27	17	9	23
Autogenics	196	11	38	11	5	18	29
Imagery	201	27	49	14	4	22	31
Meditation	200	24	43	16	8	30	38
Exercise	202	7	15	39	34	26	38
Groups [§]	200	9	25	28	19	35	34

^{*} All Modalities *P*<.01;

[†] Imagery, Meditation *P*<.01; Biofeedback, Autogenics, Groups *P*<.05; Exercise Not Significant (NS);

[‡] Biofeedback, Autogenics, Exercise *P*<.01; Imagery *P*<.05; Meditation, Groups NS;

[§] The language used for groups in the questionnaire was “lead” rather than “train.”

been enhanced include self-awareness, connectedness with others, and finding a meaning and purpose in life. This spiritual impact was often evident in the comments of participants during the training program and was confirmed by increased scores in the EWB scale immediately after the program. This enhanced sense of well-being and purpose in life also may have influenced the participants' desire to continue to practice the mind-body skills they learned and to share them with patients and clients in their clinical practices.

In summary, this study found that healthcare professionals who participated in the CMBM's intensive, experiential mind-body skills training program had significantly increased their personal and professional use of these skills one year later. Participating in the training catalyzed an increased sense of life purpose and satisfaction, which may, in turn, have motivated participants to use these skills on their own and to teach them to clients and patients. Because this program trains participants to work with groups as well as individuals, it enables graduates to help large numbers of patients, clients, and students to deal positively with their symptoms of chronic illness, improve their health, and enhance their own well-being.

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