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Mindfulness-Based Cognitive Attitude Training for Primary Care Staff: A Pilot Study

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This pilot study explores feasibility and outcomes of a newly developed mindfulness-based cognitive attitude training program for health care personnel. The program was designed as an intervention to reduce the negative effects of stress on health care personnel, on both a personal and professional level, as well as to encourage personal well-being and improved management of the caregiver-patient relationship. The study group ($n = 52$) consisted of individuals from various categories of caregivers within a primary care setting. The study includes pre- and postintervention assessments and a 3-month follow-up assessment of levels of mindfulness (Mindfulness Attention Awareness Scale), quality of life (the WHO-5 Well-Being Questionnaire), and perceived stress (two VAS scales). As a group, course participants demonstrated significant positive changes reflected in all assessment scales after completing the course. These positive changes persisted at a 3-month follow-up assessment. The study results indicate the feasibility of this program and a need for continued research with a more powerful study design, possibly supplemented with a qualitative survey.

Keywords: mindfulness; well-being; stress; health care professionals; intervention

Mindfulness-based interventions have received increased research support over the past few years. The method is used for stress reduction among both healthy individuals and, within the health care system, patients with chronic diseases (Baer, 2003; Grossman, Niemann, Schmidth, & Walach, 2004). Mindfulness-Based Stress Reduction (MBSR) was developed by Dr. Jon Kabat-Zinn at the University of Massachusetts and has been used in health care settings for about 25 years (Carlson, Speca, Patel, & Goodey, 2003; Kabat-Zinn, Lipworth, & Burney, 1985; Kabat-Zinn, Lipworth, Burney, & Sellers, 1987; Kabat-Zinn et al., 1998; Kaplan, Goldenberg, & Galvin-Nadeau, 1993). The impact of this approach can be confirmed through modern investigative techniques (Davidson et al., 2003). Recent studies show that MBSR increases the level of mindfulness and decreases the level of perceived anxiety and stress among healthy individuals (McBee, 2003; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003).

Mindfulness training has generated great interest within the discipline of cognitive therapy. Researchers have shown that treatment with mindfulness-based cognitive therapy

(MBCT), in which mindfulness plays a central role, contributes to reducing the relapse rate of recurrent depression (Ma & Teasdale, 2004; Teasdale et al., 2000). Mindfulness is also an important element in newer cognitive therapies such as dialectical behavioral therapy and acceptance and commitment therapy.

Mindfulness is defined as the ability to direct attention, in a nonjudgmental and accepting way, to the experiences that take place in the present moment, both within individuals themselves and in their environment (Bishop et al., 2004; Kabat-Zinn, 1990). The core of mindfulness meditation training is to develop the ability to be aware of one's thoughts, emotions, and physical sensations in the present moment. All that emerges within consciousness is included and perceived with acceptance. Over time, an attitude of mindfulness may lead to a decrease in unconscious reactions to thoughts, emotions, and events, and instead, more conscious action. With the ability of individuals to better understand and tolerate their emotions, there may be increased ability to perceive and understand the feelings of other human beings. Such empathic ability is considered to be essential to the establishment of a good therapeutic relationship. The MBSR program format includes both formal meditation training and an emphasis on maintaining mindfulness in daily life.

The cognitive approach is a proven method in health care in Sweden and is based on cognitive theory about the impact of thought content on emotions and behavior (Palm, 1999). It is based on equality between therapist and patient, rooted in Socratic inquiry aimed at supporting the patient's ability to objectively observe and explore special situations in his or her current life, including thoughts, feelings, and behavior. The purpose is to motivate the patient to consider multiple options and to explore other behavioral possibilities beyond what has become routine and reflexive.

There are many overlapping points between mindfulness/MBSR and the cognitive approach. For example, both methods aim to improve quality in encounters with reality, to assume a nonjudgmental approach, and to help individuals to become more self-aware and improve their ability to accept responsibility for their lives.

Consequently it seems natural to combine these two elements in a single educational program for primary care staff with the purpose of encouraging more effective encounters with patients and also to increase self-awareness and job satisfaction among staff.

PURPOSE

The purpose of this research study is to explore the feasibility and usefulness of a mindfulness-based cognitive attitude training program in a group of mixed primary care staff concerning level of mindfulness, perceived well-being, and perceived stress level. The mindfulness-based cognitive attitude training program was designed and implemented for the purpose of reducing the negative effects of stress among caregivers, on both a personal and professional level, as well as to encourage personal well-being and improved management of the caregiver-patient relationship.

QUESTIONS

Questions addressed in this preliminary study include the following: Has the level of mindfulness among participants changed in conjunction with the course—and if so, how? Has the course changed the participants' perception of well-being—and if so, how? Has the course changed the participants' perception of stress—and if so, how? Are there indications that there may be a correlation between such changes, if any, pertaining to the level of mindfulness and intensity of practicing mindfulness exercises at home?

METHOD

The course evaluated in this study is, as far as is known, Sweden's first mindfulness-based cognitive attitude training program for this population. The project was a prospective pilot study. A comparison using a control group was originally planned but could not be successfully carried out due to practical difficulties beyond the control of the research team.

The study was approved by the institutional review board for medical research and development in County Council of Norrbotten. Participants for the study were recruited from health professionals and staff of the Primary Care division of the County Council of Norrbotten, in Northern Sweden. The local information system announced that health care personnel were invited to take part in a mindfulness-based cognitive attitude training program. Fifty-four staff applied for the program, and all were accepted for participation in the study. Two subsequently declined, so that a total of 52 employees participated in the study. Personnel categories included doctors, nurses, physical therapists, occupational therapists, and social workers. The 29 doctors in the group included family physicians, residents, and specialists in general practice.

The course began in the spring of 2005. Participants attended the training program during their normal working hours, which included some evening hours.

The course was organized into four workshops, three of them 2 days in duration and an additional 1 day workshop, for a total of 7 days. There were 2- to 4-week intervals between workshops. The total number of hours for the program was approximately 50.

In the training program, mindfulness exercises were combined with lectures and cognitive attitude exercises. The course was taught by two teachers, both of whom were medical doctors—one was a psychiatrist and cognitive psychotherapist and the other was a general practitioner and mindfulness instructor.

The content of the training consisted of formal and informal mindfulness practice, based on the MBSR program, as well as cognitive theory, Socratic inquiry, development of an empathetic relationship to oneself, affect competence, development of personal role models and alliance-creating strategies and methods. All participants were assigned homework consisting of practicing mindfulness with the following material provided to them:

- A 20 page booklet, describing the definition and concept of mindfulness within a medical/psychological framework. The booklet also described the three mindfulness exercises for practice each week of the course.
- A CD with a guided formal meditation training log in which to record each day's exercises. The CD was created by one of the mindfulness instructors. The formal meditations (body scan, sitting meditation, and yoga) were between 17 and 19 minutes long, compared to 45 minutes in MBSR training CDs.

The course began with a focus on the caregiver and the ability to care for oneself in which the mindfulness practice was one important part. To develop affect competence and an empathetic relationship to oneself were other important parts of the program. Curiosity in what creates positive affect in patients' daily life was encouraged, as was empathy and equanimity, especially when encountering difficult situations.

Study participants filled in a self-assessment questionnaire, described below, before and after the program ended, and again 3 months after the conclusion of the program.

FLOW CHART AND ATTRITION RATE REPORT

All doctors and staff in primary care of the County Council of Norrbotten received the invitation to participate in the course. Those who accepted the offer to take part in the study

received a letter with a response envelope. Study participants filled in the Occasion 1 questionnaire before the course began. They then took part in the formal course and practiced at home. After the course ended, study participants completed the Occasion 2 questionnaire. Four participants (7.5%) dropped out of the course. Study participants received the Occasion 3 questionnaire mailed to their homes 3 months after they completed the course. Seven of these follow-up questionnaires were not returned (13.5% dropout). There was a total of 21% dropout.

MEASUREMENT

The level of mindfulness was measured via the Mindfulness Attention Awareness Scale (MAAS) (Brown & Ryan, 2003). The MAAS has high internal consistency and good convergence and discriminant validity. It is a self-assessment instrument consisting of 15 multiple-choice questions that measure the presence or absence of attention to, or awareness of, what is happening in the present. The maximum possible score on the MAAS is 90 points. Higher scores reflect higher levels of dispositional mindfulness.

Quality of life was measured via the WHO-5 Well-Being Questionnaire (Bech, 2004). The WHO-5 Well-Being Index is a self-assessment instrument consisting of five multiple choice questions designed to measure the level of subjective psychological well-being. It was developed for the WHO Collaboration Centre for Mental Health at Frederiksborg General Hospital, Hillerød, Denmark, and has been used in several European studies. The maximum possible score is 100 points. A higher score indicates a higher level of psychological well-being.

Two visual analog scales (VAS) (Wewers & Lowe, 1990) were used to measure levels of perceived stress. The VAS methodology was first used to measure pain and has been successfully applied to measure other subjective phenomena such as state of health, recovery of health, satisfaction with health care, and perceived stress. VAS scales generally have good validity and reliability. Typically, the scale consists of a straight horizontal 10 cm long line with a statement at each end. The statements express the extremes of the experience to be measured. At the time of measurement, participants are asked to draw a vertical mark through the point on the line that best coincides with how they perceive their situation. Points are calculated by measuring the distance in millimeters from one endpoint to the participant's mark. This study used two VAS scales. VAS 1 measured how stressed the individuals felt in response to what happened at work over the past 7 days. VAS 2 measured perceived stress during life outside the workplace. At follow-up and through statistical analysis, a decreasing score indicated a decrease in perceived stress.

A simple questionnaire with numeric multiple-choice questions was created for this study to measure the intensity of mindfulness training at home. The question was, How many times per week have you practiced mindfulness according to the course program: (a) 5-6 days/week, (b) 3-4 days/week, (c) 1-2 days/week, (d) 0 days/week?

STATISTICS

Data were entered and processed via the SPSS-12 statistics program. Descriptive tests and nonparametric tests included the Mann-Whitney *U* test, Wilcoxon signed-rank test, and Kruskal-Wallis test. Choice of test depended on the measurement instruments used, including self-assessment of experience and psychological condition as well as absence of equal scale steps in the VAS scale.

TABLE 1. Median values (min-max) of the administered scales on Occasion 1 (before the course), Occasion 2 (after course completion), and Occasion 3 (at 3-month follow-up) obtained from the entire group of participants. *P* values for measuring change in the administered tests between measurement occasions, according to the Kruskal-Wallis test.

	Oc 1	Oc 2	<i>P</i> Value for Change Oc 1-Oc 2	Oc 3	<i>P</i> Value for Change Oc 2-Oc 3	<i>P</i> Value for Change Oc 1-Oc 3
MAAS	60 (38-86)	64 (39-81)	.020	67 (40-81)	.067	.015
WHO	56 (20-92)	64 (28-84)	.001	68 (36-88)	.220	.001
VAS1	52 (13-92)	27 (7-97)	<.001	24 (3-67)	.298	.001
VAS2	46 (0-99)	23 (0-84)	.003	20 (0-82)	.088	.001

Oc = occasion; MAAS = Mindfulness Attention Awareness Scale; WHO = WHO-5 Well-Being Index; VAS = visual analog scale.

RESULTS

Participants consisted of 52 people, with 14 men and 38 women. Occupational breakdown was 29 doctors and 23 other health care staff. Age ranged from 28 to 58.

Results are presented in Table 1. The median values are presented because of the large spread of the absolute values. The level of mindfulness as measured by the MAAS increased in the entire group between Occasion 1 (before the course) and Occasion 2 (after the course) with a significance level of $p = .02$. This increased level of mindfulness persisted to Occasion 3 (3-month follow-up) with a significance level of $p = .015$.

Subjective well-being increased in the entire experimental group between Occasion 1 and Occasion 2 ($p = .001$) and persisted until Occasion 3 ($p = .001$).

Perception of stress in the workplace decreased in the entire experimental group between Occasion 1 and Occasion 2 with a significance level of $p = .01$, which persisted until Occasion 3 ($p = .001$).

Perception of stress outside the workplace decreased in the entire experimental group between Occasion 1 and Occasion 2 with a significance level of $p = .01$, which persisted until Occasion 3 ($p = .001$). Figure 1 is the graphical presentation of the results.

Analysis of the change in level of mindfulness indicates that participants who practiced more achieved a significant increase in mindfulness ($p = .03$), which persisted at the 3-month follow-up ($p = .003$). Increases in the level of mindfulness in individuals who only practiced a little or not at all was not significant. The results are presented in Table 2.

DISCUSSION

This pilot study investigated the feasibility and effects of the newly created mindfulness-based cognitive attitude training program in terms of increasing the level of mindfulness, decreasing stress, and improving well-being in a mixed group of health care providers in primary care.

The study contributes to the acquisition of new knowledge about the use of a mindfulness-based intervention in a health care setting and provides information about a newly created program that could serve as a tool to improve well-being among health professionals. Knowledge derived from the study could serve as a guideline for the development of larger future studies.

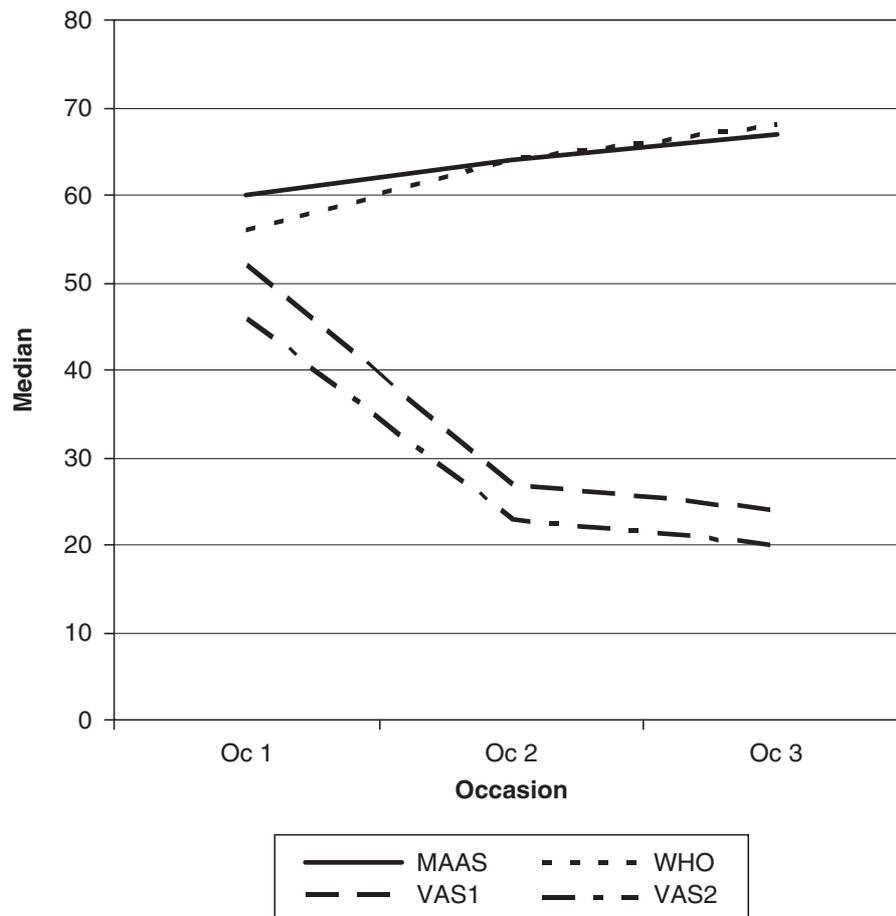


Figure 1. Change in the level of mindfulness as measured by the Mindfulness Attention Awareness Scale (MAAS), psychological well-being as measured by the WHO-5 Well-Being Index, and perception of stress in the workplace as measured by VAS1 and in life outside the workplace as measured by the VAS2 scale (VAS = visual analog scale).

TABLE 2. Median values (min-max) of the Mindfulness Attention Awareness Scale (MAAS) measurement on Occasion 1 (before the course), Occasion 2 (after course completion), and Occasion 3 (at 3-month follow-up) depending on intensity of practicing mindfulness-exercises at home. Practiced more means 3 to 6 days/week, practiced less means 0 to 2 days/week. *P* values for measuring change in MAAS between occasions, according to the Kruskal-Wallis test.

	Oc 1	Oc 2	Oc 3	<i>P</i> Value for Change Oc 1-Oc 2	<i>P</i> Value for Change Oc 2-Oc 3	<i>P</i> Value for Change Oc 1-Oc 3
Practiced more	57.00 (38-77)	68.00 (53-81)	70.00 (58-76)	.03	.423	.003
Practiced less	60.50 (38-86)	62.00 (39-78)	66.50 (40-81)	.799	.219	.244

Oc = occasion.

The low dropout rate during the program serves as an indicator of the feasibility of utilizing this program for health professionals in a health care work place. Follow-up of the

experimental group shows that the level of mindfulness among course participants increased during the course and persisted at the 3-month follow-up. Participants who regularly practiced mindfulness exercises at home increased the level of mindfulness/conscious awareness more than those who only practiced a little or not at all. Participants' perceived quality of life/well-being increased in a similar fashion. Their perception of stress both in and outside the workplace decreased during the course and at 3-month follow-up. The above findings coincide well with earlier research in this area.

The study design has several limitations. For example, it would have been more satisfactory to have a control group to compare with the experimental group. Such a group would have been matched for gender, age, education, work experience, and other possibly confounding factors, and participants would have been randomly distributed between the groups. We were unable to accomplish this in this pilot study for practical reasons.

Some may question whether the chosen measurement instruments functioned properly and were able to answer the study's questions. The difficulties in selecting methods for measuring quality of life and stress cannot be understated. Most measurement scales are designed for people with specific diseases and not for healthy individuals. A future study could use better methods to assess the results of efforts to reduce stress and increase well-being in healthy individuals. At the time of the study, the MAAS scale had not been validated for the Swedish population. In addition, other scales for measuring mindfulness will soon become available. These scales are considered to give a more complete picture over how mindful a person is. Because the MAAS scale was in English, it may have been more difficult for participants to express the nuances of their perception of any changes.

Another limitation of study design is that it cannot be said what part of the course was effective, because mindfulness and cognitive approaches are integrated elements of the same course. For this reason, it would be interesting to see another study design in which course participants are trained only in mindfulness rather than both approaches.

It would be interesting to expand the study with a qualitative study focused on exploring the program's impact, including understanding what practicing mindfulness has meant for each of the participants, both personally and professionally.

A decreased level of stress among those who practice mindfulness in combination with increased presence in encounters with patients could considerably improve the quality of patient encounters. Consequently, training in mindfulness could become a valuable asset in the education of all health care personnel.

SUMMARY

Results show that mindfulness and the perceived well-being of participants increased, while the degree of stress at work and at home decreased, during course participation. The degree of positive change in mindfulness shows a positive correlation with the extent of practicing mindfulness at home.

Due to limitations in the study's design, we cannot draw any definite conclusions about the effects or rule out alternative explanations for the results. Viewed in the light of earlier research in this field, study results indicate a need for continued research with a more powerful study design, possibly supplemented with a qualitative survey.

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