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Journal of Psychosomatic Research 62 (2007) 189–195

Journal of Psychosomatic Research

# Effectiveness of a meditation-based stress management program as an adjunct to pharmacotherapy in patients with anxiety disorder

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Received 13 June 2006

**Abstract**

**Objective:** The objective of this study was to examine the effectiveness of a meditation-based stress management program in patients with anxiety disorder. **Methods:** Patients with anxiety disorder were randomly assigned to an 8-week clinical trial of either a meditation-based stress management program or an anxiety disorder education program. The Hamilton Anxiety Rating Scale (HAM-A), the Hamilton Depression Rating Scale (HAM-D), the State–Trait Anxiety Inventory (STAI), the Beck Depression Inventory, and the Symptom Checklist-90—Revised (SCL-90-R) were used to measure outcome at 0, 2, 4, and 8 weeks of the program. **Results:** Compared to the education group, the meditation-based stress management group showed significant improvement in scores on all anxiety scales (HAM-A, $P$=.00; STAI state, $P$=.00; STAI trait, $P$=.00; anxiety subscale of SCL-90-R, $P$=.00) and in the SCL-90-R hostility subscale ($P$=.01). Findings on depression measures were inconsistent, with no significant improvement shown by subjects in the meditation-based stress management group compared to those in the education group. The meditation-based stress management group did not show significant improvement in somatization, obsessive–compulsive symptoms, and interpersonal sensitivity scores, or in the SCL-90-R phobic anxiety subscale compared to the education group. **Conclusions:** A meditation-based stress management program can be effective in relieving anxiety symptoms in patients with anxiety disorder. However, well-designed, randomized, and controlled trials are needed to scientifically prove the worth of this intervention prior to treatment.


*Keywords:* Anxiety disorder; Stress management; Meditation

## Introduction

Meditation includes techniques such as listening to breathing, repeating a mantra, detaching from thought processes, focusing attention, and bringing about a state of self-awareness and inner calmness [1]. In Asia, many forms of meditation have been developed among Taoists, Buddhists, and traditional Chinese medicine practitioners throughout history [2]. Meditation has been recently classified as a technique that induces a set of integrated physiological changes, termed *relaxation response* [3], and is now an accepted and effective complementary treatment for many psychosomatic disorders, such as chronic pain, fibromyalgia, cancer, epilepsy, and psoriasis [4–8].

Meditation affects the endocrine system by inducing a progressive decrease in serum thyroid-stimulating hormone, growth hormone, and prolactin levels [9], and also acts on the immune system to increase the number of $CD3^+$ lymphocytes and the antibody response to influenza vaccine [10,11].

Group sessions of meditation-based stress management can be effective in teaching people how to take better care of

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doi:10.1016/j.jpsychores.2006.09.009

themselves, live healthier lives, and adapt more effectively to stress. Of a variety of possible meditation programs, the mindfulness-based stress reduction (MBSR) program of Kabat-Zinn [12] is a well-defined, systematic, and patient-centered approach that uses relatively intensive training in mindfulness meditation as the core of the program.

Anxiety disorders, such as panic disorder and generalized anxiety disorder, are chronic and recurrent [13]. Patients with anxiety disorder are usually prescribed anxiolytics, unless contraindicated. However, a combination of pharmacotherapy and other kinds of treatment, such as cognitive therapy and cognitive–behavioral therapy, should be considered for these patients to maximize their chance of adapting successfully to social and occupational environments.

Miller et al. [14] and Angst and Vollrath [15] showed that the MBSR program could effectively reduce symptoms of anxiety and panic, and could help to maintain these reductions in patients with generalized anxiety disorder, panic disorder, or panic disorder with agoraphobia. MBSR may provide a good candidate program for patients with anxiety disorder who do not want pharmaceutical medication, are pregnant, or want additional treatment. However, this study was limited by the noninclusion of either a randomly selected comparison group to test for placebo effects or a control group to test for concomitant medication effects [14,15]. Therefore, a carefully controlled trial should be implemented before this kind of stress management program is applied to patients with anxiety disorder. We have previously assessed the effectiveness of a newly developed meditation-based stress management program, which uses meditation techniques that are widely practiced among Koreans to improve health, in a preliminary trial on a group of pregnant women [16]. The meditation in this program was not the same as that used in the MBSR regime, although the programs have mindfulness meditation in common. We therefore aimed here to scientifically demonstrate the effectiveness of our group meditation program for stress management in patients with anxiety disorder.

## Methods

### *Subjects*

The study involved 46 patients with anxiety disorder. Subjects were recruited, through advertisement, among patients who were on treatment on an inpatient or an outpatient basis at the Department of Psychiatry, Pochon CHA University College of Medicine from March 2003 to August 2003. Subjects were between 20 and 60 years of age and fulfilled the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) criteria for generalized anxiety disorder or panic disorder with or without agoraphobia, as diagnosed by two psychiatrists using the *Structured Clinical Interview for DSM-IV* Axis I disorders [17,18]. In all subjects, symptoms were not relieved after more than 6 months of pharmacotherapy. Written informed consent was obtained after a full description of the study had been presented to the subjects. Prior to the study, the subjects were treated with the antidepressant paroxetine (20 mg/day), sertraline (50–100 mg/day), or fluvoxamine (50–100 mg/day) and with the anxiolytic alprazolam (0.125–0.5 mg/day). Psychiatrists confirmed that acute symptoms in the patients had stabilized and had remained unchanged for the past 2 months. The medications and dosages were not altered during the study. Exclusion criteria included any history of substance abuse or dependency, other psychiatric comorbidities, significant medical problems (such as diabetes mellitus, hypertension, tuberculosis, hepatitis, or pregnancy), and involvement in litigation or compensation.

### *Assessment*

Subjects were randomly assigned to either the meditation program or the education program. Subjects were contacted on the day before the program started to encourage participation. Three subjects in the meditation group and two subjects in the education group dropped out during the study; thus, data from 21 meditation group subjects and 20 education group subjects were used for the final analysis. Subjects in the meditation group underwent weekly sessions of meditation treatment for 8 weeks, while the education group subjects received weekly sessions of general information on anxiety disorder. Both groups were assessed at baseline (0 week) and at 2, 4, and 8 weeks by self-report measures such as the Beck Depression Inventory (BDI), the State–Trait Anxiety Inventory (STAI), and the Symptom Checklist-90—Revised (SCL-90-R), as well as by a subject-blinded psychiatrist using a clinician-rated scale such as the Hamilton Depression Rating Scale (HAM-D) or the Hamilton Anxiety Rating Scale (HAM-A).

### *Meditation program*

A psychiatrist and two meditation specialists with 5 years of education and training experience conducted the program. The meditation program consisted of a training program that can be performed by anxious patients, together with the psychiatrist's complementary instruction on stress management in anxiety disorder (see Appendix A). The training program comprised medication, exercise, stretching, muscle buildup and relaxation, and hypnotic suggestion, with the goal of including it in everyday life through steady practice. At the end of each session, homework and an audio CD were given to participants.

### *Education program*

The education program consisted of a presentation from the psychiatrist and education about the biological aspects of anxiety disorders, lasting for 1 h, once a week. The education