

## **THE EFFECTS OF YOGA FOR DEPRESSION**

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### *Yoga for depression: background*

Major depression creates tremendous individual and societal costs. Yoga is increasingly used by individuals as a means of treating depression. Yoga may be well suited as a depression intervention, as it consists of a combination of exercise and meditation, both of which have been shown to alleviate depressed mood. Another benefit of yoga is its appeal as a practice for well-being. This appeal may help to circumvent stigma that prevents many from seeking treatment for depression.

Initial findings have shown that yoga has promise as treatment for depression. The current studies build on those initial findings by (1) examining potential mechanisms that explain why yoga can help to treat depression and (2) using stronger methods that allow for greater confidence in making inferences from the results (e.g., using an active control group that is matched to yoga in terms of treatment intensity and rationale for improvement). Study 1 consisted of a pilot study to examine the feasibility of a manualized yoga-based intervention and Study 2 consisted of a randomized controlled trial of a brief yoga-based intervention for participants with elevated levels of depressed mood.

### *Study 1: Pilot study*

The first study represents a pilot study to examine the feasibility of administering a 9-week manualized yoga-based intervention to patients. All patients were diagnosed with a mood disorder with an illness duration of at least two years. 12 patients were recruited to participate and all 12 agreed (11 females). The mean illness duration of the patients was 11 years and the current mean treatment duration was 5 years. All participants received treatment as usual, conforming to the Dutch guidelines for the treatment of depression (i.e., for most patients, this consisted of pharmacotherapy, psychological support, contacts with a psychiatric nurse, or a combination of these).

The intervention consisted of 9 weekly sessions of 2.5 hours each. Participants received a manual with weekly registration forms and practice videos. During the yoga classes, the instructor repeatedly prompted participants to focus their attention to the present moment experience (e.g., breath or other body sensations) and to avoid self-judgment regarding their practice (e.g., emphasizing that there is no ideal way to hold the posture but instead to find the right amount of stretch for their bodies, that participants were free to come out of the posture when necessary). In addition to the primary feasibility measures (recruitment, attrition, and patient feedback on the costs-benefits of the treatment), we assessed depression, anxiety, stress, rumination, and worry were before the intervention, after the 9-week intervention, and 4 months later.

The results indicate high feasibility of using this intervention with chronically depressed patients. Specifically, there was interest in the treatment, demonstrated by 100% agreeing to participate. In addition, only 2 patients dropped out during the intervention and both stopped because of physical problems (i.e., acute thyroid inflammation and chronic migraines). Last, qualitative interviews indicated that participants thought the benefits of the intervention outweighed the costs and rated the training with an 8.7 (on a scale from 1-10) with a minimum of 8 and a maximum of 9. All participants reported they would advise someone else to take the training. This qualitative report is supported by the quantitative

measures. Specifically, depression, anxiety and stress decreased from baseline to after the 9-week intervention and these benefits remained 4 months after the training . Rumination and worry did not decrease from baseline to post-intervention but rumination was lower than baseline at the 4 months after.

These results indicate that an intensive 9-week yoga-based intervention is feasible for chronically depressed individuals. Although the small sample size and lack of control group limit the validity of inferences about the effects of the intervention on mood and anxiety, the results suggest that yoga may lead to less depression, anxiety, and stress, and that these benefits may last months after the intervention is completed.

### *Study 2: Intervention study*

This study investigated the effects of a short yoga intervention in a student sample ( $N = 74$ ) that was screened for experiencing symptoms of depression. Participants were randomly divided into two groups. The experimental group received a yoga intervention and the active control group received a relaxation intervention. Both interventions were taught by an instructor and lasted 30 minutes. After this session, participants practiced the same yoga or relaxation exercise at home for eight days using a 15-minute instruction video. Yoga consisted of several yoga postures combined with instructions for the students to focus their attention to present moment experience (e.g., sensations in their bodies or their breath). The relaxation intervention was a guided visualization of a stairway leading to a place of deep relaxation combined with instructions to relax deeper and deeper.

Symptoms of depression, anxiety and stress and rumination were assessed before the intervention, after the intervention (i.e., after the 8 days of home practice), and two months later. There were no differences between the two groups on symptoms of depression, anxiety and stress and rumination either before the intervention or directly after the intervention. At the two months follow up, the yoga group reported less depression and stress compared to the relaxation group. There was no difference found in symptoms of anxiety or rumination.

From this study we can conclude that a mindful yoga intervention can reduce symptoms of depression and stress in a group of moderately depressed students at two months after the intervention, but not immediately after the intervention. The changes in symptoms of depression and stress were not mediated by changes in rumination. This study shows that mindful yoga has potential as a treatment for depression, but the mechanisms of change remain still unclear.

### *Overall summary*

These two studies suggest that yoga-based interventions are not only feasible for patients with chronic, treatment-resistant depression, but that yoga helps to alleviate depressed mood and other symptoms. Confidence in the benefits of yoga on depression is enhanced through the use of an active control group in Study 2. There were inconsistent findings on rumination as a mechanism of the effects of yoga, suggesting more research is needed to find out why yoga helps depressed individuals.