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Perceptions of hatha yoga amongst persistently depressed individuals enrolled in a trial of yoga for depression

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ABSTRACT

Objectives: To understand depressed individuals' experiences in a 10-week hatha yoga program.
Design: In a randomized controlled trial, participants were assigned to either 10 weeks of hatha yoga classes or a health education control group. This report includes responses from participants in yoga classes. At the start of classes, average depression symptom severity level was moderate.
Main outcome measures: After 10 weeks of yoga classes, we asked participants (n = 50) to provide written responses to open-ended questions about what they liked about classes, what they did not like or did not find helpful, and what they learned. We analyzed qualitative data using thematic analysis.
Results and conclusions: Elements of yoga classes that may increase acceptability for depressed individuals include having instructors who promote a non-competitive and non-judgmental atmosphere, who are knowledgeable and able to provide individualized attention, and who are kind and warm. Including depression-related themes in classes, teaching mindfulness, teaching breathing exercises, and providing guidance for translating class into home practice may help to make yoga effective for targeting depression. Participants' comments reinforced the importance of aspects of mindfulness, such as attention to the present moment and acceptance of one's self and one's experience, as potential mechanisms of action. Other potential mechanisms include use of breathing practices in everyday life and the biological mechanisms that underlie the positive impact of yogic breathing. The most serious concern highlighted by a few participants was the concern that the yoga classes were too difficult given their physical abilities.

1. Introduction

In recent years, there has been increasing research on the efficacy of hatha yoga as an intervention for depression. Yoga is an ancient Indian system of philosophy and practice.[1,2] In the U.S., most people who practice yoga practice *hatha* yoga, which involves training the body to cultivate physical and emotional well-being.[3] Hatha yoga is a general term which includes many styles of yoga, such as Vinyasa, Iyengar, or Viniyoga. Although styles vary in emphasis, hatha yoga includes physical postures (*asanas*), breath control (*pranayama*), and meditation (*dhyana*). A recent meta-analysis of yoga for depression reported moderate-sized differences in short-term depression outcomes favoring yoga versus usual care (standardized mean difference (SMD) = 0.69), versus relaxation (SMD = 0.62), and versus aerobic exercise (SMD = 0.59).[4]

We recently completed a study of 10 weeks of hatha yoga vs. 10 weeks of health education classes as adjunctive interventions for people taking antidepressants who continued to have persistent depressive symptoms(n = 122).[5] Briefly, we found that although the difference between groups on depression severity was not statistically significant at the end of the 10 week intervention period, differences between groups were statistically significant over the 6-month follow-up time period, favoring yoga. In this report, we present a secondary analysis of free-text responses to a questionnaire regarding experiences with yoga completed by the yoga participants in the parent study.

Our parent study findings contribute to the mounting evidence that

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hatha yoga may be an efficacious treatment for depression. However, at least two important questions remain. First, there are many styles of yoga in the community. Classes vary in relative emphasis on different elements (asanas, pranayama, meditation, other elements), level of vigor (ranging from restorative to physically challenging), emphasis on modifying postures for individual bodies and using props, and degree of emphasis on mindfulness (i.e., non-judgmental attention to present-moment experience). This leads to the question: what are the most important elements of a yoga class for treating depression? In this study, we designed yoga classes that included asanas, pranayama, and meditation; that were moderate in physical activity; that included some flow through postures; that emphasized attention to physical experiences in the present moment as well as acceptance of one's own abilities and limitations; and that included options for modifying practices to be appropriate for people with a range of physical abilities. Qualitative data on elements that participants did and did not find useful about the classes may provide hypotheses about key elements of yoga for people with depression.

A related question pertains to mechanisms of action. There are many hypotheses about how yoga may have an impact on depression. These include biological mechanisms such as increased activity in the parasympathetic nervous system and the GABA system in the brain,[6] or reduced HPA axis activation and reduced inflammation.[7] There are also possible psychological or cognitive mechanisms, including decreased rumination, increased mindfulness,[8] and an increased ability to take the stance of the "observer self" – i.e., observing unpleasant (or pleasant) thoughts, feelings, or sensations without defining oneself by those experiences. Although participants likely cannot comment on changes in biological mechanisms, their comments about classes may help to direct research attention to putative psychological or cognitive mechanisms that merit future study.

As mentioned above, in this report, we present findings from a qualitative data analysis of experiences with yoga amongst participants in a larger study on the use of yoga for treating depression. The aim of the current analyses was to understand, in this sample, elements of yoga classes thought to be useful or not useful by depressed participants, and participants' thoughts about the longer-term effects of yoga. Comments on specific longer-term effects may point to possible mechanism by which yoga has an impact on depression.

2. Methods

2.1. Participants

Parent study inclusion criteria were: 1) met criteria for major depressive disorder within the prior two years assessed via the Structured Clinical Interview for DSM-IV [SCID[9];]; 2) Quick Inventory for Depressive Symptoms – Clinician Rating [QIDS[10];] score ≥ 8 (mild depression) and ≤ 17 (moderately severe depression); 3) no history of bipolar disorder, schizophrenia, or psychosis; 4) no current hazardous drug or alcohol use assessed using the Alcohol Use Disorders Identification Test,[11] and Drug Use Disorders Identification Test[12]; 5) no suicidal ideation requiring immediate attention; 6) currently taking an antidepressant at a dose with demonstrated effectiveness [13] for at least 8 weeks; 7) antidepressant dose had not changed in the previous 4 weeks and no plans to change the dose in the next 10 weeks; 8) if in psychotherapy, frequency of sessions stable in the past 6 weeks AND no plans to change it in the next 10 weeks; 9) medically cleared for moderate physical activity; 10) not pregnant or planning to become pregnant; 11) no more than 4 yoga, tai chi, Mindfulness Based Stress Reduction or health education classes or home practice sessions in the previous year, no more than 8 yoga classes in the previous 2 years, and had not practiced yoga weekly for 8 weeks or more in the previous 5 years; 12) no weekly meditation practice; 13) fluent in English; and 14) aged 18 or older. To be included in the current data analysis, participants had to: 15) be included in the parent study; 16) be assigned to the yoga arm of the parent study; and 17) have completed the qualitative data questionnaire (n = 50).

2.2. Procedures

All study procedures were approved by the institutional review board at Butler Hospital. Please see [5] for information about study procedures and CONSORT chart. Briefly, participants were recruited from multiple community sites. Once staff determined that potential participants met inclusion criteria and participants provided informed consent, we randomized them to either 10 weeks of hatha yoga or 10 weeks of health education classes. After classes ended, participants were also assessed over a 6-month follow-up period.

2.3. Assessments

Qualitative assessment. At week 10, we asked participants to complete a self-report questionnaire specific to the arm of the study (hatha yoga vs. health education) to which they had been assigned. Open-ended questions included:

- What did you like about the study program? Please tell us specific things that you liked.
- What did you NOT like about the program? How could it be improved? Again, please tell us specific details.
- What is the most important thing that you learned?.

2.4. Yoga program

Based on expert opinion [authors TG and GT; also [14]], feedback from pilot research participants[15] and existing literature, we developed a manualized yoga program. Each participant received an introductory 20–30 min individual meeting with a yoga instructor. We offered group classes twice per week; participants were expected to attend at least one class per week with the option of attending two per week for 10 weeks. Classes were 80-min. Classes included breathing exercises (*pranayama*) and seated meditation; warm-ups and half sun salutations; standing postures; seated postures; inversion and knee-down twist; *savasana* (relaxation); and wrap-up and discussion of home practice. Instructors had a list of practices from which they chose. Instructors were asked to encourage mindful attention to the present moment throughout class, and to repeatedly guide participants through the connection between breath and movement. Instructors tailored the pace of class to the participants present; generally, the class occurred at a gentle pace. To facilitate home practice, we gave each participant a yoga mat, descriptions of suggested practices, 2 videos featuring study instructors, and a commercial yoga DVD (*LifeForce Yoga® to Beat the Blues − Level1* by Amy Weintraub).

All yoga instructors were Registered Yoga Teachers ® with the Yoga Alliance and additionally received study-specific training. Using audio recordings and a structured rating tool, yoga supervisors rated a subset of 55 classes for instructor manual fidelity. Fidelity was excellent for class content (mean fidelity = 95%) and teaching style (mean fidelity = 94%). Yoga instructors met monthly for peer consultation. Yoga supervisors provided feedback about any observed manual deviations.

2.5. Data analysis

We summarized responses to the open-ended questions using thematic analysis based in an essential/realist epistemology.[16] First, one author (LU) reviewed all participant responses and developed a preliminary codebook of themes that were grouped into larger categories. Originally we planned to have two categories of themes that corresponded to key research questions outlined in the introduction, i.e., notable elements of classes and effects of yoga. However, in developing the themes, it became clear that there were so many comments on the