Yoga for Depression and Anxiety: A Review of Published Research and Implications for Healthcare Providers

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ABSTRACT

There is increasing interest in the use of yoga as way to manage or treat depression and anxiety. Yoga is affordable, appealing, and accessible for many people, and there are plausible cognitive/affective and biologic mechanisms by which yoga could have a positive impact on depression and anxiety. There is indeed preliminary evidence that yoga may be helpful for these problems, and there are several ongoing larger-scale randomized clinical trials. The current evidence base is strongest for yoga as efficacious in reducing symptoms of unipolar depression. However, there may be risks to engaging in yoga as well. Healthcare providers can help patients evaluate whether a particular community-based yoga class is helpful and safe for them.

KEYWORDS: yoga, depression, anxiety

INTRODUCTION

Over the past few years, patients, clinicians, researchers, and yoga practitioners have shown increasing interest in the use of yoga as a way to manage or treat depression and anxiety. Yoga is a discipline and practice with origins in India. In the United States, most people practice *hatha* yoga, which includes physical postures (*asanas*) and can include breath control and practices (*pranayama*) and meditation (*dhyana*). There are many different styles of hatha yoga – for example, *Vinyasa* or *Iyengar*. Hatha yoga classes can vary in numerous ways: some classes may involve flowing from one posture to another; others may be more focused on alignment and holding postures. Classes can range from very vigorous and aerobic in nature to very gentle. In some classes, teachers may focus on teaching mindfulness. That is, teachers may instruct yoga students to focus on breathing and bodily sensations in a non-judgmental way as the students move or hold postures.

Yoga might be appealing to people who struggle with depression and anxiety for many reasons. It is affordable and readily accessible in many areas. In addition to the fact there are many yoga classes in the community, yoga students can also use instructional DVDs and books to practice at home. There are modified classes for people with special concerns, such as pregnant women. Yoga may also alleviate physical pain,[1] a common comorbidity among people with depression or anxiety. Yoga can easily be used in combination with traditional mental health treatments. Finally, some people may like the fact that yoga focuses on promoting good mental and physical health, and is not focused on correcting a deficit or treating poor health.

MECHANISMS BY WHICH YOGA MAY IMPROVE DEPRESSION AND ANXIETY

There are many possible mechanisms by which yoga might have an impact on depression or anxiety. We highlight two types of mechanisms here: cognitive/affective and biologic.

First, in a yoga class, a student may be directed to direct his/her attention to present-moment thoughts, feelings, and body sensations in a non-judgmental way. This practice of mindfulness, when extended into everyday life, may help one to focus on current experience, rather than ruminating on the past or worrying about the future. Further, the emphasis on a non-judgmental approach may help to decrease self-criticism. Learning to attend to current experience, including current thoughts and feelings, can also teach one that thoughts and feelings are transient mental events, and that negative (and positive) feelings will fluctuate and change. Mindfulness-based therapies have a demonstrated impact on depression and anxiety symptoms.[2]

Yoga-based practices may serve to regulate the autonomic nervous system. Autonomic nervous system dysfunction is associated with depression[3] and anxiety.[4] Yoga practices may modify underactivity of the parasympathetic nervous system (PNS) and GABA systems in part through stimulation of the vagus nerves, which are the primary peripheral pathway of the PNS. There is some research to suggest that yoga does indeed increase PNS activity and increase GABA levels in the thalamus, and that these increases are correlated with improved mood.[5] Researchers have also hypothesized yoga may have a positive impact on related biologic pathways. Yoga may reduce hypothalamic-pituitary-adrenal axis activation, although evidence to date is inconsistent.[6] Finally, there is some evidence yoga may serve to decrease inflammation (e.g.,[7]). Change in these biologic pathways may affect the underlying pathophysiology of depression and anxiety.

REVIEW OF CLINICAL TRIALS OF YOGA FOR DEPRESSION AND ANXIETY

Unipolar depression. A recent meta-analysis of 12 randomized controlled trials (RCTs) of yoga for clinical depression reported yoga was significantly better than usual care, relaxation exercises, or aerobic exercise in decreasing depressive symptoms.[8] Studies have also shown that hatha yoga can improve mood symptoms occurring in the context of medical problems. Meta-analyses of RCTs have reported that yoga is associated with large reductions in depression and anxiety in cancer patients,[9] and has a significant impact on depression (and pain) associated with fibromyalgia.[10] Yoga may also be useful for prenatal depression.[11]

Bipolar disorder. We were unable to find any randomized clinical trials of yoga for bipolar disorder. We have published anecdotal evidence that yoga can be helpful for some symptoms of bipolar disorder.[12]

Anxiety and anxiety disorders. There are very few studies of yoga for specific anxiety disorders. Two separate single-arm trials of yoga interventions as adjunctive treatments for people with generalized anxiety disorder showed improvements in anxiety symptoms over time.[13,14] Among a small group of people with "anxiety complaints," yoga, relative to a wait-list control, was associated with lower anxiety after 1 month of practice.[15] There is a larger-scale randomized clinical trial of yoga vs. cognitive behavioral therapy vs. an educational control group currently underway (see clinicaltrials.gov).

Promising data on the effects of yoga on anxiety also comes from studies of yoga versus a control group in healthy individuals (without psychiatric disorders) or in individuals with a particular medical problem. These data are encouraging. For example, as mentioned above, a meta-analysis showed that yoga was superior to control groups in reducing anxiety for people with cancer.[9] Yoga was also shown to be superior to a health education control group in reducing anxiety (and increasing quit rates) for women trying to quit smoking.[16]

Post-Traumatic Stress Disorder. There is significant interest in yoga for PTSD, although relatively few RCTs have been published. In a recently published RCT, 64 women with PTSD were randomly assigned to yoga or a health education class. At study endpoint, significantly fewer women assigned to the yoga group met criteria for PTSD.[17] A small RCT with 21 male military veterans showed that that a breathing-based yoga intervention was associated with larger decreases in PTSD symptoms than a wait-list control group.[18] In contrast, another RCT included 38 women with PTSD who were randomized to Kripalu yoga vs. an assessment control, and both groups showed decreases in PTSD symptoms. However, the study was likely underpowered to detect statistically significant differences.[19] Finally, in a non-randomized study, Descilo and colleagues [20] compared tsunami survivors with elevated PTSD symptoms who received a yoga breathing intervention vs. a wait-list control, and found significant decreases in PTSD symptoms for the yoga group relative to the control group. There are also several trials of yoga for PTSD in veterans currently underway (see clinicaltrials.gov). Thus, the existing literature on yoga for PTSD is encouraging, but not definitive.

LIMITATIONS OF EXISTING RESEARCH

As can be seen by this literature review, with the possible exception of unipolar depression, there are relatively few scientific studies evaluating the impact that yoga may have on symptoms of mood, anxiety disorders, and PTSD. Further adding to the difficulty of making conclusions from this literature, there are important differences between studies, and many studies suffer from methodologic limitations. We highlight a few key issues here. First, the style of yoga varies significantly between study interventions – with different emphasis placed on how gentle vs. vigorous the practice is and the degree to which pranayama, meditation, and mindfulness are emphasized. Some of the yoga interventions described above were not hatha yoga – i.e., they were primarily focused on pranayama and not at all focused on asana practice. Second, yoga interventions also differ in "dosage": i.e., the length of classes, the number of classes per week, and the degree to which home practice is encouraged. Third, trials employ a variety of control groups, ranging from a relatively weak control groups (i.e., no treatment) to stronger control groups (i.e., physical activity or another type of class that controls for time and attention). Fourth, many studies do not include an assessment of the key outcome measure (e.g., depression or anxiety symptoms) performed by an evaluator who is blind to treatment assignment.

IMPLICATIONS FOR HEALTHCARE PROVIDERS

We provide recommendations for healthcare providers in light of the current level of evidence of yoga for depression and anxiety. It is possible that an individual with a mood or anxiety disorder will be interested in trying yoga. A healthcare provider might advise his/her patient that there are many different styles of yoga in the community, and that the patient may want to try a class for a few weeks, evaluate whether the class seems to be comfortable and helpful, and, if not, consider trying a different class. If the patient is not physically fit, it is wise to start with a "gentle" or "beginner's" yoga class. Classes that emphasize mindfulness practices may be particularly helpful for people with depression or anxiety. Although there is no formal licensure for yoga teachers, yoga teachers who are Registered Yoga Teachers (RYTs) with the Yoga Alliance have gone through a formal training program approved by the Yoga Alliance. Thus, the patient may want to choose a class taught by a RYT.

Although yoga may be beneficial, the patient and healthcare provider should be aware of possible risks of engaging in yoga. In studies described above, investigators often did not report on a systematic assessment of adverse events, and thus there is very little data available on possible risks

of yoga participation. However, in a survey study of people with bipolar disorder who practiced yoga, potential risks cited included: practices such as rapid breathing or extended meditation possibly leading to symptom exacerbation (mania or depression), physical injury, and negative comparison to other students.[12] Other possible risks include dehydration resulting from the combination of a heated room and psychotropic medications, or strong negative psychological reactions (such as panic attacks, flashbacks, or hallucinations) to extended meditation sessions. When choosing a class, a patient will want to be mindful of his/ her own vulnerabilities and risks, including risks associated with psychotropic medications.

CONCLUSION

In sum, there is preliminary evidence that yoga may be helpful for depression, anxiety, or PTSD. The evidence is strongest for unipolar depression. Healthcare providers can help patients evaluate whether a given community-based yoga class is helpful and safe for them.

For further reading and suggestions for practice, see *Yoga for Depression: A Compassionate Guide to Relieve Suffering Through Yoga* by Amy Weintraub (Harmony Books, 2003).

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