THE INTERNATIONAL ASSOCIATION OF YOGA THERAPISTS

Research Summary for Yoga Therapists: Yoga Therapy for Anxiety

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Research Summaries for Yoga Therapists are a service provided by IAYT to help yoga therapists navigate the twists and turns of the research landscape. The full reference can be found here:

Pilkington, K. Gerbarg, P. L., & Brown, R. P. (2016). Yoga therapy for anxiety. In: S. B. S. Khalsa, L. Cohen, T. McCall, & S. Telles (Eds.), *The principles and practice of yoga in health care*, 95–116. Pencaitland, United Kingdom: Handspring Publishing.

Definition of the disorder

Anxiety disorders include obsessive compulsive disorder (OCD), generalized anxiety disorder (GAD), phobias, panic, and posttraumatic stress disorder (PTSD). For the purposes of this research summary, we will only be focusing on OCD, GAD, and PTSD.

- GAD is defined by "constant and excessive anxiety about many aspects of daily life, including health, money, and family and work issues or overwhelming feelings of impending disaster."
- OCD is defined by "persistent and unwanted feelings and thoughts (obsessions) accompanied by rituals or repetitive behaviors in an attempt to control thoughts."
- PTSD is a disorder "following severe physical or emotional trauma, in which reminders of the experience seriously affect thoughts and behavior over a prolonged period of time."

Conventional medical treatment is usually a combination of pharmacotherapy and psychotherapy.

Prevalence (How common are the conditions?)

Anxiety and trauma-related disorders are some of the most common mental health problems worldwide and are generally reported to occur more in women than in men. In the United States, the prevalence of anxiety is among the highest at 28.8%.

Etiology (What are the suspected causal factors?)

Genetic, environmental, psychological, and developmental factors contribute to anxiety disorders. Stress and trauma also play key roles in triggering anxiety symptoms.

Rationale for yoga

Yoga is believed to reinforce our natural ability to self-regulate our stress-response systems.

General methods

The authors conducted an exhaustive review of randomized controlled trials (RCTs), nonrandomized trials, and uncontrolled trials. The focus was on GAD, OCD, and PTSD. PTSD was further broken down into persons with PTSD in a) *the general population (e.g., car accidents)*, b) *military personnel post–active service*, and c) *those who have experienced a natural disaster*. In this summary, we focus on the best available evidence reported, which excludes older studies with poorly defined diagnoses, study designs, and/or outcomes, as well as unpublished and case studies, from which no firm conclusions can be drawn.

GAD

Who was studied?

Three small studies were identified that used yoga as an adjunct or alternative to standard treatment for patients diagnosed with GAD. Age ranges were not reported.

How were the studies conducted?

- Two of the studies included in this review were uncontrolled, and one study was randomized.
- One uncontrolled study measured the effects of Sudarshan Kriya Yoga (SKY) and another measured the effects of cognitive behavioral therapy combined with Kundalini yoga.
- The RCT compared yoga to a control group receiving naturopathic care; however, the randomization process was not considered adequate.
- The studies' duration ranged from 5 days to 6 weeks and from meeting daily to meeting several times per week.
- Outcome measures were conducted using validated questionnaires for anxiety.

What did the researchers find?

- The two studies that lacked control groups found promising changes from the beginning to the end of the study; however, without a control group these changes are difficult to fully evaluate and may be attributable to placebo or other effects.
- The controlled study comparing yoga to naturopathy found little to no effect on outcomes observed.

Were adverse events reported?

No adverse events were reported.

What were the limitations of the studies?

The studies were preliminary at best, given the lack of control groups or adequate randomization. Although the two uncontrolled studies found improved changes within groups, the studies suffered from high attrition rates. Without control groups and the ability to determine whether the effects were due to the yoga intervention, these studies provide only preliminary and feasibility information.

The RCT did not provide adequate baseline measures; therefore, it is not possible to adequately determine changes posttreatment. Given the small sample sizes and high attrition rate (number of dropouts), the study lacked the power to detect significant differences between groups.

2. OCD

Who was studied?

Three studies evaluating yoga for persons diagnosed with OCD were reported. Two studies, one uncontrolled and one RCT, were conducted in the United States by the same study team. The third, conducted in Iran, studied 40 women ages 19–55.

How were the studies conducted?

- The uncontrolled study used yoga-based breathing techniques, whereas the follow-up study was an RCT that compared Kundalini yoga to relaxation and mindfulness meditation. The RCT conducted by the same group attempted to blind participants to the treatment protocol and ensured that groups were equivalent at baseline, suggesting any differences between the groups were equally distributed.
- The third study was an RCT comparing Hatha yoga to watching TV. The duration of the study was 6 weeks, with interventions twice per week.
- All three studies used the Yale-Brown Obsessive Compulsive Scale (Y–BOCS), a validated scale for OCD. In the Iranian study, the investigators responsible for collecting outcome measures were blinded and not aware of group assignments.

What did the researchers find?

- In the uncontrolled study, OCD symptoms improved between initial testing and postintervention; however, without a control group it was not possible to confidently ascribe these effects to yoga.
- In the RCT comparing Kundalini yoga to relaxation and mindfulness meditation, greater improvements were found in the yoga group compared to the control group using the OCD scale.
- The study conducted in Iran found no differences between groups, possibly due to the short trial duration of 6 weeks.

Were adverse events reported?

Adverse events were not reported or mentioned in the studies reviewed.

What were the limitations of the studies?

- The studies had small samples and suffered from high dropout rates.
- In all cases, either the lack of clear reporting on methodological safeguards against bias or the standard for rigor in methodological design was not met, limiting the interpretation of the results.
- The studies also differed substantially in design, population, yoga intervention, frequency, and duration, making it difficult to compare across studies and limiting the generalizability of findings.

3. PTSD

Studies in the review for PTSD represent the largest focus for yoga on anxiety disorders and were divided into three groups:

a) people from the general population who had been diagnosed with PTSD,

b) post–active service military personnel, and

c) populations who had experienced a natural disaster.

General population

Who was studied?

Only one study provided enough details to be reported in this section. The study included 64 women with chronic treatment-resistant PTSD.

Other studies were reported and reviewed; however, their primary outcomes were to assess feasibility, such as to determine recruitment and retention rates, etc., as opposed to symptom reduction.

How was the study conducted?

- An RCT comparing a "trauma-informed" yoga class to a women's health education class was conducted.
- The intervention lasted for 1 hour/week over the course of 10 weeks.
- The primary outcome assessment tool used was the Clinician Administered PTSD Scale (CAPS).

What did the researchers find?

Significant improvement was observed in both groups, but women in the yoga groups reportedly no longer met the criteria for diagnosis with PTSD; this is similar to findings with established psychotherapeutic approaches.

Were adverse events reported?

Adverse events were not reported.

What were the limitations of the study?

In the RCT, the randomization procedure was not well described, so it was not possible to discern whether selection or detection bias was truly minimized.

Post–active service military personnel

Who was studied?

Adult male and female military personnel or veterans diagnosed with PTSD were included in the studies reviewed.

How were the studies conducted?

- Four studies were identified in this review—three RCTs and one uncontrolled pilot trial. Sample sizes ranged from 12 to 70 participants.
- Control group conditions included waitlist or usual care.
- Types of yoga included SKY adapted for veterans, sensory-enhanced Hatha yoga, and an unspecified yoga format.
- The yoga intervention durations varied from 5 days to 6 weeks and varied in frequency.
- Standardized outcome measures for PTSD and anxiety were used.
- Minimal attrition was reported.

What did the researchers find?

All four studies found a significant reduction in PTSD and anxiety symptoms.

Were adverse events reported?

One study reported an exacerbation in respiratory symptoms in two participants who had been diagnosed with COPD in addition to PTSD; the participants withdrew from the study early. Otherwise, adverse events were not reported.

What were the limitations of the studies?

Reporting on RCT design was minimal, and this made it difficult to adequately appraise the quality of the studies. Of the controlled studies, none used an active control, making it impossible to attribute effects to yoga alone. All studies had insufficient sample sizes upon which to build the strength of the evidence base.

Natural disasters populations

Who was studied?

Study participants included survivors of natural disasters: tsunami or flood survivors from India and the Andaman Islands and earthquake survivors in Iceland. All age ranges were involved.

*How were the studies conducte*d?

- Four studies were identified: one RCT, two nonrandomized controlled trials, and one uncontrolled pre–post study. The nonrandomized controlled trial groups were assigned based on residential areas or refugee camps, and the groups were comparable at baseline for demographic and symptomatic variables.
- Control groups were involved in routine activities or assigned to a waitlist control.
- The types of yoga included in the studies were Vivekananda, Hatha, yogic breathing, and SKY.
- Study durations varied from 4 days to 6 weeks. Yoga

was presented at varying frequencies, from daily to 2 days per week.
- Outcomes were based on posttraumatic checklists, self-rated emotional distress symptoms such as fear and anxiety, and posttraumatic stress diagnostic scales.

What did the researchers find?

- One nonrandomized controlled trial with tsunami survivors found statistically significant improvements for the yoga group in a between-group comparison, whereas the other nonrandomized trial with earthquake survival victims did not find significant improvements between groups. When considering changes from baseline to postintervention, improvements in symptoms were noted; however, it is not possible to determine whether the changes were due to the yoga intervention or simply indicative of the natural progression of healing.
- In the RCT, symptoms of emotional distress decreased in the yoga groups, whereas anxiety increased in the non-yoga group.
- The uncontrolled study found a significant decrease in self-rated emotional and psychological symptoms of PTSD.

Were adverse events reported?

Adverse events were not reported.

What were the limitations of the studies?

- Due to the logistical challenges of conducting studies in a natural disaster refugee area, many quality-control factors were hard to accomplish.
- There was some uncertainty as to whether study subjects actually had PTSD. Although participants were exposed to a natural disaster, a clear diagnosis based on a validated PTSD scale was not established.
- Measures were self-reported and therefore potentially subject to recall bias and subjectivity.
- Attrition rates varied among studies.
- There was a lack of randomization (although controlled, based on location), so some differences may exist between the groups. For the nonrandomized trials, it was not possible to minimize selection bias, but the fact that the groups were comparable at baseline increases confidence that bias was minimized to the degree possible in this challenging setting.
- There were varied approaches to the duration and frequency of yoga. Compliance was not assured.

Take-away message

As reported in this chapter, few RCTs have been reported on specific anxiety disorders. The studies overall varied in quality, with small samples and self-selected participants using subjective measures. Yoga interventions varied by style, duration, and frequency. The studies show promising but inconclusive findings that deserve further examination and authentication.

Clinical relevance

Although yoga therapists find that a variety of yoga approaches appear to be helpful in anxiety disorders, methodological problems having to do with study design limit the ability to draw firm conclusions from the studies reported. Pending the outcomes of further research, yoga therapists are advised to follow the teachings of their traditions as well as their clinical experience when crafting practices for clients with anxiety disorders. Although the reporting of side effects is inconsistent in the studies to date, yoga for the populations with any of these disorders appears to be safe and generally well tolerated.