A systematic review of yoga for state anxiety: considerations for occupational therapy

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CRD summary
This review concluded that yoga could reduce state anxiety in some situations. This conclusion reflects the evidence presented, but limitations in the quality of the included trials reduce the reliability of the results and the conclusions.

Authors' objectives
To determine the effectiveness of yoga as a treatment for state anxiety (anxiety in a specific context or situation).

Searching
Six databases, including MEDLINE, CINAHL and The Cochrane Library, were searched for articles in English from 1990 to July, 2011. Search terms were reported. The authors' files and the reference lists of included articles were searched.

Study selection
Systematic reviews and randomised or non-randomised controlled trials were eligible for inclusion if they reported on the effectiveness of yoga for treating state anxiety in patients aged 18 years or older. To be included, yoga had to include all its parts, not meditation or deep breathing alone; anxiety was defined as consciously perceived feelings of tension and apprehension. Trials or reviews of patients with a mental health diagnosis were excluded.

The included trials were conducted in India, the USA, Australia, Canada, Iran, Sweden or Germany. The number of yoga sessions ranged from one to 60, over periods of once only to 12 weeks. Where reported, the mean age of participants ranged from 24 to 77 years. Participants were healthy adults, or adults with breast cancer, menopausal symptoms, migraine headaches, lymphoma, multiple sclerosis, or mild-to-moderate stress. About half the randomised trials had active controls, such as supportive therapy, self-care and education, or progressive muscle relaxation; the others had waiting-list controls or no treatment. The outcomes and measurement tools varied across the trials.

Two reviewers independently selected studies for inclusion in the review; any discrepancies were resolved through discussion.

Assessment of study quality
Several reviewers independently assessed the quality of the trials. Randomised controlled trials (RCTs) were assessed using the Cochrane risk of bias tool, and non-randomised controlled trials were assessed using criteria suggested by the Cochrane Non Randomised Studies Method Group.

Data extraction
Study characteristics and outcomes for state anxiety (self-reported measures and physiological parameters) were extracted by one reviewer. These data were checked by a second reviewer.

Methods of synthesis
The data were presented in a narrative synthesis, by the type of outcome. Within these outcome categories, the results were separated by population.

Results of the review
Twenty-three trials were included: 16 RCTs (about 1,049 participants) and seven non-randomised controlled trials (672 participants). The overall quality of the trials was medium to poor. Nine RCTs reported adequate randomisation methods, three reported blinding of outcome assessors or analysts, two reported an intention-to-treat analysis, and one reported adequate allocation concealment. Further quality assessment results were reported.

Self-reported measures: Five RCTs were of women with breast cancer; four showed a statistically significant benefit of yoga for state anxiety, compared with other forms of supportive therapy, education and counselling. Four RCTs were of healthy adults; two showed statistically significant benefits of yoga for state anxiety, compared with waiting-list
controls, exercise, progressive muscle relaxation, or no treatment. One RCT was of patients with migraine headaches; a statistically significant benefit of yoga for state anxiety was reported, compared with self-care education.

No significant differences in state anxiety were found, in healthy people, between yoga and progressive muscle relaxation (one RCT) and no treatment (one RCT). No significant differences were found between yoga and waiting-list controls, in patients with lymphoma (one RCT) and patients with multiple sclerosis (one RCT). Effect sizes were reported to be small to medium.

**Physiological parameters:** One RCT of patients with breast cancer demonstrated a statistically significant decrease in cortisol with yoga, compared with individual support therapy sessions. One RCT of healthy people showed a statistically significant lower heart rate with yoga, compared with exercise. Another RCT of healthy people found no significant difference in blood pressure, when comparing yoga with progressive muscle relaxation.

The results for the non-randomised controlled trials were reported.

**Authors' conclusions**
The evidence suggested that yoga could reduce state anxiety in some situations.

**CRD commentary**
The review question and inclusion criteria were clearly defined. Various sources of published and unpublished data were searched; the English-language restriction means that relevant trials may have been missed. Several reviewers were involved in the review process, reducing the risk of error and bias.

Trial details were presented, and differences between the trials suggest that a narrative synthesis was appropriate. The review authors acknowledged that the trial findings were limited by small samples and a lack of statistical power. They stated that patients with medical conditions, such as breast cancer, may have had different risks or awareness of state anxiety than other populations.

The authors' conclusion reflects the evidence presented, but there were limitations in the quality of the included trials, which reduce the reliability of the results and the conclusions.

**Implications of the review for practice and research**

**Practice:** The authors stated that clinicians should consider the context of their patients (including their health status), before recommending yoga. The occupational therapist, the individual and the instructor should work together to ensure that the patient's needs are met.

**Research:** The authors stated that trials of people with certain medical conditions should collect both self-reported and physiological measures of state anxiety, and consider the confounding factors associated with the condition (described in the review). Trials should measure occupational performance and engagement, and track changes in these outcomes in waiting-list controls.

**Funding**
No funding received.

**Bibliographic details**

**PubMedID**
24224228

**Original Paper URL**
http://cjo.sagepub.com/content/80/3/150.abstract

**Indexing Status**
Subject indexing assigned by NLM
MeSH
Anxiety Disorders /rehabilitation; Humans; Meditation; Occupational Therapy /methods; Relaxation Therapy; Yoga

AccessionNumber
12013066462

Date bibliographic record published
02/12/2013

Date abstract record published
11/07/2014

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.