Systematic reviw of yoga on stress of adult's health

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ABSTRACT

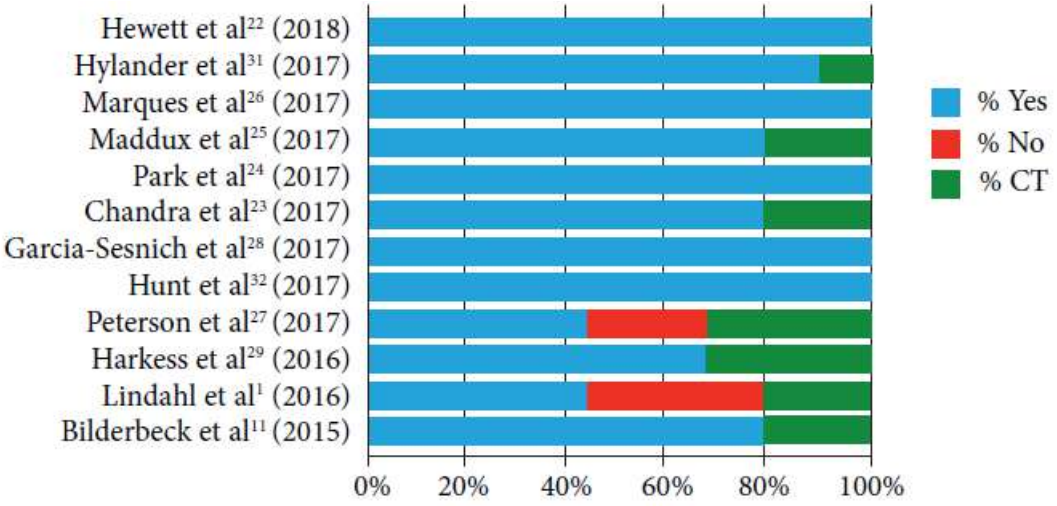
Both clinical and nonclinical groups have endorsed the therapeutic value of yoga. Yoga as a treatment approach has not been well studied, and it is vital to discuss the effects of yoga on stress. Researchers in this study hope to find out if yoga may reduce stress in people who are otherwise healthy. The authors, on the other hand, set out to investigate the stress-relieving effects of yoga in a methodical manner. One method of finding studies on yoga's impact on stress reduction in nonclinical groups was a comprehensive literature search. Researchers grouped studies into categories based on their length of intervention, yoga style, and outcome measures. Using the key search terms yoga and stress assimilation with tension and pressure, the research was culled over the last five years (from January 2012 to November 2016). The Prisma flow diagram was used to guide the process of selecting candidates. There were a total of twelve studies included in this review that discussed the benefits of yoga or yoga-related therapies on stress management and remission. A variety of styles of yoga practise were examined for this study (e.g., Hatha yoga, Bikram yoga, Kundalini yoga, Sudarshan Kriya yoga, Kripalu yoga, Yin yoga). From four weeks through 28 weeks, a time spectrum was analysed. This study found that yoga had a good effect on stress reduction in healthy populations, regardless of kind. The long-term effects of yoga and the underlying psychological mechanisms that cause stress and mental restraint should be studied further. It is also recommended to take into account one's age as a risk factor for yoga's ability to alleviate stress. E-published ahead of print in Altern Ther Health Med.

Keywords: Yoga, stress, adult, healthy

1. INTRODUCTION

The therapeutic and relaxation benefits of yoga have grown in popularity among people of all ages, even those in their golden years. A basic practise of yoga combines stretching and holding various asanas (postures) with deep, rhythmic breathing and meditation in order to improve a person's physical mobility. 1 Singh wrote a treasury of 112 sorts of yoga that addressed the context of yoga types, through which the greatest truth was achieved. 2 As a result, yoga has been successfully used in scientific study across the world, despite its many forms and subtypes. Innumerable studies have shown the health benefits of yoga. Yoga has been demonstrated to improve health in both clinical and nonclinical groups in studies. Patients with cancer and cancer survivors were carefully surveyed for evidence of yoga's usefulness in reducing insomnia and enhancing sleep quality. 3 The rise in endogenous melatonin release that may be responsible for yoga's well-being-enhancing benefits has been demonstrated in psychophysiological studies. An further physiological benefit of meditation is an increase in cardiac output, which affects basal metabolic rate by itself. 5 Yoga practise had no significant impact on cognitive performance in healthy people, but it had a positive impact on quality of life and physical well-being. 6 In spite of this, a yoga-based programme for improving health and well-being may be implemented and is effective. Yoga's psychological benefits have been studied in the past. Depression, anxiety, and self-efficacy appear to be alleviated by yoga. Research on yoga's ability to alleviate anxiety and anxiety disorders has been conducted since 2004, for example. Despite the wide variety of intervention circumstances and the poor quality of the research, the evidence showed positive results with obsessive compulsive disorder. 8 According to a recent meta-analysis of 27 trials, in which 19 studies indicated substantial reductions in anxiety-related symptoms or traits, this is true. 9 Two months of yoga class can significantly reduce anxiety levels in women who suffer from anxiety disorders. A wide range of age groups and social statuses have been studied in relation to the effects of yoga and stress, including prisoner and office worker populations. 11,12 Stress and yoga are linked in some way, as has been pointed out. Researchers found positive feelings, self-compassion and regulation of the hypothalamus and salivary cortisol to be mediating factors between yoga and

stress. 13 Due to the wide variety of yoga practises and the lack of conclusive data on the positive effects of yoga on stress in healthy people, this study aimed to better describe the advantages of yoga. The current scientific data on the stress-relieving effects of yoga is examined in this comprehensive analysis. We believe that any style of yoga will have a positive impact on stress reduction. This was investigated over a wide age range of participants.



Note: %Y = percentage of "Yes"; %N = percentage of "No"; %CT = % of "Cannot tell."

Figure 1. Checklist of Quality Assessment of Selected Studies

Table 1. Inclusion and exclusion criteria used when selecting articles in the systematic review

	Inclusion criteria	Exclusion criteria
Population	People above 18 years old	People with clinical symptoms (physical or mental disorder, or undergoing regular medical check) or in shift-work schedule
Intervention/exposure	Yoga based study on stress Empirical or observational original studies	Review (systematic review; meta-analysis) longitudinal study (follow-up study or retrospective study); Mixed study methods
Comparison	Contain intervention and controlled groups	Case-control studies
Outcome		Outcome elaborated the effect of yoga on stress
Other	Timeframe from January 2012 to November 2016	Questionable analysis methods. Non-English study

2. LITERATURE REVIEW

Kristen E. Riley (2015) Many mental and physical health issues, including stress-related diseases and worries, are being treated in professional settings using yoga, which has shown encouraging results. However, little is known about how yoga works to relieve stress. Any yoga intervention that examined stress as a primary dependent variable and tested the mechanism of the association with mediation was included in our systematic review in order to examine the empirical evidence of how yoga decreases stress. We found 926 abstracts in our electronic database search, of which 71 were chosen for additional examination and 5 for the final systematic review. There were five studies that looked at three different psychological processes (positive affect, mindfulness, self compassion) and four different biological

pathways (posterior hypothalamus, IL-6, CRP, cortisol). Inhibition of the posterior hypothalamus and salivary cortisol, as well as positive affect and self-compassion, have all been found to modulate the link between yoga and stress. While there is a growing body of literature detailing possible pathways, only seven of them have been empirically explored. More study is clearly needed in this area. There should be more rigorous technique used in future studies with proper control groups and adequate power and randomization.

Cecilia S M Chong (2011) This article presents a comprehensive assessment and critical evaluation of the effects of yoga on healthy individuals' stress management. Randomized and clinically controlled trials examining the impact of yoga on stress management in healthy individuals were identified through a comprehensive review of the scientific literature. The interventions, length, outcomes, and findings of the selected studies were categorised. Public Health Research, Education and Development (PHRED) guidelines were also used to evaluate them qualitatively. In the systematic analysis, eight RCTs and CCTs were analysed that found yoga to have a favourable effect on lowering both stress levels and symptoms. Although the intervention length was brief and follow-up data was scarce in most research, this did not detract from the findings of the investigations. According to the findings of this study, yoga has been shown to be effective at reducing stress in otherwise healthy adults. However, the results should be taken with a grain of salt because of the limited number of research and the accompanying methodological issues. Studies to determine the long-term impacts of yoga and the biological processes behind its stress-reduction effects should be carried out.

3. METHODS

We used a systematic review to test our hypothesis.

3.1 Databases and Search Terms

The PICO standard15 served as a helpful guide when it came to choosing which studies to include in the analysis. Title and abstract alone were sufficient criteria for consideration of all submitted articles. PICO is a standard for PICO details:

P (population): healthy individuals who aren't in the midst of a medical procedure or are pregnant, and who aren't working night shifts.

I (intervention/exposure): Putting together a yoga-based intervention.

C (comparison): In studies that have compared healthy people who practise yoga with healthy adults who don't practise yoga;

O (outcome): Yoga has been shown to reduce stress.

3.2 Inclusion and Exclusion Criteria

Adults' sources of stress vary depending on how they manage their lives and how they interact with others. Only research involving adults were considered for inclusion (18 years and older in this study). Clinical patients with physical or mental symptoms, shift workers, those with a sleep issue, or pregnant women were not allowed to participate in the studies. We didn't include shift workers since they may experience higher levels of stress than those who have a more regular schedule in their lives. Due to the unique nature of their bodies, pregnant women who are required to visit the hospital on a regular basis for checkups were excluded. Additionally, persons with sleep problems or insomnia were excluded from the study since stress might interact with these illnesses. Excluded were studies that used more than one type of study. Also omitted from this analysis were reviews articles and letters to the editor. Every time the same trial had numerous published reports, we looked at the best qualified of those reports instead of all of them. However, we did not use the sample size as a factor for exclusion. Moreover, there were no reviews or long-term studies included in the study. Figures 1 and 2 provide the inclusion and exclusion criterion information.

3.3 Quality Assessment

A checklist developed by the Critical Appraisal Skills Programme was used to evaluate study quality. We do not recommend a grading system for these checklists because they were created to be used as instructional pedagogic tools in a workshop context. Adapted from Guyatt et al.17, the JAMA 'Users' guides to medical literature served as the basis for the main CASP checklists. When it came time to grade the studies, we used the checklist and didn't provide any commentary. "Yes," "No," or "I don't know." Figure 1 sums up the things using the checklist.

3.4 Bias Assessment

In a systematic review, publication bias must always be taken into account. However, there hasn't been a precise technique to measure bias in publishing until now. In order to investigate the possible implications of publication bias on our results, we used the Cochrane technique for risk of bias assessment. If the study asks the right question (external validity), and if it answers it "properly" (internal validity), then the study is considered legitimate (internal validity). 18 The risk of bias in included studies was assessed by the Cochrane tool:

1. Was the allocation sequence created correctly?
2. Was the deployment of resources appropriately disguised?
3. Was it possible to keep the assigned intervention a secret during the research?
4. What steps were taken to deal with missing or incorrect data?
5. It was decided to present three possible replies to this question: yes, no, or uncertain, in the study's reports. Higgins suggested that if a trial address all the 5 domains with “yes,” the trial will be considered to have “low overall risk of bias”; however, in cases in which even one of those 5vdomains get an “unclear” or “no “assignment, the trial will be considered to have an “unclear or high overall risk of bias.” 18 Details of the risk of bias evaluation may be found in Table 2.

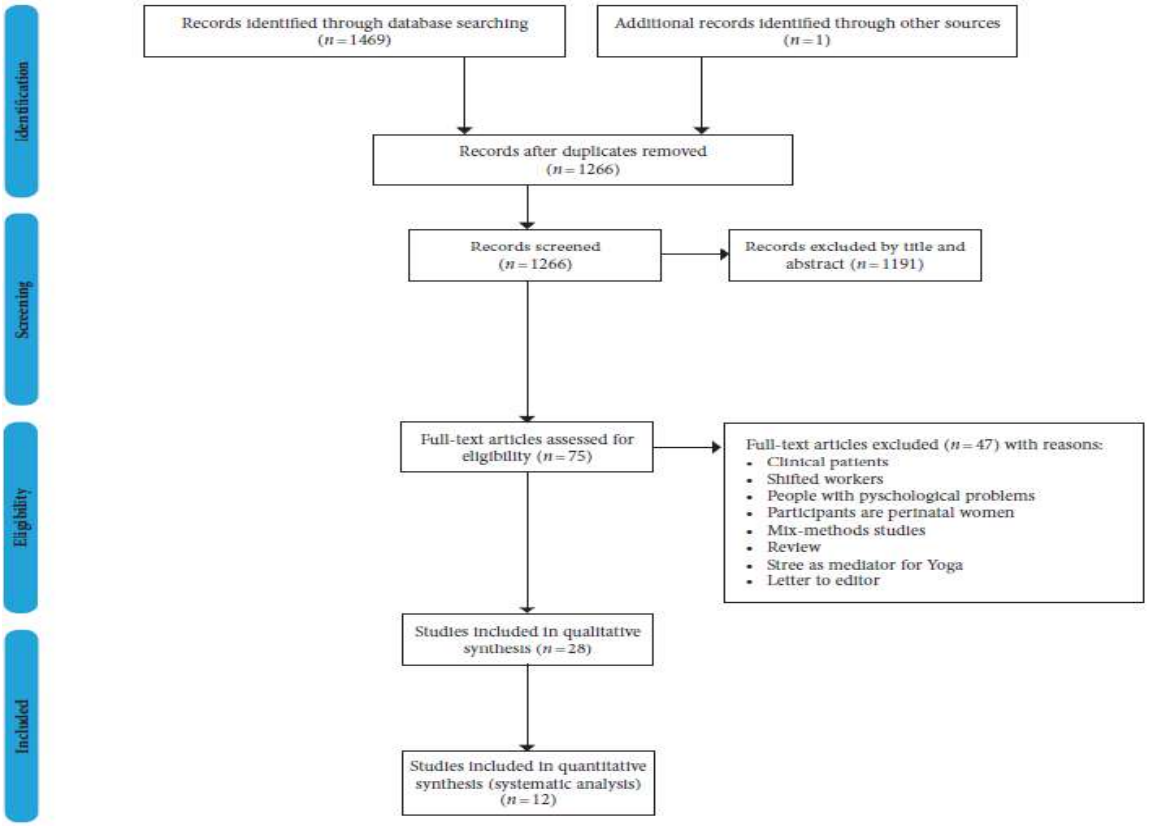


Figure 2. Study Selection Process

Table 2. Assessment of Risk of Bias

Adequate sequence generation?	Allocation concealment?	Blinding (of outcome assessors)	Incomplete outcome data addressed?	Selective outcome reporting?	Overall assessment of risk of bias
yes	yes	yes	yes	yes	Low
yes	unclear	yes	yes	yes	Uncertain
yes	yes	yes	yes	yes	Low
yes	yes	yes	yes	yes	Low
yes	yes	yes	yes	yes	Low
yes	yes	yes	unclear	no	Uncertain
unclear	yes	no	unclear	yes	Uncertain
yes	no	no	yes	yes	High
yes	yes	no	yes	unclear	High
yes	yes	unclear	yes	yes	Uncertain
yes	yes	no	unclear	no	High
unclear	no	yes	yes	unclear	High

4. RESULTS DISCUSSION

4.1 Study Selection Flow

The database search provided here yielded 1469 research findings. We also looked at the website of another potential resource, the International Journal of Yoga. All of the studies were sifted one at a time, starting with the most relevant. People who aren't qualified to participate in the study can be identified from the tidbits and abstracts of the study (eg, reviews, protocols). In all, 75 publications were screened for titles and abstracts before being examined in full. Exclusion criteria such as those listed above were applied to all of the submitted papers. Lastly, the system review contained 12 research papers. Figure 2 depicts the process flow diagram for the study selection process.

4.2 Characteristics of Included Studies

Six hundred and seventy-two people participated in a total of 12 studies. Table 3 lists all of the articles that were involved. Studies including both a case and control group comparison were eligible for inclusion. Adults of varying ages were subjected to a variety of interventions. Different styles of yoga (such as Hatha and Bikram) as well as Kundalini and Sudarshan Kriya as well as Kripalu and Yin were studied for anything from four weeks to 28 weeks. Study participants were divided into one group for the study, while another was used for control purposes. Random or non-random distribution of participants was used. In all of the research, the PSS was used to quantify stress. PSS can be administered with a four-item or ten-item protocol, depending on the study. The Beck Depression Inventory (BDI), Depression, Anxiety, and Stress Scale (DASS-21), and Kessler Psychological Distress Scale (K10) were all employed in these investigations to measure depression, anxiety, and stress.

Table 3. The details of selected studies

Participants	Intervention method	Duration	Study design	Outcome	Measurements of assessing stress
63 Adults (37.2 ± 10.8 y)	Bikram yoga	16 weeks	A randomized controlled trial	P.E.	10-item Perceived Stress Scale (PSS)
49 middle-aged participants	Yin yoga	5 weeks	A case-control study	P.E.	4-iterm Perceived Stress Scale (PSS-4)

34 women (83.16 ± 7.4 y)	Chair-based Yoga	28 weeks	Case-control study	P.E.	Perceived Stress Scale (PSS)
80 students (mean age 46 y)	Power yoga	16 weeks	post intervention	P.E.	10-item Perceived Stress Scale (PSS)
51 first-year undergraduates	Kripalu yoga	8 weeks	A randomized controlled trial	P.E.	21-item Depression, Anxiety and Stress Scale (DASS-21)
20 humans aged 21- to 30-y- old	Sudarshan Kriya yoga	30 days	Case-control study	P.E.	Stress Determination Test (SDT)
26 people aged 18- to 45-y-old	Kundalini Yoga	3 months	Case-control study	P.E.	Perceived Stress Scale (PSS) (Spanish version)
60 undergraduat e students	Mindfulness training; Yoga alone	4 weeks	Case-control study postintervention	P.E.	Beck Depression Inventory (BDI) Spielberger State/Trait Anxiety Inventory
142 individuals (43 ± 13.90 y)	Multicomponent Breath-Based Yoga	6 weeks	postintervention	P.E.	10-item Perceived Stress Scale (PSS)
84 middle-aged women	Yoga class	2 months	A case-control trial	P.E.	Kessler Psychological Distress Scale (K10); Perceived Stress Scale (PSS)
8 participants (66.5 ± 0.3 y)	60-min Hatha yoga sessions	7 weeks	postintervention	P.E.	Perceived Stress Scale (PSS)
55 participants (prisoners)	Yoga course	10 weeks	postintervention	P.E.	Perceived Stress Scale (PSS)

4.3 Effects of Yoga on Stress

Yoga class participation was strongly linked to a reduction in perceived stress levels. Regardless matter how much, how often, or what kind of yoga was practised, researchers discovered that the benefits of yoga practise were consistent throughout studies. There was a substantial drop in perceived stress levels following the Hatha yoga intervention (from 13.6 1.2 to 8.9 1.2), which had a large effect size (1.38.1). Randomized control trial of 16-week Bikram yoga programme showed substantial decrease in perceived stress (P =.001, [95 percent confidence interval (CI): 2.1.1 to 7.4)] at the conclusion of the intervention in experimental and control groups (P =.013, [95 percent confidence interval (CI): 2.1.1 to 7.4)). It is claimed that Sudarshan kriya, Bhastrika pranayama, and Yoga nidra are all components of Sudarshan Kriya Yoga (SKY), which has been shown in prior studies to be a more effective stress management strategy than medicine. Researchers were looking at the relationship between yoga practise and advancing years. First-year college students highly valued stress management therapies, which Park et al. found to have dominating effects. School and home were both shown to benefit from the yoga-based intervention, which comprised of Kripalu yoga (a kind of hatha yoga). After a 16-week intervention, the PSS scores of men (n = 43, age: 45.5 [10.0]) and women (n = 43,

age: 47.1 [10.4]) who practised power yoga considerably decreased. Yoga's relationship to ageing was hinted at in the papers featured in this collection. An exercise class intervention based on the core concept of Hatha yoga and its yoga asanas was shown to have a substantial effect size (P =.052, d =.85) in the exercise group and a smaller effect size in the control group (age: 82.46 8.46 years). In addition, the Kundalini Yoga (KY) assessment after three months of consistent practise showed statistical significance in the basal measurement of felt stress. The Shambhavi Mahamudra kriya 3-day retreat is a yogic practise that combines both deep breathing and meditation methods that may serve as a natural cure for stress. However, the long-term effects of a yoga intervention should be taken into account. Short-term yoga practise may assist stressed individuals, according to Harkess29, but a long-term study is needed to discover the ideal dosage for long-term benefits. During the course of the trial, a total of 116 women aged 35 to 65 were randomly assigned to either a twice-weekly, hour-long yoga session or a waitlist control. A mixed-model variance analysis and a quadratic time (Time 2) included for PSS testing were used as statistical approaches, and stress levels were shown to be unchanged. The efficacy of yoga and mindfulness practise on stress has to be studied further. The two practises of yoga and mindfulness have their own unique characteristics and interrelationships. Mindfulness treatment may be practised in a variety of ways, including both meditation and yoga. Increased levels of mindfulness and lower levels of perceived stress were achieved by participants in the psychoeducational training programme YOMI (Yoga of Mindfulness and Yin Yoga). To further understand the effectiveness of mindfulness training in relieving stress in college students, Hunt et alundertook four-group research ("Mindfulness Training Alone"; "Yoga Alone"; "Multicomponent Mindfulness Training groups"; "Study Break with a Therapy Dog"). Stress levels were lower in the "mindfulness training alone" group than in the "yoga alone" and "combination" groups.

Yoga's ability to help people cope with stress is clearly shown. All yoga and yoga-based therapies (e.g., mindfulness-based yoga, meditation-based yoga) demonstrated significant stress-reduction benefits. Various perspectives on yoga's impact on stress management have been explored. Yoga and mindfulness can help alleviate and manage stress, according to the authors of this study. It's no secret that yoga has a long history as a type of body-mind treatment. Stress-related symptoms, such as tightness in the muscles and the mind, can be alleviated by specific physical positions and breathing exercises. Yoga's stress-relieving properties may have a biological basis in this theory. Yoga has a favourable impact on stress reduction in healthy adults, according to systematic research. Chong et al. proposed that further research on yoga's long-term impacts be conducted. In our research, we observed that the length of the yoga intervention appears to be a critical element in its efficacy. More conclusive findings came from studies that lasted a longer time span of intervention. Despite the fact that short-term interventions were similarly effective in relieving stress. Although short-term yoga can have positive advantages, they may not have a long-term effect as well Loss of muscle mass and decreased muscular function are both linked to ageing and a deterioration in physical function. 36 This evaluation included eight studies involving adults in their mid- to late-thirties or older. Baroreflex modulation was found to be a controllable impact of Yoga practise in the elderly population. It's important to examine this before implementing yoga with physical movement and gestures in older persons.

5. CONCLUSION

There are still many unanswered concerns about the link between exercise and ageing, but yoga's good benefits on the body were widely accepted. Stress management strategies such as cognitive behaviour therapy and yoga both have great potential. Given that there has been no evidence of a difference between yoga and cognitive behaviour therapy (CBT) in dealing with stress, it is proposed that research into the underlying neurologic functions of yoga and CBT be undertaken. A thorough understanding of yoga, with all of its variations, is highly

encouraged. Furthermore, physical activity has several well-known health advantages, and yoga's physiological benefits help individuals adapt to stressful situations, but severe exercise increases muscle oxygen flow and activates intracellular processes that can contribute to increased oxidative damage. 39 Despite this, additional research is needed to uncover the underlying processes that underlie its ability to reduce stress in healthy individuals.

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