

Abstract

Yoga is known to have both physical and mental health benefits. In this review the research question how researchers study the impact of yoga (timeline) on sleep quality and whether their methodologies result in different conclusions is analyzed. This paper is a systematic literature review comparing the methodologies of eight different articles, where each article conducts an original study comparing the effects of yoga on the sleep quality of the participants. Each article used the Pittsburgh Sleep Quality Index (PSQI) to measure and average the subjective sleep quality of the participants before and after assessments. In this research paper, data was collected from all the articles and analyzed it in a table. The number were standardized to reduce error from the articles using a different number of questions from the PSQI. From there, potential relationships, correlations, and connections between variables were analyzed. This study found that across the eight studies, seven found a positive impact of yoga on sleep quality, while one found a very minor negative change. The results demonstrated that the longer the yoga is practiced, the greater the positive change in sleep quality.

How Yoga Affects Sleep Quality: A Systematic Review

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Introduction

Yoga is known to have both physical and mental health benefits. In this systematic review, the effects of yoga sleep quality on yoga were studied. The yoga techniques varied including Yoga Nidra, Suryanamaskar, and Sudarshan Kriya Yoga. Some studies did not specify the specific technique. In every study, sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI). The PSQI is a self questionnaire with 19 questions, while five optional questions can be answered by a bed partner. The final score ranges from 0-21, where a higher answer indicates higher risk for sleep disturbances and sleep disorders. This literature review looked at how researchers studied the impact of yoga (timeline) on sleep quality, and if the different methodologies resulted in varying results. The aim was to find relationships between sleep quality and the length of yoga intervention, and make connections to find the best positive outcomes.

Methods

A systematic review was conducted of articles from Google Scholar, and selected after inspection for certain attributes. Eight key original studies that looked at yoga and sleep quality were selected, and data and evidence recorded in those studies were reviewed. All the eight articles used in this literature review implemented some specific yoga intervention, and studied the effects of yoga on the sleep quality of a group of participants. In every article, the PSQI was used as the primary method to measure the sleep quality of participants. Two of the articles implemented only 16 out of 19 of the self analyzing questions, so due to this, the scores were standardized when being analyzed, to reduce error. In the analysis, a focus was on finding similar patterns and comparing the data analyzed from the articles in a table.

Results

The test results and analysis found that the impacts of the yoga intervention on the sleep quality of the participants was almost completely positive. One article showed results that yoga done three times a week for eight weeks positively impacts the sleep quality as well as other outcomes in young female athletes during the Covid-19 pandemic [1]. Another study concluded that yoga could positively impact the sleep quality of prisoners, but there were limitations due to lack of follow-ups, and inability to control the psychological features of the participants [2]. Seven out of the eight studies resulted in an increase in sleep quality when yoga was practiced. The two studies which implemented yoga for eight weeks resulted in the greatest positive changes of 0.250 and 0.232, respectively. The study which only conducted six sessions showed a slight negative change, which borders as an unimportant change, but is still an interesting observation.

Article	Length of yoga	Type of Yoga	Timepoints measured on sleep	PSQI questions	Before	After	Follow-up	Change in before and after
[4]	60-minutes a day, four days a week, for six continuous weeks	Integrated Yoga	Day 0, Day 42	16	0.356	0.244	*	0.113
[5]	1 hour and 15 minutes each day for 3 day workshop, then 35 minutes daily for 40 days after	Sudarshan Kriya Yoga	Day 0, Day 3, Day 43	19	0.341	0.238	0.261	0.103
[2]	6 sessions, 90 minutes	General Yoga	Day 0, Day 7	19	0.112	0.119	*	-0.007
[6]	30 days, 11 minutes a day, follow-up after 6 weeks	Yoga Nidra	Day 0, day 30, 6 weeks after day 30	16	0.064	0.056	0.056	0.008
[1]	1 hour a day, 3 days a week, for 8 weeks	Hatha Yoga	Week 0, week 8	19	0.684	0.434	*	0.25
[7]	45 minutes a day for 6 days a week, for 4 weeks	General Yoga	Week 0, week 4	19	0.268	0.17	*	0.098
[8]	1.5 hours a day, every other day for a month	Integrated Yoga	Month 0, month 1	19	0.374	0.28	*	0.094
[3]	40-45 minutes a day, 3 days a week, for 8 weeks	Suryanamaskar	Week 0, Week 8	19	0.733	0.502	*	0.232

Table I: The key features of the studies reviewed are highlighted here. Before: Baseline, After: Post-intervention. All average scores have been standardized to reduce error.

Note: In the follow-up column, a * signifies lack of follow-up assessment. Only studies with a follow-up are filled in.
Note: The change in sleep quality is measured using the before and after columns, and does not include the follow-up column, as not every article contains a follow-up assessment.

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Discussion

The two articles with the longest period of intervention, namely eight weeks, had the greatest positive change in sleep quality. [1, 2]. The participants with the highest averages in PSQI score preceding the studies, appeared to have the most benefit with yoga. This suggests that yoga has greater positive impacts on individuals with a higher risk of sleep disturbance and sleep disorders.

The shortest yoga study, however, with only six sessions of yoga, showed a marginal increase in PSQI score post intervention. In the two longest studies, yoga was performed from 40-60 minutes a day, three times a week. One possibility is that consistent practice of yoga for a longer duration may have greater impact on sleep quality. The study with the second lowest average change in PSQI sleep quality scores, implemented yoga for 30 days, for just 11 minutes a day. The short yoga interventions may not have been enough for a greater change in sleep quality to take effect.

Conclusion

This literature review looked at how researchers studied the impact of yoga (timeline) on sleep quality, and if the different methodologies resulted in varying results. Future studies could be conducted to improve on the research methods used in these papers. One study contained a low average PSQI score before the tests, so in the future, a method could target participants who score higher on the PSQI, and are more at risk of sleep disturbances. Another proposal is to have the length of yoga intervention as a variable, to observe how that affects sleep quality. A research method could focus on when the yoga is performed in the day, by having participants practice in varying hours. Additionally, a study could be about how different types of yoga gather different results. Participants could perform varying types of yoga, while keeping the intervention time the same. A recommendation for further studies is to include follow-up assessments. Including an assessment sometime after the yoga has been completed will allow more data to be analyzed on how sleep quality changes when the yoga is not continued. In the future, more studies can be conducted regarding the methodologies used, for example comparing different types of yoga and the effect, or comparing the timelines used for yoga.