



EFFECT OF YOGIC PRACTICES ON INSOMNIA AND ITS INDUCED HEALTH DISORDERS - A SYSTEMATIC REVIEW

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ABSTRACT:

Introduction: Insufficient sleep is a global problem that is becoming increasingly common in today's scenario. Insomnia, a common sleep disorder which make hard to fall asleep, hard to stay asleep, or cause to wake up too early and not be able to get back to the sleep. It is estimated that 10-15% of the world population has insomnia. Insomnia not only affects the sleep pattern but also affects the holistic health of an individual. **Aim:** To explore the understanding of using Yoga practices to overcome insomnia and its induced health disorders by going through published scientific literatures. **Objectives:** The current systematic review was carried out with the objectives to see the effect of Yogic practices on Insomnia and its induced health disorders. **Method:** In accordance with the PRISMA guidelines, the electronic databases Medline, PubMed, Google Scholar, Cochrane and Jane has been searched from 2010 to 2022. All 41 studies were reviewed. Randomized control trail, cross-sectional studies, quasi experimental, Pilot study were followed in majority of papers. **Results:** After reviewing all the research, it is evident that Yogic practices are very effective on Insomnia along with the health disorders induced by it. **Conclusion:** After reviewing various literatures it can be concluded that yoga not only helps in management of insomnia and its induced disorders but also provide an holistic development to the body which can provide a delighted lifestyle.

Keywords: Yoga, Insomnia, Mental Health, Physical Health.

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INTRODUCTION

Yoga is a form of meditative movement that combines alertness and focused breathing with physical exercise. The practice of yoga said to be began over 3000 years ago and is appended in Indian philosophy. There are many schools or types of yoga. Each school/variation emphasizes some different postures or exercises, breathing techniques, meditative techniques and hand symbols/techniques with proper awareness [1].

Insomnia is the inability to fall asleep or stay asleep. Insomnia can have many long terms effect, including day time sleepiness and impairment, memory loss and mood changes. Studies have demonstrated that yoga can be beneficial in managing sleep problems such as insomnia [2]. Various studies have shown that 10%-30% worldwide population have insomnia. It is estimated that 10% to 15% of the adult population suffers from chronic insomnia disorder and an additional 25% to 35% have transient or occasional insomnia disorder worldwide [3]. Various Relaxation/ Meditative treatments such as progressive relaxation and meditation which address the cognitive and somatic arousal associated with insomnia have been found to be effective [4]. Yoga is a absolute discipline which includes physical exercises, postures, breathing techniques, hand

symbols/techniques and meditation for the purpose of improving health and well-being [5]. Insomnia can affect the well-being of a person and can affect their mental, physical and digestive health. There's a close relationship between sleep and mental health. Sleep is closely connected to mental and emotional health and has demonstrated links to depression, anxiety, bipolar disorder, and other conditions [6]. Mental health disorders tend to make it harder to sleep well. At the same time, insomnia can be a contributing factor to the initiation and worsening of mental health problems.

Both sleep and mental health are complex issues affected by a multitude of factors, but, given their close association, there is strong reason to believe that improving sleep can have a beneficial impact on mental health and can be a component of treating many psychiatric disorders [7]. Living with a mental health problem can affect one's sleep, and poor sleep can have a negative impact on individual mental health [8].

The relationship between insomnia and mental illness is bidirectional: about 50% of adults with insomnia have a mental health problem, in which sleeping problems may be both a cause and consequence of mental health problems [7]. It is also a common symptom of many mental illnesses,

including anxiety, depression, bipolar disorder and attention deficit hyperactivity disorder (ADHD) [9]. Sleep problems can also create a loop, slowing recovery from mental illness. For example, People with depression who continue to experience insomnia, for instance, are less likely to respond to treatment for depression [10]. Disturbed sleep is commonly reported across several somatic conditions [11]. Similarly, short and long sleep durations have been linked to specific illnesses such as type 2 diabetes and heart disease [12] [13].

Also, the relationship between sleep and overall physical health is well-documented. Sleep plays a vital role in one's mental and physical wellbeing. Different processes that occur during sleep help to promote healthy brain activity and maintain good overall health. Sleep allows both the body and brain to recover during the night. A good night's rest ensures one will feel refreshed and alert when wake up in the morning. Sleep deficiency will not only leave one feeling tired, but can increase the risk for a wide range of diseases and health problem. These include obesity, heart disease, high blood pressure, diabetes, and stroke. A lack of sleep also poses a threat to one's physical safety [14].

And several recent studies have also suggested a strong association between sleep

disturbances and gastrointestinal diseases. Although it is evident that sleep disturbances are often found in patients with gastrointestinal disease, it is difficult to find out the cause and effect of the disturbances. There is a unique interplay between certain gastrointestinal diseases and sleep. Poor sleep has been shown to result in the exacerbation of gastrointestinal symptoms. Inversely, many gastrointestinal diseases affect the sleep-wake cycle and lead to poor sleep [15].

LITERATURE REVIEW

There is a systematic review on the effect of yoga on sleep quality and insomnia in women with sleep problems and the result signifies that yoga intervention in women has benefits compared to non-active control conditions in term of managing sleep problems [2]. In an study of research named Yoga of Immortals Intervention (YOI) Reduces Symptoms of Depression, Insomnia and Anxiety shows that participants who completed the YOI intervention reported significant decreases in symptoms of anxiety, depression, and insomnia [16].

There was a study on the topic Yoga decreases insomnia in postmenopausal women and this study showed that a specific sequence of yoga might be effective in reducing insomnia and menopausal symptoms as well as improving quality of life in postmenopausal women with

insomnia [17]. A study was done on about the yogic effectiveness in improving fatigue, anxiety, and depression in chronic insomnia disorder concluded that there is a positive impact of Yoga practice on subjective parameters related to sleep quality, sleepiness, fatigue, anxiety, and depression in insomnia patients [18].

In another study that shows the effectiveness of app-based Yoga of Immortal (YOI) intervention for insomnia in Asian population and the result shows that YOI reduced mean ISI scores in all categories of insomnia among most age groups in both genders. YOI also improved sleep in subjects with associated psychiatric conditions. YOI can be used as a stand-alone option or adjunctive treatment of insomnia, and may be used in healthy individuals to prevent insomnia [19]. In another study that is held on the treatment of insomnia with kundalini yoga and the result signify that for over 50% of yoga participants, the insomnia severity index decreased by at least 8 points at end of treatment and follow-up [20].

The aim of the current study was to explore the understanding of using Yoga practices to overcome insomnia and its induced health disorders by going through published scientific literatures. The study set some objectives to

achieve viz. primary objectives and secondary objectives.

The primary objectives were: to study the effect of yogic practices on insomnia and its induced disorders; to review in depth the published literature with Yoga intervention on insomnia; to explore the applicability of selected yogic practices in patient with physical, mental and digestive disorders and to understand the linked mechanism of sleep and wellbeing with shatkarma intervention.

The secondary objectives were: to understand the protocol applicable to patient of insomnia; to find out the solution through lifestyle and yoga intervention in management of holistic health and to study the relationship between insomnia and health disorder with management through yoga.

MATERIALS AND METHOD

In accordance with the PRISMA guidelines, the electronic databases Medline, PubMed, Google Scholar, Cochrane and Jane will be searched from 2010 to 2022. All studies identified for inclusion were peer-reviewed and published in English.

The inclusion criteria were: full length paper; research paper and articles published between 2010-2022; peer reviewed papers; published in English language; yoga as primary intervention and full available research papers.

There were some set exclusion criteria: only languages other than English and research abstract articles; articles before 2008; papers with intervention other than Yoga.

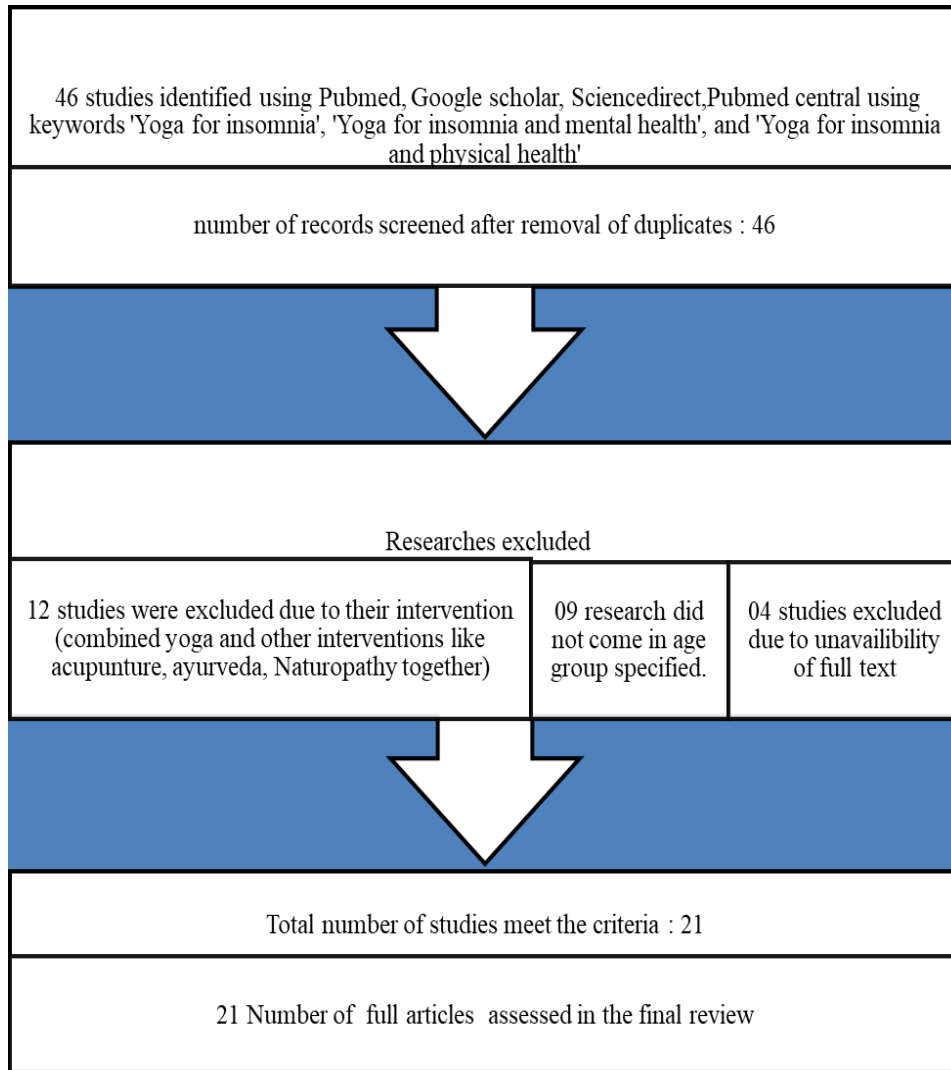


Fig. 1 - FLOW CHART: Showing the Reviewed Studies

RESULT

After going all the available literature, it is evident that Yogic practices are very effective on Insomnia along with the health disorders induced by insomnia. Different aspects are explored but in many of the articles, there are no presence of physical and mental disorder induced by insomnia present and only shows intervention to improve insomnia. Also, some have other therapeutic along with yogic intervention for curing insomnia. Future research may be conducted using independently on health disorders induced by Insomnia with objective assessment tools. Many of the yogic interventions are not used in exploring the possibility of treating insomnia through it.

Table no. 1. Scientific analysis of published previous research works

S.No.	TITLE	AUTHOR	YEAR	SAMPLE SIZE	DURATION	METHODOLOGY	OUTCOMES
01.	Effect of trataka (yogic gazing) on insomnia severity and quality of sleep-in people with insomnia.	Shathirapathiy et al., 2022	2020	29	10 days	Quasi-experimental research	Trataka may be considered as a treatment modality in reducing insomnia severity and in improving quality of sleep-in people with insomnia.
02.	Effect of Sudarshan Kriya Yoga on anxiety, depression, and quality of life in people with type 2 diabetes.	Shiju et al., 2019	2019	26	15weeks	Pilot study	Regular practice of yoga has positive impact on hormonal regulations thus reducing anxiety, depression, improving sleep, increase in parasympathetic activity.
03.	Gentle yoga for sleep disturbance in women with osteoarthritis.	Taibi & Vitiello, 2011	2011	13	8 weeks	Pilot study	The study demonstrated that yoga practice designed to improve sleep in middle aged to older women with OA was highly feasible and produced promising preliminary efficacy.
04.	The effects of yoga on student mental health: a randomized controlled trial.	Elstad et al., 2020	2020	202	2 weeks	Randomized control trail	yoga reduced psychological distress and sleep problems among the students with effects.
05.	Implementation of Yoga to Treat Insomnia in an	Penders, n.d.	2021	07	4 Weeks	Retrospective methodology	Four weeks of yoga improved insomnia and anxiety symptoms,

	Adult Population.						shortened sleep latency, and improved sleep duration in women with chronic insomnia
06.	A randomized controlled trial of mindfulness meditation for chronic insomnia.	Ong et al., 2014	2014	54	24 weeks	Randomized controlled trails	Mindfulness meditation appears to be a viable treatment option for adults with chronic insomnia and could provide an alternative to traditional treatments for insomnia.
07.	<i>Yoga Nidra</i> : An innovative approach for management of chronic insomnia- A case report.	Datta et al., 2017	2017	02	4 weeks	Case study	<i>Yoga nidra</i> can be used as an important adjunct in management of chronic insomnia patients.
08.	Association Between Insomnia and Constipation: A Multicenter Three- year Cross-sectional Study Using Shift Workers' Health Check-up Data.	Yun et al., 2022	2022	17529	3 years	Cross sectional study	showed that insomnia is considerably associated with constipation.

09.	Assessment of the Relationship Between Quality of Sleep and Disease Activity in Inflammatory Bowel Disease Patients.	Ali et al., 2013	2013	41	Not mentioned	Cohort study	show a strong association between clinically active IBD and poor sleep quality and demonstrate that patients in clinical remission with abnormal sleep have a high likelihood of subclinical disease activity.
10.	The Effect of Yoga Therapy on Selected Psychological Variables Among Male Patients with Insomnia.	Sobana et al., 2013	2013	40	8 weeks	Randomized Control Trail	There was a significant betterment of the stress scores and the self-confidence scores after eight weeks of yoga therapy in men with insomnia.
11.	The effect of mindfulness meditation on sleep quality: a systematic review and meta-analysis of randomized controlled trials.	Rusch et al., 2019	2019	1654	52 weeks	Randmized control trail	Results indicated that mindfulness meditation significantly improved sleep quality compared with nonspecific active controls
12.	Qualitative Impressions of a Yoga Nidra Practice for Insomnia: An Exploratory Mixed-Methods Design.	Sharpe et al., 2021	2021	33	Not mentioned	Mixed method design	Yoga Nidra appeared tolerable within the sample, and descriptions suggest it may be useful for enhancing relaxation, facilitating sleep, easing anxiety, and reducing pain.

13.	The effect of laughter Yoga on general health among nursing students.	Yazdani et al., 2014	2014	38	4 weeks	Quasi-experimental design	Result shows a positive effect on students' general health and improved the signs of physical and sleep disorders, lowered anxiety and depression, and promoted their social function.
14.	A randomized controlled pilot study of the effects of 6-week high intensity hatha yoga protocol on health-related outcomes among students.	Papp et al., 2019	2019	44	6 weeks	Pilot study	The analysis of high intensity hatha yoga exercise (HIY) training dose, showed that more HIY home training was associated with less symptoms of depression, better sleep quality, and less insomnia symptoms.
15.	Effect of Yogic Practices on Insomnia Patients.	Shrikrishna & Mahendra, 2012	2012	40	8 weeks	Randomized Control Trail	The findings of the study clearly shows that yogic programme was effective in medicating insomnia

DISCUSSION

After going through published research papers it is found that Yoga practices are very potent in management of insomnia and insomnia induced disorders. If people who are having such disorders practice Yoga regularly, it brings upon considerable improvement in its various parameters. It also helps in reduction of mental health problems, thereby regulating the secretion and uptake of insulin. Yoga,

when imprint in lifestyle proves to be very effective in Insomnia management and long-term yoga practices yield various other benefits, including improved cardio-health, gut health, stress management and Quality of Life. Sleep is a very important factor affecting the health of an individual, just like nutrition. It is a basic requirement for the normal functioning of metabolic, endocrine, neurological, and

cognitive functions; it is vital for one's health and general well-being [36].

The current review was focused to explore insomnia and its induced health disorders and also to see the effect of yogic intervention in it. After completing the review, the result was very much encouraging to see that all the published research show that yoga was as effective as relaxation techniques and increasing physical and mental health and sleep ability.

Yoga is a multifaceted practice with interrelated components related to physical, mental and emotional wellbeing. Thus, regular practice of yoga has positive impact on hormonal regulations thus reducing anxiety, depression, improving pain, sleep, immune markers. Improving sleep quality had, on average, a medium-sized effect on mental health, including clear evidence that improving sleep reduced depression, anxiety, and stress researches found a dose response relationship between improvements in sleep quality and subsequent mental health, such that greater improvements in sleep led to greater improvements in mental health. The findings suggest that improving sleep leads to better mental health, therefore providing strong evidence that sleep plays a causal role in the experience of mental health difficulties [7].

The present research supports the idea that targeting sleep promotes mental health across a range of populations and experiences. The effect of improving sleep quality on composite mental health was medium-sized and statistically significant, regardless of the presence of physical and/or mental health comorbidities [37]. Improving sleep has also been shown to improve aspects of physical health, including fatigue, chronic pain, and overall health related quality of life and could reduce the cost of healthcare [36]. Previous reviews have reported that yoga is beneficial to bring small positive effect for improving the quality of life [38].

Beneficial effects of seated meditation, breathing practices, and yoga asana practices are associated with a reduction in sympathetic nervous system activation. This is proven by parallel reductions in catecholamine epinephrine and norepinephrine levels, thus reducing the stress, thereby improving insomnia [5]. Normal healthy sleep, regulation of circadian rhythm, and maintenance of internal biological clock are dependent on melatonin, a hormone secreted in the pineal gland [39]. Meditation and yoga have been shown to enhance the activity of melatonin, thereby improving insomnia [40].

The current study also found the same mechanism involved in the different studies

which were carried out in the past. In this way yogic practices are prone to give parasympathetic effects on the nervous system. They are very effective to overcome adverse effects of insomnia induced disorders. Yogic practices induced relaxative impact on the functioning of all systems of human body.

STUDY LIMITATIONS

The current study was focused only to review the articles published from 2010 to 2022. The study was limited to see only the articles with yogic intervention, articles with different aspect of the insomnia and its induced disorders. The attempts were also made to select only full articles. There may be more scientific reports but due to its limitation of certain domain database, articles could not include in the review.

FUTURE DIRECTIONS

Future research may be focused to assess the information about insomnia with subjective and objective tools. Moreover, research may also be directed to see the effects of various yogic practices independently on insomnia and its various induced disorders and its physiology after intervention.

CONCLUSION

After going through scientific literatures on the topic selected for the review, it is found that Yoga practices are very potent in management of insomnia and insomnia

induced disorders. If people who are having such disorders practice Yoga regularly, it brings upon considerable improvement in its various parameters. It also helps in reduction of mental health problems, thereby regulating the secretion and uptake of insulin. Yoga, when imprint in lifestyle proves to be very effective in Insomnia management and long-term yoga practices yield various other benefits, including improved cardio-health, gut health, stress management and Quality of Life. Yoga also helps in reduction of physical disorders and removal of toxins accumulated in various systems. It helps in increasing flexibility and improved range of motion. There are a lot of literatures talking about the overall benefits of yogic practice in current scenario. These practices are very much helpful to improve micro-circulation and improve cardiac output, thus, helping to recover adverse effects of insomnia.

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