

An Analysis upon the Impact of Yoga Therapies on Insomnia: Some Treatment

Ankit*

M.A. in Yoga Science, Department of Physical Education, MDU, Rohtak

Abstract – There is good evidence for cognitive and physiological arousal in chronic insomnia. Accordingly, clinical trial studies of insomnia treatments aimed at reducing arousal, including relaxation and meditation, have reported positive results. Yoga is a multicomponent practice that is also known to be effective in reducing arousal, although it has not been well evaluated as a treatment for insomnia. In this preliminary study, a simple daily yoga treatment was evaluated in a chronic insomnia population consisting of sleep-onset and/or sleep-maintenance insomnia and primary or secondary insomnia.

Having its origins in India thousands of years ago, yoga is a mind-body practice. The Yoga Sutras (aphorisms) describe eight limbs of practice: yama (moral behavior), niyama (healthy habits), asanas (physical postures), pranayama (breathing exercises), pratyahara (sense withdrawal), dharana (concentration), dhyana (contemplation) and samadhi (higher consciousness). Yoga helps achieve balanced health by connecting the mind and body through a series of postures, breathing exercises and meditation. Regular practice results in an increase in flexibility and strength, an improvement in posture, and better mood and concentration. Today millions of people in all over world practice yoga on a regular basis. Over the last decade, several scientific studies have established therapeutic benefits of yoga practice. As a result, yoga has emerged as a potential integrative modality for the management of several common medical diseases. This study is aimed at therapeutic benefits of yoga. It also provides effects of yoga practices on insomnia, treatments.

INTRODUCTION

A number of contributory factors have been implicated in chronic insomnia, including psychological conditioning, constitutional predisposing factors, dysfunctional beliefs and attitudes, and cognitive and physiological arousal. The observed elevated physiological arousal may be related to activation of the stress system in these patients and is the basis for a hyperarousal hypothesis of insomnia. It has been suggested that "insomnia is a disorder of inappropriate arousal," rather than a disorder of sleep, and that "treatment strategies should be directed toward normalizing the level of arousal". In support of this hypothesis, cognitive and somatic relaxation techniques have been reported to be effective treatments. Yoga is a comprehensive system whose aim is the achievement of physical, psychological, and spiritual health and well-being, and incorporates a wide variety of postural/exercise, breathing, and meditation techniques as it is believed that different techniques can produce unique psychophysiological effects and that this specificity can be used to target specific disorders. Basic research on yoga has suggested that it is effective in influencing psychophysiological, neuroendocrine, and autonomic parameters, and therefore, has mostly been used to treat disorders

that have a strong psychosomatic or psychological component. Research on the efficacy of yoga has been reported on its component techniques independently, as well as on its practice as a comprehensive multicomponent discipline.

A number of contributory factors have been implicated in chronic insomnia, including psychological conditioning, constitutional predisposing factors, dysfunctional beliefs and attitudes, and cognitive and physiological arousal. The observed elevated physiological arousal may be related to activation of the stress system in these patients and is the basis for a hyper arousal hypothesis of insomnia. It has been suggested that "insomnia is a disorder of inappropriate arousal," rather than a disorder of sleep, and that "treatment strategies should be directed toward normalizing the level of arousal". In support of this hypothesis, cognitive and somatic relaxation techniques have been reported to be effective

Yoga is a comprehensive system whose aim is the achievement of physical, psychological, and spiritual health and well-being, and incorporates a wide variety of postural/exercise, breathing, and meditation techniques. Yoga has also been used as a therapeutic treatment as it is believed that different

techniques can produce unique psycho physiological effects and that this specificity can be used to target specific disorders. Basic research on yoga has suggested that it is effective in influencing psycho physiological, neuro endocrine, and autonomic parameters, and therefore, has mostly been used to treat disorders that have a strong psychosomatic or psychological component. Research on the efficacy of yoga has been reported on its component techniques independently, as well as on its practice as a comprehensive multi component discipline.

As a prevalent sleep disorder, insomnia has become a public health problem, including subjective sleep complaints (e.g., poor sleep quality, inadequate sleep time), difficulties in sleep onset/maintenance, waking up too early, or no refreshing sleep. Insomnia is associated with significant distress or daytime impairment. It can occur independently or with other physical disorders and diseases (e.g., cancer, hypertension) and psychiatric disorders at a high rate of comorbidity. Sleep plays an important role in individual health. The functions of the brain, the cardiovascular system, the immune system, and the metabolic system are closely associated with sleep.

According to recent epidemiological studies, almost 25% of adults had sleep complaints, 10-15% had insomnia symptoms accompanied with daytime consequences, and 6-10% met the diagnostic criteria of insomnia disorder. Thus, it is necessary to find effective therapies for insomnia. Pharmacological treatment and cognitive behavioral therapy for insomnia (CBT-I) are widely used and have shown effectiveness. Pharmacotherapy is a traditional treatment for insomnia and has been tested and proven to improve sleep outcomes. Due to the risks of daytime residual effects and substance dependence, no pharmacological treatments have attracted clinicians' attention. CBT-I is an effective non pharmacological treatment that is most commonly used for insomnia. Many studies have shown that CBT-I can significantly improve sleep quality and reduce insomnia severity. However, CBT-I is intensive, requiring administration by highly trained therapists. Many other mind-body therapies (MBTs) also have effects on mitigating insomnia and produce various psychological and health functioning benefits. Examples include mindfulness meditation, tai chi, yoga, relaxation therapy, and music. In this paper, we focus on four types of MBTs—meditation, tai chi, qigong, and yoga—which have been researched in a large number of studies and are widely used for clinical patients and community populations.

As an ancient practice, meditation is part of many spiritual traditions and types that emphasize training the mind, especially attention. Mindfulness meditation is mostly researched and used in both clinical and normal populations. It has also been mostly researched in mindfulness based stress reduction (MBSR) and other variants of this practice, such as mindfulness-based cognitive therapy (MBCT), mindfulness-based psychological care (MBPC),

mindful awareness practices (MAPs), and meditation awareness training (MAT). Mindfulness meditation guides individuals to pay attention to present moment experiences with openness, curiosity, and no judgment.

INSOMNIA: AN OVERVIEW

Insomnia is often defined as sleeping difficulties—difficulty falling asleep and/or staying asleep or sleep of poor quality. Various causes contribute to insomnia, such as use of psychoactive drugs, caffeine, nicotine, amphetamines, cocaine; hormone shifts (including menstruation and menopause); life events including fear, stress, anxiety, emotional or mental tension, work problems, financial stress, birth of a child, bereavement; disturbance of the circadian rhythm (such as shift work and jet lag); certain neurological disorders; medical conditions including hyperthyroidism and rheumatoid arthritis; and poor sleep hygiene, e.g., noise. In case of insomnia of the traumatic experience of tsunami, the following are the causes of insomnia:

1. Feeling of grief and loss

Many of their houses destroyed, friends disappeared, one or both parents killed, their children killed or disappeared, siblings and other close family members missing. The feeling of grief and loss is always with those who survived the tsunami. There is also the shock of identifying bodies for victims as well as aid workers.

2. Feeling of guilt about surviving

Many of them tried to escape together though, only some were saved. Many of them are captured by the feeling of guilt about surviving.

3. Continued earthquakes and flashbacks

Earthquakes (small to medium scale) have been continuously happening; and the tsunami siren keeps them awake and alert. Even a small earthquake brings them flash backs of the tsunami, which greatly contribute to insomnia.

4. Fears of radiation

Parents, many traumatised themselves, have struggled to keep their own fears in themselves as they try to soothe their children. Children have been also stressed as many of them cannot play outside because of the radiation problem, which further brings tense and anxiety to the parents. Fears of radiation are also extended to farm and sea products. Many people in the earthquake affected areas are making living from either agricultural products or fishery. The radiation problems directly threaten their living.

5. Fears of future

Many victims lost their jobs, houses and precious belongings. Some are also suffering from loans of

their lost houses. Uncertainty of the future is always with them. Many are feeling lost completely and cannot find any hope in their futures.

6. Loneliness

Many are suffering from loss and facing loneliness. Suicide attempts have been increasing. A survey shows an 18 per cent national increase in suicides. In May, 3,281 people killed themselves, 499 more than the same month in 2010. Loneliness is greatly contributing to this figure.

Physiologically, major depression leads to alternations in the function of the hypothalamic-pituitary-adrenal axis, causing excessive release of cortisol which can lead to poor sleep quality. Sleep studies using polysomnography have suggested that people who have sleep disruption have elevated nightmare levels of circulating cortisol and adrenocorticotrophic hormone. They also elevate metabolic rate, which does not occur in people who do not have insomnia but whose sleep is intentionally disrupted during a sleep study. This maybe a contributing factor of long-term insomnia.

Potential complications of insomnia include lower performance, slowed reaction time, risk of depression, risk of anxiety disorder, poor immune system function, high blood pressure, risk of heart diseases, risk of diabetes and obesity.

Insomnia is defined as repeated difficulty with the initiation, duration, maintenance, or quality of sleep and resulting in some form of daytime impairment. Chronic insomnia is associated with impaired occupational and social performance. It is associated with higher healthcare use, with a 2-fold increase in hospitalizations and office visits. Insomniacs have an elevated absenteeism rate that is 10-fold greater than controls. Chronic insomnia is also a risk factor for depression and a symptom of a number of medical, psychiatric, and sleep disorders. Pharmacological agents used in the treatment of insomnia are often associated with hazardous side effects. Yoga practice may help produce a significant improvement in sleep quality and related daytime impairments in these patients (23, 24).

DIFFERENT YOGA TECHNIQUES FOR INSOMNIA

The yoga exercises used were from the Kundalini Yoga style (as taught by Yogi Bhajan) that emphasizes meditation and breathing techniques in addition to postures, which is easy to perform and is practiced widely. The exercises chosen were selected because they were specifically recommended for improving sleep and were easy to learn and perform with minimal instruction. The same set of exercises was performed every day during the intervention. All exercises were done in the seated posture, with

instructions to maintain the spine erect but relaxed, with all breathing through the nose, and with eyes closed unless otherwise specified. Special attention in the initial training session was devoted to specific instructions on the practice of long, slow abdominal breathing to insure that participants understood this breathing pattern. Participants were instructed to breathe as slowly as was comfortable.

In this paper, the following five techniques of yoga are presented, namely, yoga nidra; Omkar and mantra chanting; Asana, pranayama and shatkarma; Meditation; and life style & diet.

1. YOGA NIDRA

One of the most important and effective practices of yoga for insomnia is yoga nidra (or yogic sleep) as it brings deeper relaxation on both mental and emotional levels. Half an hour practice of yoga nidra is equivalent to four hours of deep sleep. The great aspect of yoga nidra is that there is no contraindication, e.g., anyone can practice it. It is also possible to remove stress, pain, emotional blockages, and even bad habits through the practices of yoga nidra. Also, some experiments showed the increase of memory function and learning capacity. Yoga nidra has been applied for treatments of various diseases, including cancer, chronic diseases, psychological disorders, drug addiction, alcoholism and so on.

2. OMKAR AND MANTRA CHANTING

Omkar chanting brings positive effects to the patient. The vibration of this sound brings calmness in the mind. The cells of the body would be harmonized as each cell of the body is made by various atoms which carry electrons—vibrations. Even listening to the chanting helps to reduce blood pressure.

However, in Japan, there is a great challenge to promote this universal sound as many of us remind of a cult group of "AUM Shinrikyo" (currently known as Aleph). Their religious practices were referred as "yoga", with a mission of spreading the word of "salvation". This group manufactured chemical weapons and attacked Tokyo subways in 1995, killing and affecting many people. This brought people's great misunderstanding on yoga, although yoga has regained its reputation and popularity recently. It would be one of the great reasons why some Japanese still believe that yoga is a religion and they refrain from learning more about yoga. It shall be possible to slowly introduce omkar as one of the useful techniques of yoga therapy. However, in order to avoid any unnecessary misunderstanding, it would be better to include this omkarin yoga nidra, or just let the patient listen to the vibrations of the om. Probably, in Japan, instead of omkar chanting, mantra chanting will be easier to practice. Mahamrityunjaya mantra will be excellent for the patients suffering from insomnia as it provides

healing and balancing effects. Gayatri mantra will be effective especially in the morning as it increases pranic energy and stabilize emotion.

3. ASANA, PRANAYAMA AND SHATKARMA

All asanas, pranayamas and shatkarma are beneficial for the treatment of insomnia. A brief introduction and benefits of each practice are presented below.

Benefits of asana practices

In the *Yoga Sutra* of Patanjali, asana is defined as “comfortable and steady postures (*sthiram sukham aasanam*)”. In this context, one can develop control of the body through the asana practices and further enable to control the mind as well. More importantly, insomnia patients can develop awareness on their body and mind, which is beneficial for the treatment of insomnia.

Benefits of pranayama practices

Pranayama is generally defined as breath control. The ‘prana’ means ‘vital energy’ or ‘life force’; ‘yama’ means ‘to control’; and ‘ayama’ means ‘extension’ or ‘expansion’. As such, pranayama utilizes breathing to influence the flow of prana or life force. Through the practices of pranayama, patients gain great benefit of controlling their mind. However, it is important for patients to start practicing deep breathing for preparation of pranayama. Deep breathing practices bring patients various benefits—calmness, relaxation, more oxygen to organs, massage effects on inner organs and so on.

Benefits of shatkarma

‘Shat’ means ‘six’ and ‘karma’ means ‘action’; the shatkarma consists of six groups of purification or cleansing practices to attain physical and mental balance. It is also used to balance the three doshas or humours in the body (*kapha, pitta* and *vata*). According to both ayurveda and hatha yoga, an imbalance in the doshas will result in illness. It is essential to be personally instructed as to how and when to perform them, according to individual limitations and needs. For patients of insomnia suffering from tsunami experience, vaman dhauti (regurgitative cleaning) is especially recommended as it helps to release the suppressed emotional stress along removing excess mucus and accumulated acidity from the stomach.

4. MEDITATION

Meditation practices harmonize our perceptions, thinking, emotions and behaviours. It is good to make a balance between the body and the mind. Ideally, the patients sits in any comfortable meditation posture and practice meditation. However, if this is difficult, the following mindfulness practices could be suggested:

√ Awareness of breathing in their daily life. They can practice this anytime, anywhere. This is beneficial for patients as they can know more about their own bodies.

√ Mindfulness eating, working, talking, listening and any daily routine, encouraging the patients to focus on the ‘present’ moment. This is again, an important practice as many of them do not exactly present at the moment, e.g., they are captured by their past or worrying about future.

√ Encourage the patient to do other “mediation-in-motion” practices. In Japan, there are many traditions which can be considered as “meditation” practices, such as tea ceremony, Japanese flower arrangement and Japanese calligraphy. Patients may find it easier and enjoyable to start practicing meditation with these traditions.

5. LIFE STYLE AND DIET

Karma yoga life style is highly recommended to the patient. Many patients have difficulty to accept the situation they are in and worry about the future. They are hardly in the present moment. Karma yoga leads the patients to accept themselves as they are; accept the world and the surrounding environment; accept their past and all events. Through the acceptance, patients can live in the present moment and be able to approach realistically toward their problems. Furthermore, patients will find the meaning in their lives that will give them more strength and positive energy to overcome the experience of the tsunami. As patients get involved in the present moment and focus on “here and now”, their understanding toward themselves as well as other people will be enriched. They will nourish their ability to see the situation from others point of view. These aspects cannot be attained by the practice of asanas only. Karma yoga directly connects to daily life of the patients; and gives a more relaxed and understanding attitude towards life and other people.

Diet is essential as our body is what we eat and it brings impact to the mind as well. Patients should avoid caffeine and alcohol intakes as they contribute to sleep difficulties. Yogic diet is highly recommended. However, it is probably difficult for many Japanese, especially those based in areas affected by the tsunami, as many of them make living by fishery. Considering this, the practice of Ms. Hatsume Sato could be recommended to the patients suffering from insomnia. Ms. Hatsume, the founder of Mori-no-Ischia, a forest retreat in northern Japan, has been helping thousands of people to recover from depression through her insightful conversation and traditional Japanese homemade cooking using natural ingredients. People who have eaten her legendary ‘Omusubi’ or rice-ball give up the idea of suicide and receive strength to face their problems. Why it is so special? It is because her thought is always with each ingredient until the very end of the cooking. She believes that each ingredient or life has

'heart' in it. Her way of cooking is sincere and fully of love and gratitude to each ingredient or life. For example, when she cuts a bunch of spinach, she does not cut them at random, instead, she re-bundles each leaf into one before cutting; and when she cuts them into pieces, she pour her 'heart' into each piece of the spinach and tries to connect to the 'heart' of the spinach. It will totally change everything whether we think the existence of 'heart' is the most important thing or just a delusion. She cooks a simple meal only, but people who eat her heartfelt meal cry and unload their burdens in their hearts. "How to cook" and "how we appreciate the food" bring significant change to our body and mind.

EXISTING SCIENTIFIC EVIDENCE

Yoga for the Treatment of Insomnia and Sleep Quality Impairment-

The study suggests that yoga is helpful in treating depression, anxiety, fatigue and other conditions associated with sleep disorders among healthy individuals and those with cancer. Herein, we review the extant literature on yoga and its use in the treatment of sleep problems among cancer patients

A Holistic Mind-Body Mode of Exercise -

Yoga is a more and more popular mind-body put into practice and is also characterized as a mindfulness mode of exercise. There are many different styles and types of yoga. These are based on Eastern civilization from India (e.g. Classical, Advaita Vedanta, Tantra), Tibet (e.g. Tibetan), and China (e.g. Chi Kung, Tai Chi). The word yoga is derived from its Sanskrit root 'yuj' which factually means 'to yoke' or join together. In this case, yoga refers to joining the mind and the body. The earliest forms of yoga were firmly rooted in physical and mindful (breathing and meditative) practices and led to what is known today as traditional yoga which forms the basis for most of the yoga currently taught today. Hatha yoga, the foundation of all yoga styles and the most accepted form, includes both Gentle Hatha and Restorative yoga, and is growing in acceptance for healing use in traditional Western medicine. Gentle Hatha yoga focuses on physical aspects and is fraction of many styles of yoga, including Iyengar, Anusara, and others. Restorative yoga focuses on full recreation and is part of the Iyengar style. The mixture of Gentle Hatha and Restorative yoga may provide an effective approach for improving sleep because it utilizes a holistic series of meditative, breathing, and physical position exercises, requiring both the active and passive engagement of skeletal muscles. Existing scientific evidence suggests that yoga is effective for improving insomnia and sleep quality injury in cancer patients and survivors.

CONCLUSION

The greatest aspect of yoga therapy is that it has no side effects (or it has only good side effects). It does have limitations, however, considering various benefits and long-time effectiveness of yoga, the author believes that yoga has great potential as a supplemental therapy to modern medicine. The case of insomnia is one of the best examples that yoga therapy can play a significant role on treatment. Yoga is practiced by most people to improve their physical health and fitness, relieve stress, and enhance the quality of life. However, yoga is increasingly being recognized as an important complementary therapeutic modality in disease states. Physicians are increasingly integrating postures, breathing exercises and meditation in the treatment of patients' health disorders. Yoga is readily available, is easy to perform, incurs no cost and has a low attrition rate. Although generally safe, it is advisable for people with uncontrolled blood pressure, a good treatment insomnia, glaucoma, or sciatica. Years of human experience has established that the regular practice of yoga is an excellent way to maintain overall health and to prevent illness.

REFERENCES

1. Bonnet, M. H., & Arand, D. L. (1995). 24-Hour metabolic rate in insomniacs and matched normal sleepers. *Sleep*, 18, pp. 581–588.
2. Bonnet, M. H., & Arand, D. L. (1997). Hyperarousal and insomnia. *Sleep Medicine Reviews*, 1, pp. 97–108.
3. C.M. Morinand R. Benca (2012). "Chronic insomnia," *The Lancet*, vol. 379, no. 9821, pp. 1129–1141.
4. Cohen L, Warneke C, et. al. (2004). Psychological adjustment and sleep quality in a randomized trial of the effects of a Tibetan yoga intervention in patients with lymphoma. *Cancer*. 2004 May 15;100(10): pp. 2253-60.
5. E. C. Hanlon and E. Van Cauter (2011). "Quantification of sleep behavior and of its impact on the cross-talk between the brain and peripheral metabolism," *Proceedings of the National Academy of Sciences of the United States of America*, vol. 108, Supplement 3, pp. 15609–15616.
6. Khalsa, S. B. S. (2004). Yoga as a therapeutic intervention: A bibliometric analysis of published research studies. *Indian Journal of Physiology and Pharmacology*, 48, pp. 269–285.
7. L. Xie, H. Kang, Q. Xu et. al. (2013). "Sleep drives metabolite clearance from the adult

brain,” *Science*, vol. 342, no. 6156, pp. 373–377.

8. M. M. Ohayon and C. F. Reynolds III (2009). “Epidemiological and clinical relevance of insomnia diagnosis algorithms according to the DSM-IV and the International Classification of Sleep Disorders (ICSD),” *Sleep Medicine*, vol. 10, no. 9, pp. 952–960.
9. Martin, J. L., & Ancoli-Israel, S. (2002). Assessment and diagnosis of insomnia in non-pharmacological intervention studies. *Sleep Medicine Reviews*, 6, pp. 379–406.
10. Morin, C. M., Hauri, P. J., Espie, C. A., Spielman, A. J., Buysse, D. J. & Bootzin, R. R. (1999). No pharmacologic treatment of chronic insomnia. *An American Academy of Sleep Medicine review. Sleep*, 22, pp. 1134–1156.
11. Murphy, M. & Donovan, S. (1999). *The physical and psychological effects of meditation: A review of contemporary research with a comprehensive bibliography 1931–1996* (2nd ed.). Sausalito, CA: The Institute of Noetic Sciences.
12. Raub, J. A. (2002). Psycho physiologic effects of Hatha Yoga on musculoskeletal and cardiopulmonary function: A literature review. *Journal of Alternative and Complementary Medicine*, 8, pp. 797–812.
13. S. N. Garland, L. E. Carlson, A. J. Stephens, M. C. Antle, C. Samuels, and T. S. Campbell (2014). “Mindfulness-based stress reduction compared with cognitive behavioral therapy for the treatment of insomnia comorbid with cancer: A randomized, partially blinded, no inferiority trial,” *Journal of Clinical Oncology*, vol. 32, no. 5, pp. 449–457.
14. Saper, R. B., Eisenberg, D. M., Davis, R. B., Culpepper, L., & Phillips, R. S. (2004). Prevalence and patterns of adult yoga use in the United States: Results of a national survey. *Alternative Therapies in Health and Medicine*, 10, pp. 44–49.
15. T. Ara´ujo, D. C. Jarrin, Y. Leanza, A. Valli`eres, and C. M. Morin (2017). “Qualitative studies of insomnia: Current state of knowledge in the field,” *SleepMedicine Reviews*, vol. 31, pp. 58–69.
16. Vgontzas, A. N., Tsigos, C., Bixler, E. O., Stratakis, C. A., Zachman, K., Kales, A., et. al. (1998). Chronic insomnia and activity of the stress system: A preliminary study. *Journal of Psychosomatic Research*, 45, pp. 21–31.

Corresponding Author

Ankit*

M.A. in Yoga Science, Department of Physical Education, MDU, Rohtak

ankitbiban@gmail.com