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Effect of Classical Yoga Therapy on Systolic Blood Pressure and Anxiety Among Adults with Insomnia

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Abstract: Thirty insomniacs, aged 35 to 60, were randomly selected from the general population of Chennai and split into two groups, A and B, each with 15 individuals. It was hypothesised that middle-aged men who suffered from insomnia and underwent yoga treatment would show statistically significant reductions in their systolic blood pressure and levels of anxiety compared to the control group. A pre-test was administered to both Groups (A and B) on the dependent variable of interest before the training programme commenced. Group A received a classical Yoga therapy treatment, whereas Group B (the control group) participated in active rest. After eight weeks of testing, both Group A and Group B were reassessed using the same dependent variables. The analysis of covariance allowed us to determine whether or not there were statistically significant differences between the experimental and control groups (ANCOVA). The results indicated a drop in Systolic Blood Pressure and an increase in Subjective Well-Being after people with insomnia participated in Classical Yoga Therapy, at the 5% confidence level. Yoga therapy seems to help individuals who have trouble sleeping.

Keywords: Systolic blood pressure, Anxiety, Yoga therapy, Adults, Insomnia

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Introduction

Those who are struggling with trauma and sleeplessness might greatly benefit from a classical Yoga treatment. There is a wide range of yoga practises to choose from. Classical yoga treatment completely unwinds and uplifts patients. There might be benefits to using sleeping pills, but there could also be hazards.

They treat the "symptom" rather than the "cause" of the body's condition. Yoga, on the other hand, has solely positive impacts and none negative. Yoga may also help one adopt a healthier way of living. Persistent yoga practise may help alleviate sleeplessness by addressing its root causes. Whether you have trouble falling asleep, staying

asleep, or waking up at an ungodly hour and then returning to sleep, you may be suffering from insomnia, a common sleep problem.

The effects of insomnia include health, productivity, and quality of life all depend on your emotional and mental state. Lack of sleep and stress may feed into one other, creating a potentially lethal cycle. The consequences of insomnia go beyond a restless night's sleep and a drowsy day. Sleep deprivation has been linked to a host of negative health outcomes, including but not limited to increased anxiety, depression, diabetes, high blood pressure, congestive heart failure, and premature skin ageing. It hinders the cellular renewal that normally occurs during sleep, which may leave you feeling sluggish and foggy-headed throughout the day. To counteract the effects of the sympathetic nervous system and its "fight or flight" reaction, yoga teaches its practitioners to calm their breathing and concentrate on the present moment. The latter is soothing and restorative since it slows the body's critical functions like breathing and heart rate, reduces blood pressure and cortisol levels, and boosts circulation to the digestive tract and other organs.

One of the primary aims of yoga is to calm the mind, which in turn leads to a more positive attitude on life and greater feelings of relaxation, self-assurance, productivity, attention, and less irritation. The practise of yoga provides balanced energy which is crucial to the operation of the immune system. The hypothalamic region known as the posterior or sympathetic area is suppressed as a result of yoga practise. Restoring the autonomic regulating reflex systems that are disrupted by stress, this inhibition improves the body's sympathetic responses to stressful stimuli. To achieve a state of joy and pleasure, classical Yoga Therapy practises work to activate the rewarding pleasure centres in the middle forebrain and elsewhere in the brain. The panchamaya kosha model, in addition to other yogic tools such as the doshas, chakras, yamas and niyamas (ethical principles), understanding

the critical importance of various pranayama (breath work) techniques, and a general understanding of the nervous system, are used in classical Yoga therapy to address the whole person.

There are two main types of insomnia—(i) Primary insomnia: This means your sleep problems aren't linked to any other health condition or problem, and (ii) Secondary insomnia: This means you have trouble sleeping because of a health condition. Other types of insomnia are- (i) Sleep-onset insomnia, (ii) Sleep-maintenance insomnia, (iii) Mixed insomnia, and (iv) Paradoxical insomnia.

The causes of insomnia are:

- Stress
- Travel or work schedule
- Poor sleep habits
- Eating too much late in the evening
- Chronic insomnia
- Mental health disorders
- Medications
- Medical conditions
- Sleep-related disorders
- Caffeine, nicotine and alcohol

With advanced age insomnia results into:

- Changes in sleep patterns.
- Changes in activity.
- Changes in health.
- More medications.

Symptoms of insomnia are:

- Difficulty falling asleep at night
- Waking up during the night or early
- Not feeling well-rested after a night's sleep
- Daytime tiredness or sleepiness
- Irritability, depression or anxiety

- Difficulty paying attention, focusing on tasks or remembering
- Increased errors or accidents
- Ongoing worries about sleep

Insomnia causes complications such as: Lower performance, Slowed reaction time, Mental health disorders, and Increased risk and severity of long-term diseases or conditions.

Insomnia can be diagnosed by Physical exam, Sleep habits review and Sleep study.

Treatment for insomnia includes—(i) Healthy eating, (ii) Classical Yoga Therapy Practices, (iii) Physical activity, (iv) Positive Thoughts, and (v) Other medications.

The objective of the study was to find out whether there would be any significant difference on Physiological Variable Systolic Blood Pressure and Psychological Variable Anxiety due to Classical Yoga Therapy among Adults suffering with Insomnia. It was hypothesized that there would be significant differences between Classical Yoga Therapy group and the control group on Systolic Blood Pressure and Anxiety among Adults suffering with Insomnia.

The delimitations of the study are—(i) The study was confined to Adults suffering with insomnia only, (ii) The age of the subjects was from 35 to 60 years only, (iii) The subjects were selected from Chennai city only, (iv) The independent variables were Classical Yoga Therapy only, and (v) The study was delimited to the following dependent physiological variable as systolic blood pressure and Psychological Variable Anxiety only. The limitations of the study are—(i) The other treatments taken by the subjects were not taken into consideration, (ii) The subject's way of lifestyle was not considered, (iii) During the training period, subject's occupation and their daily activities were not considered, (iv) External factors like diet, habits, lifestyles, body structure, socio-economic status and motivation were not taken into

consideration, and (v) Medications taken by the subjects were not considered.

Materials and Methods

For the random group experimental study, 30 adults suffering with insomnia were selected randomly by using random sampling group design from Chennai aged from 35 to 60 years and they were divided into two groups A and B with 15 subjects each. It was hypothesized that there would be significant differences due to Yoga Therapy on Systolic Blood Pressure and Anxiety among Adults suffering with insomnia than the control group. Pre- test was conducted for the two Groups (A and B) on the selected dependent variables before the start of the training program. Group A was given Classical Yoga Therapy practices whereas Group B (Control Group) didn't receive any specific treatment but were in active rest. After the experimental period of eight weeks, the two Groups (A and B) were retested on the same selected dependent variables. Analysis of co- variance (ANCOVA) was used to find out the significant differences between experimental group and the control group.

Results

The data pertaining to the variable collected from the two groups before and after the training period were statistically analyzed by using Analysis of Co-variance (ANCOVA) to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.

The obtained F value on pre- test scores 0.06 was lesser than the required F value of 4.2 to be significant at 0.05 level. This proved that there was no significant difference between the groups in pre-test and post-test and the randomization at the pre-test was equal. The post test scores analysis proved that there was significant difference between the groups, as obtained F value 4.57 was greater than the required F value of 4.2. This proved that the differences between the post-test means of the subjects were significant. Taking into consideration the pre and post test scores among the groups, adjusted mean

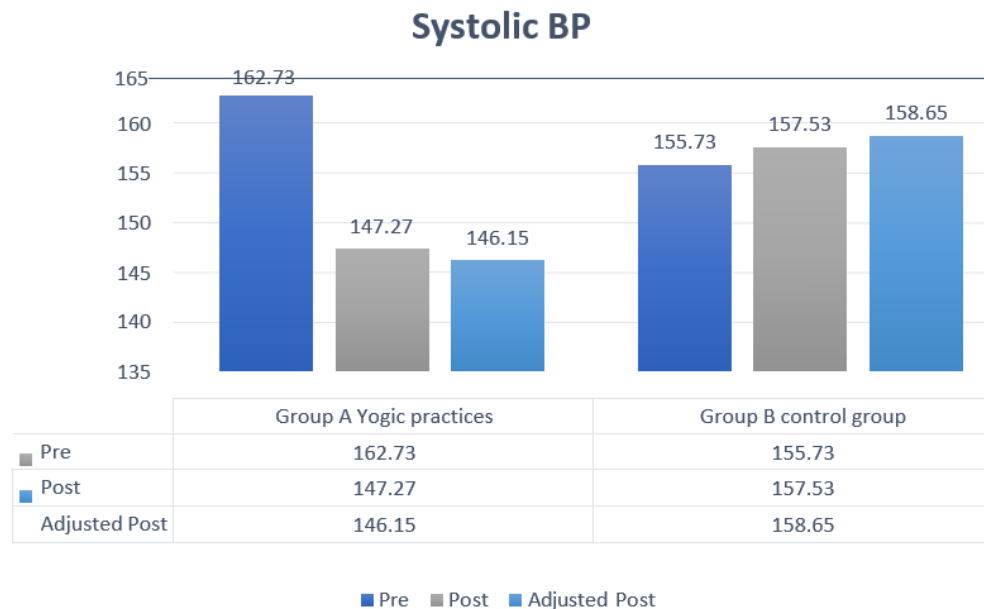


Fig. 1: Mean differences among the groups in blood pressure (systolic).

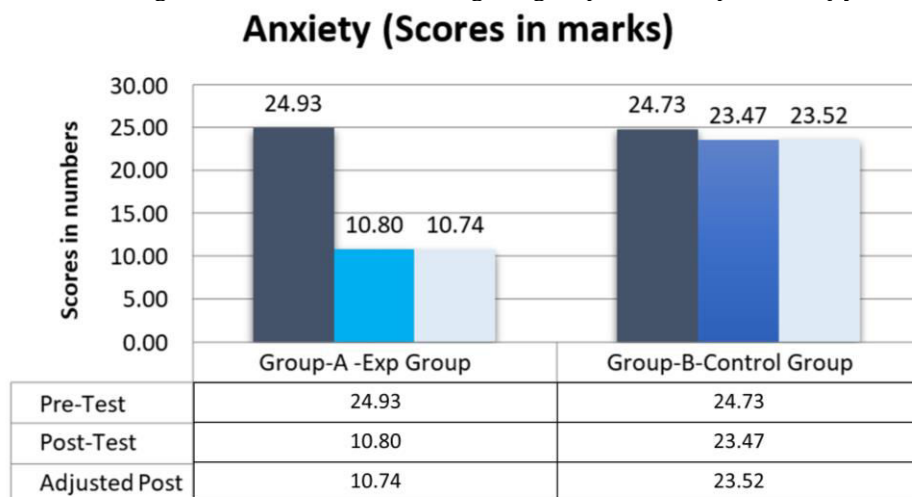


Fig. 2: Mean differences among the groups in Anxiety (scores in marks).

scores were calculated and subjected to statistical treatment. The obtained F value 7.26 was greater than the required F value of 4.21. This proved that there was a significant difference among the means due to eight weeks of Yoga Therapy on Blood Pressure (Systolic). This is in agreement with the study of Khalsa (2015). The adjusted mean on Blood Pressure (Systolic) are shown in Figure 1.

The results of the study showed that Group A has significant differences on Blood Pressure

(systolic), due to Classical Yoga Therapy. Hence, the hypothesis was accepted at 0.05 level of confidence. The above findings are in agreement with the observations of Khalsa (2015).

The obtained F value on pre- test scores 0.60 was lesser than the required F value of 4.2 to be significant at 0.05 level (Table 1). This proved that there was no significant difference between the groups in pre-test and post-test and the randomization at the pre-test was equal. The post test scores analysis proved that there was

Table 1: Analysis of covariance of the means of experimental group and the control group on anxiety (marks in scores)

Test	Ex. Group A	Control Group B	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F-Ratio
Pre	24.93	24.73	Between	2.13	1	2.13	0.60
			With in	99.33	28	3.55	
Post	10.80	23.47	Between	1203.33	1	1203.33	267.12*
			With in	126.13	28	4.50	
Adjusted Post	10.74	23.52	Between	1198.63	1	1198.63	265.51*
			With in	121.89	27	4.51	

* Significant at 0.05 level of confidence. (Table F ratio at 0.05 level, of confidence for Df 1 and 28= 4.2, 1 and 27= 4.21)

significant difference between the groups, as obtained F value 267.12 was greater than the required F value of 4.2. This proved that the differences between the post-test means of the subjects were significant. Taking into consideration the pre- and post-test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value 265.51 was greater than the required F value of 4.21. This proved that there was a significant difference among the means due to eight weeks of Classical Yoga Therapy on Anxiety. This is in line with the study conducted by Sobana (2013). The adjusted mean on Blood Pressure (Systolic) are shown in Figure 2.

The results of the study showed that Group A has significant differences on anxiety due to Classical Yoga Therapy. Hence, the hypothesis was accepted at 0.05 level of confidence. The above findings are in agreement with the observations made by Sobana (2013).

Discussion

Khalsa (2004) evaluated the effectiveness of a daily, 8-week treatment for insomnia using yoga, relaxation exercises or sleep hygiene. We analyzed the data from Insomnia which is a sleep disorder characterized by a chronic difficulty in

initiating and maintaining sleep which has a relatively high prevalence and a significant socioeconomic cost. There is good evidence that cognitive and/or physiological arousal, associated with sustained sympathetic activation, is one of the underlying causes of insomnia. Relaxation treatments such as progressive relaxation and meditation which address the cognitive and somatic arousal associated with insomnia have been found to be effective. Yoga is a comprehensive discipline which includes physical exercises, postures, breathing techniques, and meditation, for the purpose of improving health and wellbeing. Research studies have documented the effectiveness of yoga in reducing sympathetic activation and cognitive and somatic arousal and in the treatment of specific medical disorders. Although it has been used and recommended for the treatment of insomnia, its effectiveness has not been evaluated in a randomized, controlled study. The aim of Khalsa's study was to evaluate the effectiveness of yoga, relaxation exercises or sleep hygiene in the treatment of chronic psychophysiological insomnia. A subjective measure of sleep onset latency was derived from daily sleep diaries, and an objective measure was drawn from polysomnographic recordings. Sleep onset

latency was evaluated before and after a two-month treatment period in a total of 48 young men and women who have been carefully screened for psychiatric and medical disorders. Subjects were assigned to a yoga, relaxation exercise, or sleep hygiene treatment group. It was anticipated that yoga practice will prove to be an effective treatment for insomnia which will yield significant improvements in sleep onset latency. This present study also anticipate that these improvements will be maintained at long-term follow up evaluation.

Sobana *et al.* (2013) conducted the study to find out the effect of classical yoga therapy on selected psychological variables among men with insomnia. An estimated 30-50% of the general population is affected by insomnia and 10% have chronic insomnia. Classical Yoga therapy is beneficial in such disorders and it has fewer side effects. The aim of their study was to find out the effect of classical yoga therapy on selected psychological variables among men with insomnia. Forty males with insomnia were divided randomly into 2 groups (the experimental and the control groups). The experimental group received eight weeks of classical yoga therapy, while the control group

did not receive any therapy. The pre- and post-treatment stress and the self -confidence scores were taken. There was a significant improvement in the stress scores and the self-confidence scores in the experimental group. There were neither any side effects nor any drop outs. The present study also conclude that yoga is an effective treatment option for the patients with insomnia. There are no major side effects.

Conclusion

It is concluded from the present study that the Blood Pressure (Systolic) and Anxiety were significantly decreased due to Classical Yoga Therapy in Group A than the Control Group among adults suffering with insomnia. Hence, Classical Yoga Therapy are beneficial for Adults suffering with Insomnia.

References

- Khalsa SBS. (2004) Treatment of chronic insomnia with yoga: a preliminary study with sleep-wake diaries. *Appl Psychophysiol Biofeedback*. 29(4): 269-278.
- Sobana R, Parthasarathy S, Duraisamy, Jaiganesh K and Vadivel S. (2013) The effect of yoga therapy on selected psychological variables among male patients with insomnia. *J Clin Diagn Res*. 7(1): 55-57.