

EFFECT OF YOGIC PRACTICES ON SELECTED RISK FACTORS AMONG MIDDLE AGED HYPERTENSIVE WOMEN

Maharajan. D, Yoga Therapist, Krish Yoga Vidhyaalaya, Dharmapuri

ABSTRACT

The purpose of the random group experimental study was to find out the effect of yogic practices on selected risk factors among middle aged hypertensive women. It was hypothesized that there would be significant differences due to yogic practices on selected physiological variable such as Systolic and Diastolic Blood pressure among middle aged hypertensive women than the control group. For the purpose of the study, 30 middle aged hypertensive women were selected randomly from Chennai, between the age group of 35 to 45 years and they were divided into two groups A and B having 15 subjects in each. Pretest 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 yogic practices; Group B (Control Group) didn't receive any specific treatment, but in active rest. After the experimental period of eight weeks, the two Groups (A and B) were retested again on the same selected dependent variables as post test. Analysis of co-variance (ANCOVA) was used to find out the significant differences between experimental group and the control group. The results of the study on the selected physiological variables proved that the Experimental group showed significant differences than the control group due to yogic practices. The hypothesis was accepted at 0.05 level of confidence Hence, it was concluded that yogic practices are beneficial to the middle aged hypertensive women.

KEY WORDS: Yogic practices, Systolic and Diastolic Blood pressure,

INTRODUCTION

Hypertension, also known as high blood pressure (HBP), is a long-term medical condition in which the force of the blood against the artery walls gets to be so high. High blood pressure usually does not cause symptoms. Long-term high blood pressure, however, is a major risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss, and chronic kidney disease. Hypertension becomes more common with age, affecting middle-aged women especially. Most people with hypertension do not show signs or symptoms. Occasionally, people with early-stage hypertension get dull headaches or dizzy spells. In many cases, there is no discernible cause of hypertension, but rather, it develops over the years. Hypertensive women

were facing many challenges and obstacles in life. Frequently reported symptoms fall into numerous categories, including physiological turbulences such as severe headache, fatigue or confusion, vision problems, chest pain, difficulty breathing, irregular heartbeat, blood in the urine, pounding in chest, neck or ears and many other impacts that may weaken their personal, social connections and reduce the overall quality of life.

In 2007 , CVD caused about one death per minute among women in the united states, more women's lives than were claimed by cancer, chronic lower respiratory disease, Alzheimer's disease, and accidents combined [Roger et al.2011]. Acknowledging those facts might reduce hypertension related morbidity and mortality in women. Yoga can be a very beneficial therapy for controlling and lowering high blood pressure naturally. The gentle, soothing practice of yoga settles both mind and body and reduces stress, which is a leading cause of hypertension. Yoga can help to switch on the parasympathetic nervous system, which is responsible for rest and repair, and turn off the sympathetic nervous system, used for the fight-or-flight stress response. Increased parasympathetic activity has a beneficial effect on many systems in the body, and allows the nervous system to become more balanced. This is one way in which practicing yoga for high BP can help free up the body's inherent healing response to reduce blood pressure naturally.

Yoga is a science and art of pure lifestyle. Yoga helps the women to evoke the hidden potentialities to solve her problems. Yoga not only upkeep the body and mind, but it is also a science a health. It acts as a both preventive and curative aspect through asana, pranayama, meditation, mudra and kriyas etc. Yoga plays a significant role in enhancing one's mental health.

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of yogic practices on selected risk factors among middle aged hypertensive women.

HYPOTHESIS

It was hypothesized that there would be significant differences on selected risk factors among middle aged hypertensive women due to yogic practices than the control group.

DELIMITATIONS

- The study was delimited to the middle aged women from Chennai city only
- Age of subjects was ranged from 35 to 45 years only.
- The subjects were middle aged hypertensive women only.

- The dependent variables were restricted to physiological variables only.
- Independent variables were yogic practices only.

REVIEW OF RELATED LITERATURE

Nejati S. et.al., (2015) Studied the effect of Group Mindfulness-Based Stress-Reduction Program and Conscious Yoga on Lifestyle, Coping Strategies, and Systolic and Diastolic Blood Pressures in Patients with Hypertension. This study was a randomized clinical trial. The study sample, consisting of 30 patients referring to the Hypertension Clinic of Imam Hossein Hospital in 2013, was assigned either to the intervention (recipient of the MBSRP and conscious yoga) or to the control group (recipient of yoga training). The intervention group had 8 training sessions over 8 weeks. Lifestyle and coping strategies as well as blood pressure were measured in the intervention group before intervention and then immediately thereafter and at 2 months' follow-up and were compared to those in the control group at the same time points. The mean age of the patients in the intervention (40% women) and control (53% women) groups was 43.66 ± 5.14 and 43.13 ± 5.04 years, respectively. The results showed that the mean scores of lifestyle (p value < 0.05), emotion-focused coping strategies (p value < 0.001), problem-focused coping strategies (p value < 0.001), diastolic blood pressure (p value < 0.001), and systolic blood pressure (p value < 0.001) were significantly different between the intervention and control groups after the intervention.

Marshall Haginset. al., (2013) studied the effectiveness of Yoga for Hypertension: Systematic Review and Meta-Analysis. Most studies were conducted in India ($n=8$) and the USA ($n=6$), with the remaining conducted in The Netherlands ($n=1$), Brazil ($n=1$), and Thailand ($n=1$). The mean length of time used for yoga practice was $58.9 (\pm 56.1)$ hours; 12 studies had fewer hours and 5 had more hours than the average. The subgroup analysis for type of yoga intervention suggests that incorporating three elements of practice (posture, meditation, and breathing) is associated with significant reductions in blood pressure whereas yoga interventions using two or fewer elements of yoga practice or that combine yoga practice with additional interventions are not. The subgroup analysis regarding type of comparison group suggests that RCTs comparing yoga to usual care showed that yoga had a significant effect on blood pressure compared to no treatment but not when compared to exercise or other types of treatment. It was suggested that yoga may offer an effective intervention for reducing blood pressure among people with prehypertension or hypertension.

METHODOLOGY

To achieve the purpose of the study, 30 hypertensive were selected randomly for the study from Chennai, between the age group of 35 to 45 years and they are equally divided into two groups I and II with 15 subjects in each group. Preliminary test was taken for the two groups (I and II) on the selected dependent variable before the start of the training program. Group I was given yogic practices for 60 minutes 6 days for a total period of eight weeks. Group II (control group) was permitted to undergo their routine and normal life style during the course of experiment without any specific training. After 8 weeks, the two groups were rested again on the same selected dependent variable, the selected physiological variables such as systolic blood pressure and diastolic blood pressure. Analysis of co-variance (ANCOVA) was used to find out the significant differences between experimental groups and the control group. The test of significance was fixed at 0.05 level of confidence.

YOGIC PRACTICES

1. Loosening the joints.

2. Surya Namaskar (Modified)

3. Asanas

- Vajrasana
- Paschimottanasana
- Sukhasana
- Ardha matsyendrasana
- Bhddhakonasana
- Janusirsasana
- Sethubandhasana
- Ardha halasana
- Savasana

4. Pranayama

- Anulomvilom
- Sitali

5. Yoga Nidra

RESULTS AND DISCUSSIONS

- The data pertaining to the variable collected from the groups before and after the training period were statistically analyzed by using analysis of covariance (ANCOVA) to determine the significant difference and the hypothesis was tested at 0.05 level of confidence.
- The obtained F-ratio value for the Blood pressure (systolic/Diastolic) were greater than the table value, indicating that there was a significant difference among the post test and adjusted post test means of the yogic practice group than the control group on selected physiological variables.

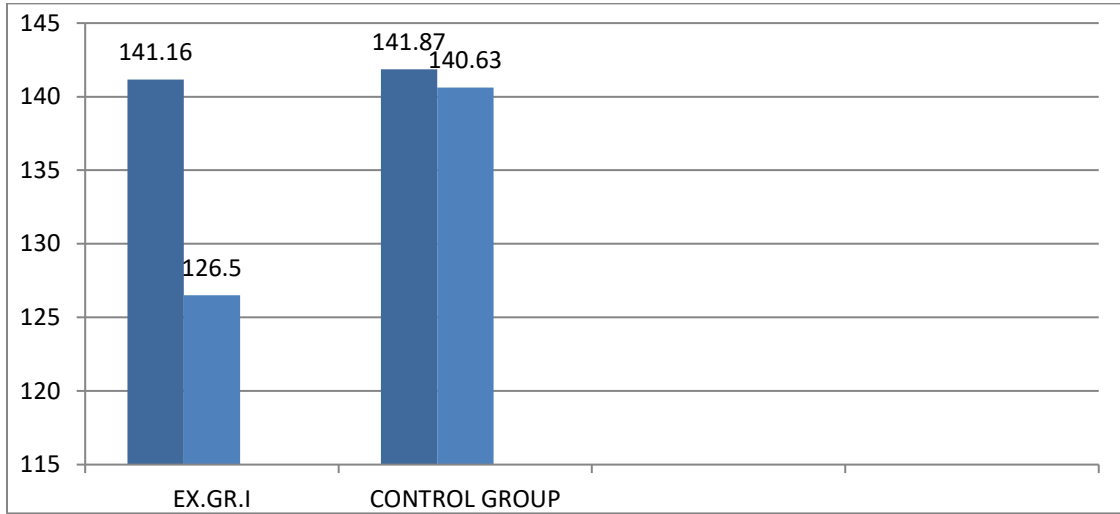
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF SYSTOLIC BLOOD PRESSURE OF EXPERIMENTAL AND CONTROL GROUP (Scores in mm/Hg)

Test	Experimental Group (Yogic Practices)	Control group	Source of variance	Df	Sum of square	Mean square	F Value
Pre-test mean	141.1667	141.87	Between	1	24.16	12.078	0.88
			Within	38	1193.00	13.71	
Post-test mean	126.5	140.63	Between	1	3275.02	1637.51	125.12*
			Within	38	1138.63	13.09	
Adjusted mean	126.58	140.63	Between	1	3250.66	1625.33	124.78*
			Within	37	1120.223	13.03	

* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 with df 1 and 38 and 1 and 37 are 4.10 and 4.11 respectively)

The obtained F value on pre test scores 0.88 was lesser than the required F value of 4.10 to be significant at 0.05 level. This proved that there was no significant difference between the groups a 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 125.12 was greater than the required F value of 4.11. 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.

BAR DIAGRAM SHOWING ADJUSTED POST-TEST VALUES OF CONTROL GROUP AND EXPERIMENTAL GROUP ON SYSTOLIC BLOOD PRESSURE



The results of the study on the selected physiological variables showed that group 1 has significant differences on blood pressure (systolic), due to yogic practices. Hence, the hypothesis was accepted at 0.05 level of confidence. The above finding can also be substantiated by the observations made by experts such as **Nejati S. et.al, (2015)**

COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF DIASTOLIC BLOOD PRESSURE OF EXPERIMENTAL AND CONTROL GROUP

(Scores in mm/ Hg)

Test	Experimental Group – I (yogic practices)	Control group	Source of variance	df	Sum of square	Mean square	F
Pre-test mean	90.53333	90.13	Between	1	2.76	1.378	0.34
			Within	38	355.73	4.09	
Post-test mean	85.13333	90.83	Between	1	653.62	326.81	48.00*
			Within	38	592.33	6.81	
Adjusted mean	85.15	90.82	Between	1	647.82	323.91	47.18*
			Within	37	590.423	6.87	

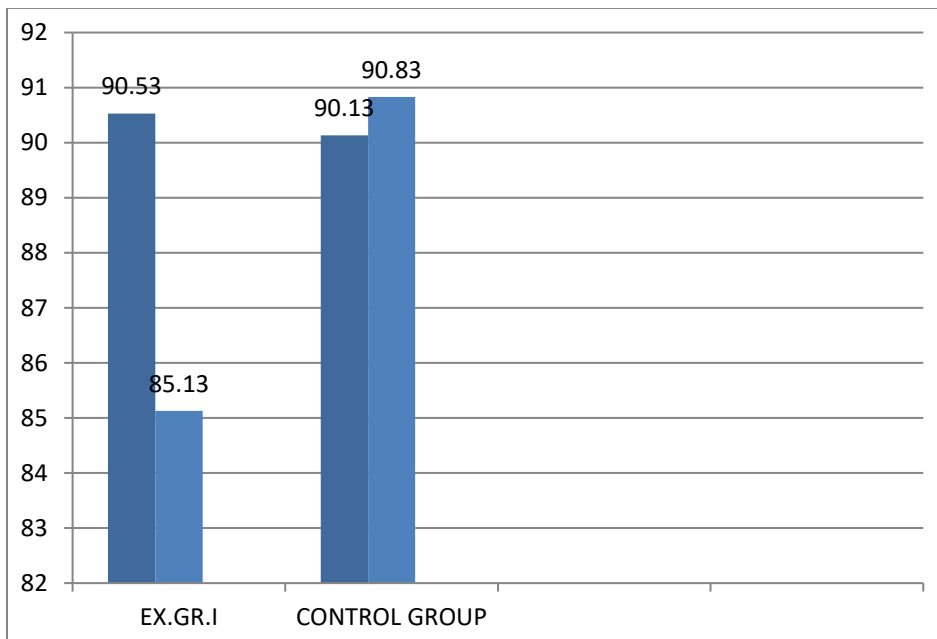
* Significant at 0.05 level of confidence. (The table value required for significance at 0.05 with df 1 and 38 and 1 and 37 are 4.10 and 4.11 respectively)

The obtained F value on pre test scores 0.34 was lesser than the required F value of 4.10 to be significant at 0.05 level. This proved that there was no significant difference between the groups a 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 48.00 was greater than the required F value of 4.11. 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 47.18 was greater than the required F value of 4.11. This proved that there was a significant difference among the means due to eight weeks of yogic practices on diastolic blood pressure in line with the study conducted by **Marshall Haginset. al., (2013)**.

BAR DIAGRAM SHOWING ADJUSTED POST-TEST VALUES OF CONTROL GROUP AND EXPERIMENTAL GROUP ON DIASTOLIC BLOOD PRESSURE



The results of the study showed that diastolic blood pressure decreased significantly as results of yogic practices for Group I than Control group II. Hence, the hypothesis was accepted at 0.05 level of confidence. The above finding can also be substantiated by the observations made by experts such as **Marshall Haginset. al., (2013)**.

CONCLUSIONS

It was concluded that Blood pressure (systolic/diastolic) were significantly decreased due to the influence of yogic practices (group I) than the control group (II) among hypertensive middle aged women. Yogic practices are beneficial to middle aged hypertensive women.

REFERENCES

1. **Nejati S, Zahiroddin A, Afrookhteh G, Rahmani S, and Hoveida S., (2015)**, “Effect of Group Mindfulness-Based Stress-Reduction Program and Conscious Yoga on Lifestyle, Coping Strategies, and Systolic and Diastolic Blood Pressures in Patients with Hypertension”, US National Library of Medicine, National Institutes of Health, 10(3):140-8.
2. **Marshall Haginset. et al., (2013)** studied the effectiveness of Yoga for Hypertension: Systematic Review and Meta-Analysis. PP.13.

WEBSITES

1. <http://www.vethathiri.edu.in/maharishi/wellness-longevity/introspections/>
2. http://www.who.int/gho/ncd/risk_factors/blood_pressure_prevalence_text/en/
3. <https://www.cdc.gov/bloodpressure/facts.htm>
4. <https://www.yogauonline.com/yogau>
5. <https://www.ncbi.nlm.nih.gov/>
6. <https://www.hindawi.com/journals/>