

**Yoga therapy for Hypertensive Middle Aged Women**  
"Effect of Yogic Practices on Selected Physiological Variables among  
Hypertensive Middle Aged Women"

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December 13 2018

According to the World Health Statistics 2012 report, India has low rates of hypertension compared to world figures. Here, 23.10% men and 22.60% women above 25 years suffer from hypertension. High blood pressure or hypertension kills nearly 1.5 million people every year in South-East Asia. India also fares better than the global average of 29.20 in men and 24.80 in women respectively.

**Abstract:** Even though hypertension is not directly related to any gender women have to face extra problems due to pregnancy, intake of contraceptive pills, hormone replacement therapy, menopause, stress, obesity etc. These can be causative factors for hypertension leading to it becoming one of the major causes of death in women.

Hypertension could result in a stroke, kidney failure and gestational hypertension or preeclampsia as well.

#### So what is hypertension?

It is consistent pressure on the walls of arteries (blood vessels) which can cause sudden heart attacks. One common misconception is that hypertension rarely affects women. However, among nearly half of all adult population hypertension has been found in middle-aged women. Furthermore, blood pressure or BP control is more difficult for older women. Women have unique forms of hypertension associated with pregnancy, menopause, and the use of OCP.

The American College of Obstetricians and Gynecologists lists the various types of hypertension during pregnancy as –

- 1 Preeclampsia and Eclampsia.
- 2 Chronic hypertension in pregnancy.
- 3 Gestational Hypertension.
- 4 Postmenopausal Hypertension.

#### Introduction

High blood pressure is popularly known as “the silent killer”. It is a condition of the cardiovascular system, because of its asymptomatic nature, that can lead to heart disease and stroke – making.

Major causes of hypertension are - sedentary lifestyle, addiction to social media, lack of physical activities, mental disorder, stress, depression and insomnia, wrong eating habits, irregular lifestyle, lack of disciplined life etc.



Fig 1: Credit Times of India report dated May 2018

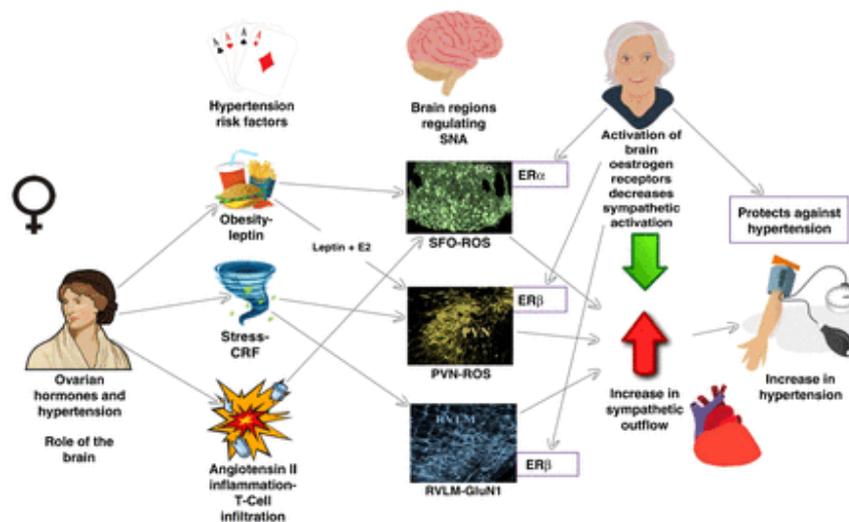


Figure 2- Picture reference <http://www.clinsci.org/content/130/1/9/F1>

### Material & Study reference

Swami Kunalayananda founder of Kaivalyadhama (1988) found that “The observations that rise in blood pressure during asana are much less in comparison to activities like running; weight lifting etc. indicates that asana should be viewed in differently as compared to exercises. The emphasis on relaxation tackling an emotional aspect of the individual has been indicated among other points for this consideration.”(Yoga Mimasa). In this literature, Swami Kunalayananda has scientifically clarified the difference and effects of Asana & Exercises. [Asanas have more](#)

positive effects on emotional aspects and therefore it calms down sympathetic nervous system and so does not increase the blood pressure. Exercises on the other hand stimulate sympathetic activities and raises blood pressure.

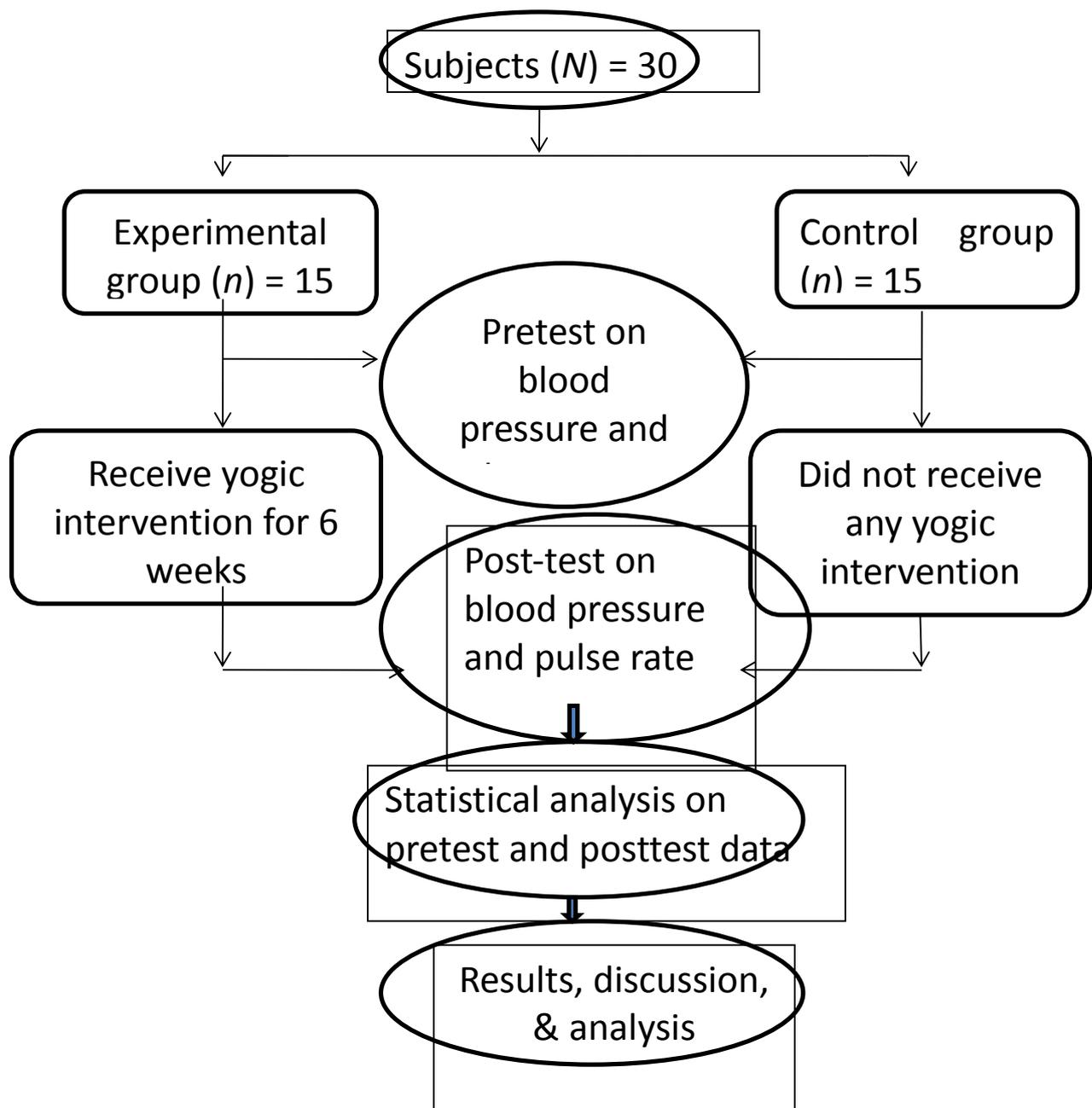
This is another similar type study taken from Shodhganga.

**Parshad et al (2011)** studied Sixty-four healthy medical students (57 females and 7 males), mean age  $21.3 \pm 2.6$  years, attending a Special Study Module 'Role of Dhyana Yoga in Stress Management', participated in this study. Systolic (SYS) and Diastolic (DIA) blood pressure, Heart Rate (HR), Stroke Volume (SV), Cardiac output (CO), Total Peripheral Resistance (TPR), Interbeat Interval (IBI), Left Ventricular Ejection Time (LVET), Arterial Compliance (Cwk) and Ascending Aorta Impedance (Zao) were measured before and after six weeks of yogic exercises. Various exercises included Asanas (Postures), pranayama (Breathing), and dhyana (Meditation).

Data was analyzed using Stat for Windows. Two-tailed paired t-test revealed that practice of yoga caused significant increases in HR ( $p < 0.05$ ), SV ( $p < 0.01$ ), CO ( $p < 0.001$ ) and Cwk ( $p < 0.01$ ) and decreases in TPR ( $p < 0.001$ ), IBI ( $p < 0.05$ ) and Zao ( $p < 0.001$ )

After practicing yoga for 6 weeks as compared to before yoga practice, no significant differences were, however, observed in SYS, DIA, Mean arterial blood pressure (MAP) and LVET.

## Method



This study has employed the experimental random group design. Data was collected from 30 hypertensive women of Mumbai selected at random and in the age group 35-60.

The subjects of the experimental group received yogic intervention for a period of six weeks. The control group received no intervention. The differences between the pretest and post-test scores of the experimental and the results of the control groups were determined by the “T” test.

The purpose of the random group experimental study was to investigate the effect of Yogic Practices on selected Physiological variables such as Systolic & Diastolic Blood pressure and Pulse rate among Hypertensive middle-aged women. It was hypothesized that there would be a significant difference due to Yogic Practices on selected Physiological variables such as Systolic & Diastolic Blood pressure and Pulse rate among Hypertensive middle-aged women than the control group.

Random group experimental design was used. The random sampling design was followed to select the subjects. To achieve the purpose of the study, 30 women between the age 35 and 75 years were selected randomly from Mumbai and they were divided into two groups such as Yogic Practices (Group A) and Control Group (Group B). Each group consists of 15 subjects. The pre-test was taken for the two Groups on the selected dependent variables before the start of the training program. Group A was undergoing Yogic Practices for 6 weeks, 6 days a week, One-hour maximum daily and Group B (Control Group) was permitted to undergo their normal lifestyle (active rest) during the course of the experiment.

After the experimental period of 12 weeks, post-tests were conducted for the two groups on selected dependent variables. The selected Physiological variables such as Systolic, Diastolic Blood Pressure and Pulse Rate were measured through BP Monitor Machine. Analysis of Covariance (ANCOVA) was used to find out the significant difference between experimental group and the Control Group. The test of significance was fixed at 0.05 level of confidence. It was concluded that Yogic Practices has positive impact on Physiological variables (Blood Pressure & Pulse Rate) among Hypertensive middle-aged women than the Control Group. Blood pressure & pulse rate maintained at Normal range in experimental group. Also there is reduction in symptoms like Anxiety & Breathlessness along with improvement in health. Hence, the hypothesis was accepted at 0.05 level of confidence.

With the earlier reference of Yoga mimasa & other studies practically we have seen in the observations [indicates that asana should be viewed in a different way than exercise](#). Yoga mainly acts on to bring back the balance of sympathetic nervous system. Emphasis of relaxation tackling emotional aspect of the individual has been indicated as some of points for this consideration. (*Yoga Mimasa*)

Cardiovascular response to asana of easy course recommended by Swami Kavalayananda in different conference on “Yoga Education & Research” Kaivalyadhama (Lonavla) Jan 1, 4, 1988 (In *Yoga Mimasa*, Vol 27 no 1 & 2 pp 7, 8, 1988)

A short yoga program for the patient to practice at home seems to have an anti-hypertensive effect. This implies that yogic practices may be useful as support to maintain normal blood pressure in addition to medical treatment.

### Yogic practices and Asanas at Kaivalyadhama Mumbai

Yogic practices and Asanas – Note that asanas should be done as per individual capacity & under the observation by yoga teacher.

1. Standing **Tadasana** 2 rounds. By standing on toes with concentrated gaze & stretching hands upward helps muscle & spine relaxed.
2. Sitting **Parvatasana** 2 rounds. Posture of body in mountain pose i.e. broad base & tapering end at the top helps physical & mental stability.
3. **Brahma Mudra**, Jivha Bandha 2/2 rounds each. This relaxed neck & facial muscles.
4. Supine - **Ardha Halasana** 2 rounds. Raise legs in 30, 45, 60 & 90 degree angle with relaxing back & breathing focus helps spine & increases strength in lower limbs circulation.
5. **Shavasana** 2-5min. Relaxing posture.
6. Prone - **Bhujangasana and Makarasana**. Lying down on abdomen with posture like snake & crocodile relax back muscles & gives internal organ massage.
7. **Kapalbhati Kriya** - 20-30 strokes per minutes. Important to improve the metabolism by forceful but rhythmic exhalation.
8. **Dharana** (Concentration) 2 minutes. Gazing at one object internal & external helps to relax the nervous system.
9. **Dhyan** (Meditation) 2-5 minutes.
10. **Omkar Chanting** 5- 10 rounds. Chanting creates vibration within the body & mind which helps in synchronizing circulation.
11. **Pranayama** - Lom - Vilom Bhramari 20 -40 round, 2 minutes. This is alternate nostril breathing yogic techniques improve balance.
12. **Bhramari pranayama** 20-40 round. Honeybee sound production while exhalation helps to remove toxins out from the circulation.

### Objective of the study

The objective of the study was to find out the effect of yogic practices on selected physiological variables such as Systolic and Diastolic blood pressure and pulse rate among hypertensive middle-aged women.

### Result

Yogic practices like relaxing Asanas, Pranayama, and Meditation reduce blood pressure and maintains pulse rate at the normal range; removes excess toxins, water, and salt from the body. It stimulates the para-sympathetic nervous system and hence controls hypertension.

### Conclusion

Yogic practices significantly altered the systolic and diastolic blood pressure and pulse rate among hypertensive middle-aged women.

The yogic practitioner group's positive improvement in systolic blood pressure compared to control group, however, there was also an average positive result in diastolic blood pressure and pulse rate.

EOM

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