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## The effect of yoga blood pressure and pluse rate variables of college women

**Radhika G Milli and Dr. Srinivasa**

**Abstract**

**Background:** Yoga is an important role and has made unlimited Contribution in the modern age as it caters to the biological, Sociological, Spiritual and Physiological necessities of the human. The purpose of the study was to analyze the effect of Yoga on Physiological variables of the college going female students within the age group of 18-22 years.

**Materials & Methods:** Total 30 subjects were taken for the study from B.A.J.S.S. Arts and Commerce College for women athletes Ranebennur, Haveri District of Karnataka state, India. The Physiological parameters were Pulse rate, S.B.P and D.B.P which were measured by the reputed physian. The Pre-test and Post-test were taken of all the parameters (Physiological) before and after of six (6) months of yoga training. The physiological parameters were assessed by recording the blood pressure (S.B.P and D.B.P) and pulse rate before and after six (6) months of regular yogic exercise or training. The subjects were randomly selected for the study as subjects. To measure the blood pressure mercury sphygmomanometer was used and pulse Rate was recorded after a rest for 30 minutes in right radial artery by Palpatory method. For statistical analysis and Interpretation of data 't' test was conducted at 0.05 level of significance.

**Results & Discussion:** The findings of the present study reveals that there were significant difference found in reduction in the pulse rate, Systolic Blood Pressure and diastolic Blood Pressure after Six (6) months of yoga practice. The mean pulse rate (beats/min) before yoga was 78.60 which reduced significantly to 72.50 after six months of yoga practice. The mean systolic blood pressure before yoga practice was (mm of Hg) 127.50 and after six months it was lowered to a highly significant level of 120.50. The mean diastolic blood pressure before yoga was 88.60 and it was reduced significantly to 80.50.

**Conclusion:** On the basis of the obtained result, it has been observed that yoga practice can be used as an intervention in ageing persons to reduce the morbidity and mortality from cardiovascular diseases. It reduces the high blood pressure, pulse rate and plays an important role in healthy impact on the life style of a woman.

**Keywords:** Yoga, blood pressure, pulse rate

**Introduction**

Yoga plays an important role and has made unlimited Contribution in the modern age as it caters to the biological, Sociological, Spiritual and Physiological necessities of the man. The word 'yoga' is derived from the roots of Sanskrit 'Yuj' which means to join, to attach, to bind, yoke, and a concentrate or one attention. It also means Union. Yoga is true union of our will with the will have had. The literal meaning of the word 'Yoga' is 'yoke'. It means for uniting the individual spirit with the Universal spirit, or God. Yoga means the Experience of oneness or unity with inner being. It is a science by which the individual approaches truth. Yoga is not religion it is a method by which one obtain Control of one's latent powers. It is the means to reach complete Self-Realization. Yoga is a reduction of one's mental process, along with the physical.

The practice of Yoga in the Indian subcontinent has been documented as early as B.C. Regular practice of variety of Yoga techniques have been shown to lower heart rate and blood pressure in various population Lakshmi kanthan *et al.* 1979 and Mahajan *et al.* 1999 <sup>[1, 2]</sup>.

Hypertension is a medical condition in which the pressure of blood pushing against the blood vessel walls is persistently high. The blood pressure is measured with an instrument called a sphygmomanometer in millimeters of mercury.

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The highest pressure reached during each heart beat is called systolic blood pressure and lowest between two beats is known as diastolic blood pressure. The blood pressure is considered as normal when it is 120=80 (mm of Hg). In the early 1970's, the rule of halves suggested that only half of the people who were hypersensitive were diagnosed and of those cases that were diagnosed, only half received appropriate treatment and only achieved adequate control of their blood pressure. The principle cause being increased stress and strain that we encounter in our day-to-day living (Bernardi *et al.* 2002 and Iyengar, 1968). One simple, inexpensive method of overcoming the stress and the consequent cardiovascular complications is the practice of Yoga. The practice of yoga in the Indian subcontinent has been documented as early as 3000 B.C. Although much research work has been done on Yoga and the cardiovascular status, most of them are in diseased conditions (khanam *et al.* 1996).

## Materials & Methods

### Subjects

Total 30 subjects were taken for the study from B.A.J.S.S. Arts and Commerce College for women athletes Ranebennur, Haveri District of Karnataka state, India. The Physiological parameters were Pulse Rate, S.B.P and D.B.P which were measured by reputed physician. The pre-test and post-test were taken of all the parameters (Physiological) before and after of six (6) months of yoga training. The physiological parameters were assessed by recording the blood pressure (S.B.P and D.B.P) and pulse rate before and after six (6) months of regular yogic exercise or training.

The subjects were randomly selected for the study as subjects. To measure the blood pressure mercury sphygmomanometer was used and pulse was recorded after a rest for 30 minutes in right radial artery by Placatory method. For statistical analysis and Interpretation of data 't' test was conducted at 0.05 level of significance. The random sampling method and random group design were used for the study.

### Variables and Instruments

On the basis of available literature and the researcher's own understanding the following Physiological variables were selected.

#### They are

- Pulse Rate
- S.B.P
- D.B.P.

The selected Physiological variables and their measuring instruments and units of measurement are given in Table-1.

Sl. No	Variable	Instrument	Unit
1.	Pulse Rate	Palpatory Method	Beats/min
2.	S.B.P	Sphygmomanometer	Mm of Hg
3.	D.B.P	phygmomanometer	Mm of Hg

### Procedure

At first, the investigator were measured the following parameters before starting of yoga training programme. The Physiological parameters were Pulse rate and Blood pressure

(S.B.P and D.B.P) respectively. She demonstrated them the various tests with respect to the selected Physiological variables. Before recording the above parameters, the subject was asked to relax physically and mentally for 30 minutes. All the subjects were investigated by the same expert under the similar conditions of rest and fasting. For statistical analysis and Interpretation of data 't'- test was conducted.

### Statistical Analysis

To analyze the effect of Yoga on Physiological variables of the college going students within the age group of 18-22 years. The Independent 't' test was used at 0.05 level of significance. To get the final result Mean, Standard Deviation, Difference and t'-test were calculated.

### Results

Total 30 subjects were taken for the study from B.A.J.S.S. Arts and Commerce College for women athletes Ranebennur, Haveri District of Karnataka state, India. They were tested before and after the yoga training. The Physiological Variables were assessed by recording the blood pressure (S.B.P and D.B.P) and pulse rate before and after six (6) months of regular yogic exercise or training. The results obtained are expressed as Mean, SD and t-ratio of the 18-22 years Female students. The present study reveals that there was significant difference found in reduction in the pulse rate, Systolic Blood Pressure and diastolic Blood Pressure. After the Six (6) months of yoga practice. The mean pulse rate (beats/min) before yoga was 78.60 which reduced significantly to 72.50 after six months of yoga practice. The mean systolic blood pressure before yoga practice was (mm of Hg) 127.50 and after six months it was lowered to a highly significant level of 120.50. The mean diastolic blood pressure before yoga was 88.60 and it was reduced significantly to 80.40 after six (6) months of yoga practice. The subjects were randomly selected for the study as subjects. To measure the blood pressure mercury sphygmomanometer was used and the pulse was recorded after a rest for 30 minutes in right radial artery by Placatory method.

#### Pulse Rate

The mean pulse rate (beats/minute) before yoga practice was (78.60±2.50). It was reduced highly significant to (72.50±1.80) ( $P > 0.001$ ) after six months of yoga practice. The Independent t' test was used at 0.05 Level of significance.

#### Systolic Blood Pressure

The mean Systolic Blood Pressure (Mm of Hg) before yoga practice was (127.50±2.05). It was reduced highly significant level to (120.50±2.20) ( $P > 0.001$ ) after six (6) months of yoga practice. The Independent Paired 't'- test was used at 0.05 level of significance.

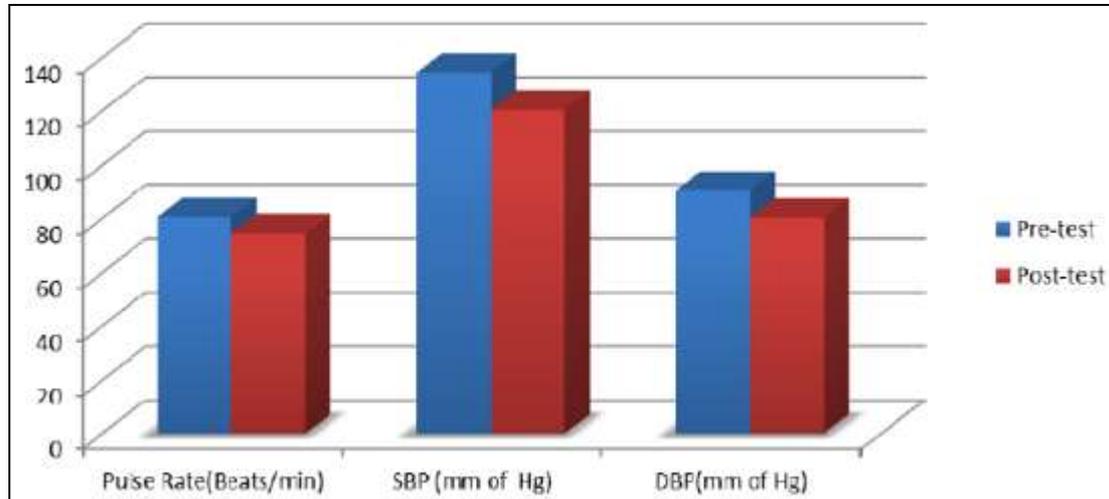
#### Diastolic Blood Pressure

The mean Diastolic Blood Pressure (Mm of Hg) before yoga practice was (88.60±1.50). It was reduced highly significant level to (80.40±2.20) ( $P > 0.001$ ) after six months of practice. The Independent paired 't'- test was used at 0.05 level of significance.

**Table 1:** Significant difference of Pre-test and Post-test within the age group of 18-22 years Female on Physiological Variables.

Sl. No	Physiological Characteristics	Test	Mean	SD	t-ratio	Significant
1	Pulse Rate (Beats/min)	Pre Test	78.60	2.50	2.10	0.05*
		Post Test	72.50	1.80		
2	SBP (mm of Hg)	Pre Test	127.50	2.05	2.36	
		Post Test	120.50	2.20		
3	DBP(mm of Hg)	Pre Test	88.60	1.50	2.45	
		Post Test	80.40	2.20		

\*Significant at 0.05 level



**Fig 1:** Graphical representation also indicates the similar trend of this study

Table-1: Results of the study have been shown in Table-1. It revealed that there were significant difference in Pulse Rate, Systolic Blood Pressure and Diastolic Blood Pressure of the above 18 years female because the calculated value of 't' (2.10), (2.36) & (2.45) were more than the tabulated value (2.05) at 0.05 level of significance. So the result is significant. Here Mean and SD of Pulse Rate, Systolic Blood Pressure and Diastolic Blood Pressure before and after the six (6) months of training were (78.60±2.50), (72.50 ±1.80), and (127.50±2.05), (120.50±2.20) and (88.60±1.50),(80.40±2.20) respectively. Graphical representation (Fig 1) also indicates the similar trend of this study.

### Discussion

From the result of the study it has been observed that there was significant difference found in the Physiological variables. On analyze the effect of Yoga on Physiological variables of the female i.e above the age group of 18 years female, the results revealed that there were highly significant reduction in the pulse rate, Systolic Blood Pressure and Diastolic Blood Pressure (Mm of Hg) after the six (6) months of yoga practice. Yoga significantly improves the level of stress and anxiety but that improvements were not any greater those of the relaxation group (Smith *et al.* 2007) Yoga acts as an effective treatment for hypertension through the reduction of stress. A significant improvement in the level of blood pressure after three (3) months residential training consisting of vegetarian diet and Kriya yoga. In a randomized trial, yoga was found to be equally effective as antihypertensive therapy over an 11 weeks period (Swami Satyananda Saraswati 2001). The mechanism of reduction of blood pressure has been considered to be restoration of bar receptor sensitively by yoga (Tiwari 1983 and Tulpule (1980). Present study also confirm the view point of (Upadhyay *et al.* (2008). The blood pressure (S.B.P & D.B.P) was decreased continually after the six (6) months of yoga practice. The mean pulse rate

(beats/minute) before yoga practice was (78.60±2.50). It was reduced highly significant to (72.50±1.80) ( $P > 0.001$ ) after six (6) months of yoga practice. The Systolic Blood Pressure (mm of Hg) before yoga practice was (127.50±2.05). It was reduced highly significant level to (120.50±2.20) ( $P > 0.001$ ) after the six (6) months of yoga practice. The mean Diastolic Blood Pressure (Mm of Hg) before yoga practice was (88.60±1.50). It was reduced highly significant level to (80.40±2.20) ( $P > 0.001$ ) after six months of yoga practice. The Independent paired 't'- test was used at 0.05 level of significance.

### Conclusion

Many research studies have been done on the usefulness of yoga in the treatment of various lifestyle related diseases especially cardiovascular disease. It is proved that yoga has significant and healthy impact on the life style of the human. The findings of the study revealed statistically significant in the respect of all selected physiological variables. On the basis of the results obtained from the present empirical investigation and within the limitation, the following conclusions are drawn after giving the six (6) months of yoga practice.

1) The Physiological parameters i.e the Pulse Rate, Systolic Blood Pressure and Diastolic Blood Pressure were significantly reduced after giving the six (6) months of yoga practice.

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