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**Dr. Anita Lokhande**

Director, Sports and Physical  
Education, Gondwana  
University, Gadchiroli,  
Maharashtra, India

## Effect of Savasana and meditation on autonomous nervous system of medical students

**Dr. Anita Lokhande**

### Abstract

Today yoga and Meditation has become prime importance in the world. Everyone in this world wants to keep her healthy and strong. Yoga and Meditation are totally and completely interrelated with each other. During Meditation and Yoga it has seen that there is great improvement in Autonomous Nervous System Parameters like Heart Rate, Pulse Rate, Blood Pressure and Respiratory Rate. These parameters are very important for better Autonomous Nervous System functioning. So research scholar selected as effect of Savasana and Meditation on Autonomous Nervous System of Medical students. The was analyzed through Mean, Standard Deviation, Standard Error, Mean Difference and “t” test method. The level of significant was set at 0.05 level of confidence. The finding of this study showed significant effect on Heart Rate, Pulse Rate, Respiratory Rate and Blood Pressure.

**Keywords:** Savasana, meditation, nervous system, heart rate, pulse rate, respiratory rate and blood pressure

### Introduction

The name Savasana comes from the Sanskrit words 'shava' means corpse and Asana means posture or seat. Savasana is perhaps the most important part of yoga practice. It removes all mental and physical tensions and rejuvenates the mind and the body. Insomnia and hypertension can be treated by Savasana. Rehabilitation of the patients who have had a heart attack can be rapidly secured by the practice of Savasana over a long period. By this asana the posture and meditation are coordinated. It pacifies the body and mind. Meditation is a practice in which an individuals trains the mind and realize some benefits although it can argued meditation is a goal in and of itself.

The autonomic nervous system (ANS or visceral nervous system or involuntary nervous system) is the part of the peripheral nervous system that acts as a control system functioning largely below the level of consciousness, and controls visceral functions. The ANS affects heart rate, digestion, respiratory rate, salivation, perspiration, papillary dilation, and sexual arousal. Most autonomous functions re involuntary but a number of ANS action can work alongside some degree of conscious control.

### Purpose of the Study

The main purpose of this study was to find out the effect of Savasana and Meditation on Autonomous Nervous System of Vasantroa Naik Medical College students of Yavatmal.

### Methodology of the Study

For the present study 20 male students of Vasantroa Naik Medical College Yavatmal were selected randomly. The age of the students ranging 18-25 year. The 20 subject were divided into two equal groups 10 Control group and 10 Experimental Group. Then, experimental group were again divided into two sub- Group A Savasana (5 subjects) and Group-B Meditation (5 subjects). The Pre and Post-test were conducted on each groups. The study was limited to Heart Rate, Pulse Rate, Respiratory Rate and Blood Pressure of Autonomous Nervous System.

**Corresponding Author:**

**Dr. Anita Lokhande**

Director, Sports and Physical  
Education, Gondwana  
University, Gadchiroli,  
Maharashtra, India

**Training Schedule**

Venue	Group	Exercise	Weeks					
			1	2	3	4	5	6
Vasantnao Naik Medical college, Yavatmal	A	Savasana	10 Min.	12 Min.	14 Min.	16 Min.	18 Min.	20 Min.
	B	Meditation	10 Min.	12 Min.	14 Min.	14 Min.	18 Min.	20 Min.

**Note:** Timing 6.30 to 7.15 am.

**Statistical Analysis and Interpretation of Data**

The data was collected on 20 subjects before and after six week training program on Heart Rate, Pulse Rate, Respiratory Rate and Blood Pressure was analyzed by comparing the means of Pre and Post Tests of Control group and Experimental group and was again statistically analyzed by applying 't' test to check the difference among selected variables. The separate tables have been drawn for each item as follows.

**Table 1:** Resting Heart Rate during Pre and Post Test of Control Group

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	70.2	1.75	0.74	0.3	18	0.41	2.10
Post Test	70.5	1.58					

Level of Significance = 0.05  
Tabulated 't' 0.05(18) = 2.101

Table No. 1 reveals that there is no significance difference between means of Pre and Post tests of Control group, because mean of Post test is 70.5 is slightly higher than mean of Pre test is 70.2 and than mean difference is 0.3. After applying 't' test it was found that no significant difference between Pre and Post tests of Control group because value of calculated 't' is 0.4054 which is less than tabulated 't' is 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group because no training was given to the subjects of control group.

**Table 2:** Resting Heart Rate During Pre and Post Test of Experimental Group of Savasana

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	71.6	3.84	2.4	4.2	8	1.74	2.31
Post Test	67.4	3.78					

Level of Significance = 0.05  
Tabulated 't' 0.05(8) = 2.306

Table No. 2 reveals that there is no significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 71.6 is slightly higher than mean of Post test is 67.4 and than mean difference is 4.2. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 1.74 which is less than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is no significant effect in Experimental group after six weeks training programme.

**Table 3:** Resting Heart Rate During Pre and Post Test of Experimental Group of Meditation

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	70.6	2.07	1.18	11.4	8	9.65	2.31
Post Test	59.2	1.64					

Level of Significance = 0.05  
Tabulated 't' 0.05(8) = 2.306

Table No. 3 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 70.6 is slightly higher than mean of Post test is 59.2 and than mean difference is 11.4. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 9.65 which is higher than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is significant effect of training on Experimental group after six weeks training programme.

**Table 4:** Pulse Rate During Pre and Post Test of Control Group

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	70.2	1.75	0.74	0.3	18	0.41	2.10
Post Test	70.5	1.58					

Level of Significance = 0.05  
Tabulated 't' 0.05(18) = 2.101

Table No. 4 reveals that there is no significance difference between means of Pre and Post tests of Control group, because mean of Post test is 70.5 is slightly higher than mean of Pre test is 70.2 and than mean difference is 0.3. After applying 't' test it was found that no significant difference between Pre and Post tests of Control group because value of calculated 't' is 0.4054 which is less than tabulated 't' is 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group because no training was given to the subjects of control group.

**Table 5:** Pulse Rate During Pre and Post Test of Experimental Group of Savasana

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	71.6	3.84	2.4	4.2	8	1.74	2.31
Post Test	67.4	3.78					

Level of Significance = 0.05  
Tabulated 't' 0.05(8) = 2.306

Table No. 5 reveals that there is no significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 71.6 is slightly higher than mean of Post test is 67.4 and than mean difference is 4.2. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 1.74 which is less than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is no significant effect in Experimental group after six weeks training programme.

**Table 6:** Pulse Rate During Pre and Post Test of Experimental Group of Meditation

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	70.6	2.07	1.18	11.4	8	9.65	2.31
Post Test	59.2	1.64					

Level of Significance = 0.05  
Tabulated 't' 0.05(8) = 2.306

Table No. 6 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 70.6 is slightly higher than mean of Post test is 59.2 and than mean difference is 11.4. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 9.65 which is higher than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is significant effect of training on Experimental group after six weeks training programme.

**Table 7:** Respiratory Rate During Pre and Post Test of Control Group

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	19.5	2.17	0.74	0.2	18	0.27	2.10
Post Test	19.3	0.94					

Level of Significance = 0.05  
 Tabulated 't' 0.05(18) = 2.101

Table No. 7 reveals that there is no significance difference between means of Pre and Post tests of Control group, because mean of Pre test is 19.5 is slightly higher than mean of Post test is 19.3 and than mean difference is 0.2. After applying 't' test it was found that no significant difference between Pre and Post tests of Control group because value of calculated 't' is 0.27 which is less than tabulated 't' is 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group because no training was given to the subjects of control group.

**Table 8:** Respiratory Rate During Pre and Post Test of Experimental Group of Savasana

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	19	1.58	1.11	3.6	8	3.24	2.31
Post Test	15.4	1.94					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 8 reveals that there is no significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 19.0 is slightly higher than mean of Post test is 15.4 and than mean difference is 3.6. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 3.24 which is less than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is improvement in Experimental group after six weeks training programme.

**Table 9:** Respiratory Rate During Pre and Post Test of Experimental Group of Meditation

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	19	1.58	0.63	6.2	8	7.84	2.31
Post Test	12.8	0.83					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 9 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 19.0 is slightly higher than mean of Post test is 12.8 and than mean difference is 6.2. After applying 't' test it was found that there was significant

difference between Pre and Post tests of Experimental group because value of calculated 't' is 7.84 which is higher than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is significant effect of training on Experimental group after six weeks training programme.

**Table 10:** Systolic Blood Pressure During Pre and Post Test of Control Group

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	122.2	4.56	2.19	1	18	0.34	2.10
Post Test	121.2	2.52					

Level of Significance = 0.05  
 Tabulated 't' 0.05(18) = 2.101

Table No. 10 reveals that there is no significance difference between means of Pre and Post tests of Control group, because mean of Pre test is 122.2 is slightly higher than mean of Post test is 121.2 and than mean difference is 1.0. After applying 't' test it was found that no significant difference between Pre and Post tests of Control group because value of calculated 't' is 0.34 which is less than tabulated 't' is 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group because no training was given to the subjects of control group.

**Table 11:** Diastolic Blood Pressure During Pre and Post Test of Control Group

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	80.5	5.02	1.97	0.6	18	0.43	2.10
Post Test	79.9	3.72					

Level of Significance = 0.05  
 Tabulated 't' 0.05(18) = 2.101

Table No. 11 reveals that there is no significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 80.5 is slightly higher than mean of Post test is 79.9 and than mean difference is 0.6. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 0.428 which is less than tabulated 't' is 2.101 at 0.05 level of confidence, which shows that there no improvement in Control group because no training was given to the subjects of Control group.

**Table 12:** Systolic Blood Pressure During Pre and Post Test of Experimental Group of Savasana

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	123.3	4.81	2.27	4.8	8	2.11	2.31
Post Test	118.4	1.67					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 12 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 123.3 is slightly higher than mean of Post test is 118.4 and than mean difference is 4.8. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 2.11 which is less than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is no significant effect of training on Experimental group after six weeks training programme.

**Table 13:** Diastolic Blood Pressure During Pre and Post Test of Experimental Group of Savasana

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	83	5.19	2.59	5.4	8	2.08	2.31
Post Test	77.6	2.6					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 13 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 83.0 is slightly higher than mean of Post test is 77.6 and than mean difference is 5.4. After applying 't' test it was found that there was no significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 2.084 which is less than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is no significant effect of training on Experimental group after six weeks training programme.

**Table 14:** Systolic Blood Pressure During Pre and Post Test of Experimental Group of Meditation

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	122.4	2.96	1.76	10	8	5.68	2.31
Post Test	112.4	2.6					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 14 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 122.4 is slightly higher than mean of Post test is 112.4 and than mean difference is 10. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 5.68 which is higher than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is significant difference on Experimental group of six weeks training programmes.

**Table 15:** Diastolic Blood Pressure During Pre and Post Test of Experimental Group of Meditation

Control Group	Mean	SD	SE	MD	DF	CT	TT
Pre Test	83.8	4.49	1.72	9	8	5.23	2.31
Post Test	74.8	2.28					

Level of Significance = 0.05  
 Tabulated 't' 0.05(8) = 2.306

Table No. 15 reveals that there is significance difference between means of Pre and Post tests of Experimental group, because mean of Pre test is 83.8 is slightly higher than mean of Post test is 74.8 and than mean difference is 9. After applying 't' test it was found that there was significant difference between Pre and Post tests of Experimental group because value of calculated 't' is 5.23 which is higher than tabulated 't' is 2.306 at 0.05 level of confidence, which shows that there is significant difference on Experimental group of six weeks training programmes.

**Discussion of Findings**

- 1) The result showed that there was a significant effect of Savasana and Meditation on Heart Rate after six weeks training programme on Experimental group.
- 2) The result showed that there was a significant effect of

Savasana and Meditation on Pulse Rate after six weeks training programme on Experimental group.

- 3) The result showed that there was a significant effect of Savasana and Meditation on Respiratory Rate after six weeks training programme on experimental group.
- 4) The result showed that there is no significant effect of Savasana on Systolic and Diastolic Blood Pressure after six weeks training programme on experimental group.
- 5) The result showed that there is significant effect of Meditation on Systolic and Diastolic Blood Pressure after six weeks training programme on Experimental Group.

**Conclusion**

Within the limitation of the study and from statistical analysis the following conclusion was drawn.

There was significant effect of Savasana and Meditation on Heart Rate, Pulse Rate, Respiratory Rate and Meditation shows significant effect on Blood Pressure however Savasana did not show a significant effect on Blood Pressure.

**Recommendation**

In the light of result obtained and conclusion drawn the following recommendation were made for further investigation and for practical application.

- 1) The same study may be constructed with longer duration of training programme.
- 2) The study may be done in both sex groups.
- 3) In the study only four components were taken, but this can be done on more or less components.
- 4) The similar study can be carried out on various Yogic Asanas.
- 5) The similar study may be repeated on the other age groups.
- 6) The study may be repeated on large number of subjects.

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