

## Effects of Aerobic Exercises on Physiological Variables of College Students

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### Abstract

The purpose of this research was to study the effect of eight weeks aerobic training on physiological variables of college students. In this study blood pressure (systolic and diastolic pressure) was used as a physiological variable. 30 college students from Govt. College of physical education Ganderbal (J &K) were chosen as subjects for the study. The 15 subjects were randomly assigned into an experimental and 15 in a control group. The experimental group participated in twice weekly aerobic classes of 60 minutes duration for two months. Both groups were evaluated again after two months study period. The data was analyzed statistically by using independent t test. The level of significance was set at 0.05. Results revealed significant reduction in hypertension.

**KEYWORDS:** - Aerobic exercises, Hypertension, physiology

**Introduction:** - High BP is estimated to affect one of three adults aged  $\geq 25$  years or about 1 billion people worldwide. The theme of the “World Health Day” 2013 was “Measure your BP, reduce your risk”, which was a call for intensified efforts to prevent and control hypertension. Hypertension is a chronic condition with systolic blood pressure (SBP) of 140 mmHg and/or diastolic blood pressure (DBP) of 90 mmHg (JNC7 2003). An increased workload of the heart can result in the damage to the heart muscles and valves, thereby resulting in heart failure. Hypertension is a major contributor to the cardiovascular morbidity and mortality in the industrialized countries.

Reports suggest that hypertension is rapidly increasing in the developing countries like India. It has now become a global pandemic. The World Health Organization reports that hypertension affects more than 100 million individuals in India. Due to decreased awareness, the treatment and control rates are abysmally low in India.

Aerobic exercises are physical exercises of relatively low intensity that depends primarily on the aerobic generating process. Aerobic literally means “living in air” and refers to meet energy demands during exercise via aerobic metabolism. Generally light to moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended period of time. The intensity should be between 60 to 85% of maximum heart rate.

### Methodology:-

**Subjects:** - 30 subjects were selected randomly from Govt. College of physical education Ganderbal as subjects for the study. The age of the subjects ranged between 20 to 30 years.

**Tools:-** :- The data on hypertension was measured in mmHg by using Sphygmomanometer.

**Procedure:** - For the measurement of blood pressure as pre test the subjects were divided into two equal groups i.e. 15 as experimental and 15 as control group. Blood pressure was measured by using Sphygmomanometer. After assessment of pre test as experimental treatment Aerobic training was conducted for experimental group for two months as per schedule (2 days per week for 60 minutes per day) and no training was given to control group. After the completion of two months Aerobic exercise programme the post test was conducted to know the significance difference.

**Statistical technique:** - the t test was used to determine the effect of Aerobic exercises on blood pressure. Further the level of significance was set at 0.05.

**Results:-**

**Table 1 Showing the Systolic Blood pressure between pre and post – test of Control group**

Group	Test	Mean	S.D	M.D	S.E	D.F	T. value
Control Group	Pre –test	122.66	8.83	3.33	2.81	28	1.18
	Post- test	126.00	6.40				

Level of significance= 0.05 Tabulated t at 0.05 (28) degree of freedom = 2.02

Table 1 reveals that there is no significant difference between means of pre test and post test of control group. The mean difference between pre test and post test is slightly higher than the mean of the pre test which was 3.33. To check significant difference between the pre test and post test of control group the data was again analyzed by applying t test and it was found that there was no significant difference found between pre test and post test results. The obtained t value was less than the tabulated value.

**Table 2 Showing the Systolic Blood pressure between pre and post –test of Experimental group**

Group	Test	Mean	S.D	M.D	S.E	D.F	T. value
Experimental Group	Pre –test	128.06	6.73	1.06	2.21	28	1.48
	Post- test	127.00	5.40				

Level of significance= 0.05 Tabulated t at 0.05 (28) degree of freedom = 2.02

Table 2 reveals that there is no significant difference between means of pre test and post test of experimental group. The mean difference between pre test and post test is slightly higher than the mean of the pre test which was 1.06. To check significant difference between the pre test and post test of experimental group the data was again analyzed by applying t test and it was found that there was no significant difference found between pre test and post test results. The obtained t value was less than the tabulated value.

**Table 3 showing the Diastolic Blood pressure between pre and post –test of Control group**

Group	Test	Mean	S.D	M.D	S.E	D.F	T. value
Control Group	Pre –test	80.00	8.43	2.93	2.29	28	1.28
	Post- test	82.93	2.40				

Level of significance= 0.05 Tabulated t at 0.05 (28) degree of freedom = 2.02

Table 3 reveals that there is no significant difference between means of pre test and post test of control group. The mean difference between pre test and post test is slightly higher than the mean of the pre test which was 2.93. To check significant difference between the pre test and post test of control group the data was again analyzed by applying t test and it was found that there was no significant difference found between pre test and post test results. The obtained t value was less than the tabulated value.

**Table 4: Showing the diastolic Blood pressure between pre and post – test of Experimental group**

Group	Test	Mean	S.D	M.D	S.E	D.F	T. value
Experimental Group	Pre –test	82.00	7.73	2.46	2.11	28	1.18
	Post- test	84.46	2.40				

Level of significance= 0.05 Tabulated t at 0.05 (28) degree of freedom = 2.02

Table 4 reveals that there is no significant difference between means of pre test and post test of experimental group. The mean difference between pre test and post test is slightly higher than the mean of the pre test which was 2.46. To check significant difference between the pre test and post test of experimental group the data was again analyzed by applying t test and it was found that there was no significant difference found between pre test and post test results. The obtained t value was less than the tabulated value

**Discussion of findings:-** the data clearly revealed that there was no effect of aerobic exercises on hypertension it may be because the time span for the exercises was not sufficient.

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