

EFFECT OF EIGHT WEEK AEROBIC TRAINING PROGRAM ON SELECTED HEMATOLOGICAL PARAMETERS OF DEAF MALE STUDENTS

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ABSTRACT

The purpose of present study was to scrutinize the effect of eight - week aerobic training program on selected hematological parameters among deaf male students at higher secondary school level. For achieving the purpose of the study data was collected on twenty (N=20) deaf students between age group of 17- 25 years from Patiala School for deaf and Blind, Safdipur, Patiala, Punjab, India. The subjects were purposively assigned into two groups: Group-A: Experimental (N₁=10) and Group-B: Control (N₂=10). Two hematological variables namely leukocytes count and blood pH level were selected for the purpose of this study. Before and after exercise protocol, the hematological parameters were measured. All blood samples were taken by the lab technician and were examined in a fully computerized clinical laboratory. The experimental group was subjected to a aerobic training program, consisting of five days per week evening session for the period of eight - weeks. To compare the effect of eight - week aerobic training program on selected hematological parameters among deaf male students mean, standard deviation and t-test were employed with the help of statistical package of SPSS. To test the hypothesis the significance level was set at 0.05 percent. After statistical treatment, result showed that there were significant effect of eight week aerobic training programme on haematological variable leukocyte count of experimental group and insignificant effect was found in control group. On the other hand no significant effect was found on blood pH level of experimental group and control group.

Keywords: Hematology, Deaf and Aerobic.

INTRODUCTION:

Physical fitness is an active state that enables a person to do everyday activities without being easily tired, participate in leisure activities enthusiastically and overcome difficult situations. According to cardiologists and sports science experts, physical activity can increase cardiovascular efficiency through increasing the working potential of lungs and heart that leads to the reduction of blood pressure and harmful fat in the blood. Nowadays public exercise,

especially morning exercise, walking, jogging, cycling, running and working out, is popular among different groups of people due to its ease and convenience.

Due to the popularity of morning exercise, it is important to do some research on whether it is beneficial or not. Therefore investigating the effects of morning exercise is of vital importance.

R. A. Kiehl, P. Teraslinna, D. G. Rowe & J. Jackson (1975) examined the effect of standardized aerobic and anaerobic exercise on blood pH level. Seven male athletes were used as subjects in this study. There was no change in the pH at the 60 per cent intensity level (aerobic exercise), but at anaerobic levels (80 per cent and maximum) there was an increasing drop of pH with increasing intensity of exercise.

Evrin Çakmakçı, Ahmet Sanioglu, Hüsamettin Vatansev & Kamile Marakoglu (2010) investigate the effects of 8-week step-aerobic exercise on the body composition and hematologic parameters in the obese and overweight females. 29 obese people whose average age was 41.55 ± 6.72 year, average height is 159.21 ± 7.18 cm, average weight is 85.97 ± 9.60 kg, 29 overweight people whose average age was 35.10 ± 9.11 year, average height was 160.59 ± 5.20 cm, average weight was 68.55 ± 6.72 kg. were selected for this study. Investigators conclude that in the obese and overweight women, the applied exercise protocol have an important effect on the anthropometric and hematologic levels.

Akbar Sazvar, Mohammad Mohammadi, Farzad Nazem & Nader Farahpour (2012) studied the effect of morning aerobic exercise on some hematological parameters in young, active males. 26 male (age-19 to 23 year), university students without any previous smoking experiences or regular exercise programs were randomly selected and divided into two groups: control and exercise. The findings showed that during an eight week morning exercise the number of red blood cells and hemoglobin levels increased. While the bleeding times and the number of platelets decreased significantly.

In this study researcher made an attempt to observe changes induced by eight week aerobic training program in hematological parameters of students at higher secondary school level.

MATERIAL & METHODS:

Subjects: Data was collected on twenty (N=20) deaf students between age group of 17- 25 years (Mean \pm SD: age 20.95 ± 2.21 years,) from Patiala School for Deaf and Blind, Safdipur, Patiala, Punjab, India. The subjects were purposively assigned into two groups: Group-A: Experimental (N₁=10) and Group-B: Control (N₂=10).

Selection of Variables:

The following hematological variables were selected for the purpose of this research and are presented in the table 1.

Table – 1: Hematological Variables, Tests and Unit of Measurement

Sr.no	Hematological variable	Tests For Measurement	Unit of Measurement	Normal Range
1.	Blood ph level	Glass Electrode Test	Logarithmic Units	7.35 - 7.45
5.	Leukocytes	Complete Blood Count	K/ μ L (Thousands per cubic milliliter of blood)	3.3-8.7 K/ μ L

Procedure of blood testing:



In the present research, eight - week aerobic training program was applied to subjects. Before and after exercise protocol, the hematological parameters were measured. All blood samples were taken by the lab technician and were examined in a fully computerized clinical laboratory.

Schedule of eight - week aerobic training program:

The experimental group was subjected to a aerobic training program, consisting of five days per week morning session for the period of eight - weeks. Day of exercise, duration and repetitions are presented in table 2.

Table 2: Schedule of eight - week aerobic training program

Day	Aerobic Exercise	Duration	Repetition
Monday	Walking	½ hour	1
Tuesday	Skipping rope	2 minute	6
Wednesday	Stationary cycling	5 minute	3
Thursday	Stair climbing	3 minute	4
Friday	Cross country skill for 3km	---	1
Saturday	Rest	---	---
Sunday	Rest	---	---

STATISTICAL PROCEDURE:

After the collection of relevant data, to know the effect of eight - week aerobic training program on selected hematological parameters among differently deaf students, t-test will be employed

on mean values of pre and post tests with the help of SPSS 16.0. The level of significance was set at 0.05 percent.

Hematological Variable	Group	Number of Subjects	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t-Values
Leukocytes Count	Experimental	10	7.43	0.43	7.88	0.45	6.54*
Leukocytes Count	Control	10	7.80	0.535	7.740	0.465	0.895

RESULTS:

Table No. 3: Comparison of Mean, SD and t-value for Pre and Post Test of Leukocytes Count in Experimental Group and Control Group

$$t_{.05}(9) = 2.26$$

The findings of pre and post test on experimental and control group namely Mean, SD and t values for leukocytes count are shown in table no 3. The table statistically reveals that the calculated t value 6.54 for leukocytes count of experimental group is greater than table value 2.26. On the other hand calculated t value 0.895 for leukocytes of control group is less than table value that is 2.26. Therefore the values of table shows that, during eight – weeks aerobic training protocol the leukocytes count increased significantly in experimental group. But in the control group there is no significant change in mean values of leukocyte count.

Table No. 4: Comparison of Mean, SD and t-value for Pre and Post Test of Blood pH Level in Experimental and control Group

Variable	Group	Number of Subjects	Pre-Test Mean	Pre-Test SD	Post-Test Mean	Post-Test SD	t-Values
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Blood pH Level	Experimental	10	7.26	0.052	7.28	0.063	0.688
Blood pH Level	Control	10	7.240	0.052	7.250	0.053	0.3612

$t_{.05}(9) = 2.26$

The table no. 9 statistically reveals that the calculated t value 0.688 and 0.361 respectively for blood pH level of experimental and control groups were less than table value that is 2.26. Therefore the values of table no. 4 shows that, during eight – weeks aerobic training protocol there is no significant change in blood pH level in experimental and control group.

DISCUSSION:

During eight – week aerobic training program the leukocytes count increased significantly in experimental group but in the control group there is no significant change in mean values of leukocytes count. Alike the present study, the study by Akbar Sazvar et.al. (2012) reveal the same opinion that, aerobic training induced significant change in hematological parameters.

On the other hand in the case of blood pH level, during eight – week aerobic training program there was no significant change in mean values of blood pH level in both experimental and control group. These results of the study confirm the findings of R. A. Kielar et. al. (1975) who also reported no significant effect of twelve week aerobic training program on blood pH level. These results can be due to variations in training programs employed, populations studied, and the analytical methods used in present study.

CONCLUSIONS:

Summing up, the results substantiate that, during eight – week aerobic training program the leukocytes count increased significantly in experimental group and no significant difference was found in mean values of pre and post test of leukocytes count in control group.

The result strongly confirm that, an insignificant change was found in blood pH level in both experimental and control group after the application of eight - week aerobic training program.

References

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