

Effect of Aerobic Exercises on selected Physiological variables of School Girls

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Abstract

The main aim of this study was to find out the effect of aerobic exercises on selected physiological variables of school girls. For this study 40 female students were selected randomly from Shri SatyaSai English Medium School Yavatmal. Their age ranges from 8-14 years. The aerobic exercises were employed for 6 weeks, 6 days training in a week for 45 minutes. The level of significant was set at 0.05 level of confidence. The results of the study showed significant effects on Pulse Rate and Vital Capacity after 6-weeks aerobic training program.

Introduction:

“Physical fitness is one’s richest possession. It cannot be purchased; it has to be earned through a daily routine of physical exercise.”It is self- evident that the fit citizens are a nation’s best assets and weak ones its liabilities. Endurance and fitness play an important role in efficiency of human being .As a whole ways of achieving these factors depend upon person to person. In ancient times girls and woman of India did not required any special exercise as their house hold work itself was enough for their physical fitness .But today’s scenario is different, all vigorous household activities are cut down in rural areas, causing a luxurious life. So, there arose a need of some especial fitness exercises which will keep the girls and woman physically fit.

Aerobic exercise:

Aerobic exercise was coined in the early 1960s by Doctor Kenneth Cooper. His research showed that sustained cardio vascular exercise is a valid form of preventive medicine for maintaining general fitness .He determined the cardio vascular and respiratory benefits yielded by different types of aerobic dance have become popular as a form of planned exercise for overall conditioning. Aerobic dance programme is become singly popular all over the world. Rhythm has been with us as an external riddle ever since. From ancient to modern time, it has been interpreted rhythm as continuity on universal principle of force, persistence and motivation. Since all the physiological function of living being are rhythmic, it is logical to conclude that the outward manifestation of such inner action will appear in the form of rhythmic movement.Man, like to work preferably in rhythm. Rhythmic exercises such as rhythmic gymnastics, aerobic dance or rhythmic movement activities are more popular today as it is more pleasing, relaxing and more flexible in changing mode of performing than that of daily monotonous running of jumping.As more and more people are becoming health conscious, so more and more health and fitness centers are being opened where aerobic programme with music is followed for fitness purpose. Along with your exercise programmes, your diet should, be appropriate and nutritive in nature accordingly. Try to achieve certain goals and targets through aerobic training programme. The schedule must be based on those goals and targets and also avoid exertion.

METHODOLOGY

In this chapter procedure for selection of subjects, source of data, criterion measures, collection of data have been described.

Source of Data:-

The sources of the data were the students of Shri SatyaSai English Medium School Yavatmal.

Selection of Subjects:-

For the present study 30 female subjects were selected randomly from ShriSatyaSai English Medium School yavatmal. There age varied from 8 to 14 years. All the subjects' belongsto different socio economic backgrounds.

Criterion measures:-

For the present study researcher uses the following units for measuring physiological variables:-

- i) Pulse Rate: - To measure the pulse rate stop watch is used and is measured in beats/minutes
- ii) Vital Capacity: -To measure vital capacity spirometeris used and is measured in liters.

Sampling procedure:

For the present study 30 female subjects were selected randomly from Shri SatyaSai English Medium School Yavatmal. There age varied from 8 to 14 years. They were divided into two equal groups of 15 subjects in each group. One group was treated as experimental group and other was control group. The experimental group under goes 6 weeks training programme, for 6 days in a week, for 45minuts per day, under the supervision of the guide. The control group does not undergo any specific training during the period of six week programme.

Collection of Data:-

To find out the effect of aerobic exercises on physiological variables the data were collected after administering test items on selected variables before and after the training programme of six week.

ANALYSIS AND INTERPRETATION OF DATA

In this chapter the data gathered from pre-test and post test of control group and experimental group are presented in tables. The level of significance to test the hypothesis was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of the study. The data collected on 30 subjects before and after six week training program on pulse rate and vital capacity were analyzed by comparing the means of pre and post tests of control group and experimental group and was also statically analyzed by applying the "t" test to check the difference among selected variables. Therefore separate tables and graphs have been drawn for each item as follows.

Table No. 1

Pulse Rate between pre and post-Test of control group of age group of 8-14 years

Control Group	Mean	S.D	S.E. Comb.	M.D.	D.F.	C.T.	T.T.
Pre. Test	69.6	4.63	1.69	0.4	28	0.23	2.101
Post Test	69.2	2.7					

Level of Significance=0.05

Tabulated 't' $0.05(18)=2.101$

Table No. 1 reveals that there is no significant difference between means of pre and post tests of control group, because mean of pre test is 69.6 is slightly higher than mean of post test is 69.2 and there mean difference is 0.4. To check significant difference between pre and post test of control group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between pre test where S.D. =4.63 and after post test S.D. = 2.7 and their combined standard error = 1.69. therefore after applying 't' test it was found that was no significant difference between pre and post tests of control group because value of calculated 't' = 0.4 which is less than tabulated 't' = 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group before and after test because no training was given to the subjects of control group.

Table No. 2**Pulse Rate between pre and post-Test of Experimental group of age group of 8-14 years**

Experimental Group	Mean	S.D	S.E. Comb.	M.D.	D.F.	C.T.	T.T.
Pre. Test	69.1	4.30	1.87	9.4	28	5.026	2.101
Post Test	59.7	1.50					

Level of Significance=0.05

Tabulated 't' $0.05(18)=2.101$

Table No. 2 reveals that there is a significant difference between means of pre and post tests of experimental group, because mean of pre test is 69.1 is higher than mean of post test 59.7 and there mean difference is 9.4. To check significant difference between pre and post test of experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between pre test where S.D. =4.30 and after post test S.D. = 1.50 and their combined standard error = 1.87. therefore after applying 't' test it was found that there was a significant difference between pre and post tests of experimental group because value of calculated 't' = 5.026 which is higher than tabulated 't' = 2.101 at 0.05 level of confidence, which shows that there is significant effect on experimental group after six weeks aerobic training .

Table No:-3**Vital Capacity between pre and post-Test of control group of age group of 8-14 years**

Control Group	Mean	S.D	S.E. Comb.	M.D.	D.F.	O.T.	T.T.
Pre. Test	404	56.22	24.99	8	28	0.32	2.101
Post Test	412	55.53					

Level of Significance=0.05

Tabulated 't' $0.05(18)=2.101$

Table No:- 3 reveals that there is no significant difference between means of pre and post tests of control group, because mean of pre test is 404 is slightly higher than mean of post test is 412 and there mean difference is 8. To check significant difference

between pre and post test of control group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between pre test where S.D. = 56.22 and after post test S.D. = 55.53 and their combined standard error = 24.99. therefore after applying 't' test it was found that there was no significant difference between pre and post tests of control group because value of calculated 't' = 0.32 which is less than tabulated 't' = 2.101 at 0.05 level of confidence, which shows that there is no improvement in control group before and after test because no training was given to the subjects of control group.

Table No:-4
Vital Capacity between pre and post-Test of Experimental group of age group of 8-14 years

Experimental Group	Mean	S.D	S.E. Comb.	M.D.	D.F.	O.T.	T.T.
Pre. Test	414	47.88	24.24	87	28	3.589	2.101
Post Test	501	59.89					

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

Table No:-4 reveals that there is a significant difference between means of pre and post tests of experimental group, because mean of pre test is 414 is higher than mean of post test 501 and there mean difference is 87. To check significant difference between pre and post test of experimental group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between pre test where S.D. =47.88 and after post test S.D. = 59.89 and their combined standard error = 24.24. therefore after applying 't' test it was found that there was a significant difference between pre and post tests of experimental group because value of calculated 't' = 3.589 which is higher than tabulated 't' = 2.101 at 0.05 level of confidence, which shows that there is good improvement in experimental group after six weeks aerobic training .

Findings of the research:-

It has been observed from the analysis of data that there were significant difference in Pulse Rate and Vital Capacity after administration of training programme, and improvement were found in Pulse Rate and Vital Capacity.

Conclusion:-

It is concluded that after 6-weeks training the results were statistically analyzed and the following conclusion was drawn. The findings of this study showed significant effects on Pulse Rate and Vital Capacity after 6-weeks aerobic training program.

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