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Effects of aerobic exercises, and meditation on psychological variables of school children

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Abstract

Aerobic exercise is physical exercise of relatively low intensity that depends primarily on the aerobic energy-generating process. Aerobic literally means "living in air", and refers to the use of oxygen to adequately 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 periods of time. Aerobic literally means oxygen referring to the consumption of oxygen by the metabolic system. It involves a little warm up activity at the start and another minimum 20 minutes of exercise. Aerobic exercises are vital in weight loss activities. Jackson (1987) stated that aerobic exercises depends upon the continuous action of a number of groups of muscles over a period of time, they get fitter than you are able to get from longer periods out of your muscles.

Keywords: effects of aerobic exercises, and meditation on psychological variables of school children

Introduction

The process of increasing aerobic fitness involves increasing the rate at which blood can be carried from the lungs to the exercising muscles. This obviously depends partly upon the heart itself, but it also depends upon increasing the blood supply to the muscle tissue and increasing their ability to extract oxygen from the blood. Aerobic exercise is also the kind that aids weight loss. Mildred and Cooper (1972) have proposed for woman a point system for activities to develop circulatory and respiratory fitness, called aerobics. The general plan is for the individual to accumulate thirty points a week from selection of activities; each activity has a point value commensurate with its contribution to aerobic fitness. The aerobic point system was derived from laboratory measurements of oxygen, costs of the exercise as well as data derived from field tests. Christina Berth (1982) stated that word aerobic simply means with Oxygen and can therefore be used to describe many form of exercises or sports such as jiggering swimming dancing. The purpose of all these form exercise is to make the muscles including the heart which is the muscle work harder than normal.

Benefits of aerobic exercises

- Recovers mood and decreases the depression, stress and anxiety.
- It avoids overheating.
- Aerobics pushes the blood faster and more energetically.
- Helps in prevention of cardiovascular diseases.
- Sculptures muscles of the body and makes body more flexible.

Statement of the problem

- The purpose of the study was to find out the "Effects of Aerobic Exercise and Meditation on Psychological Variables of School Children".

Objectives of the study

Effect of Aerobic Exercises on Psychological development of school children.

- The researcher wanted to find out the effect of Meditation training on the Physiological development.

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- The researcher wanted to find out the effect of Meditation training on the Psychological development.

Delimitations of the study

- For the purpose of the study, 120 female subjects in the age group ranging from 14 to 16 years were randomly selected.
- The duration of the experimental period was Restricted to Sixteen weeks. The number of sessions per week for the Experimental group was confined to six.

Limitations of the study

- The general mood of the subject’s environmental factors and performance in the test by the subject was recognized as limitation of the study due to varied social, cultural and environmental factors were not taken into consideration.
- No motivational techniques were used for the collection of data.

Hypothesis

The following are the hypothesis of the present study.

- It was hypothesized that the Aerobic Exercises, Meditation and combined training improved the following Physical, Physiological and Psychological Variables of school children
- In studying the individualized effects, it was hypothesized that Aerobic Exercises may have significant improvement over the period of Sixteen weeks training on Endurance, Strength, Flexibility, Vital Capacity, Resting pulse rate, Stress, Anxiety, intelligence of school children.

Definition of the terms

Stress

Stress is the emotional and physical strain caused by our response to pressure from the outside world. Common stress reactions include tension, irritability to concentrate and a variety of physical symptoms that include headache and a fast heart beat. Diane L. Cell (1972).

Psychological Variables

Stress

Stress questionnaire developed by Z. Akthar

Procedure

1. A five point scale questionnaire with 51 items which are relevant to the stressors was prepared.
2. Students who fulfilled the criterion for the required sample were selected and visited.
3. The selected respondents were requested to perform the test.



Plate 1: Subject responding, the response to the Stress Questionnaire

Table 1: Pre-test and post test and adjusted post-test scores on stress in the experimental group and control group

Stress	Group	Mean	SD	SV	SS	Df	MS	F	P
Pre Test Anova	G1	31.7000	6.97854	BG	21.433	3	7.144	.155	.26
	G2	30.9667	6.98512	WG	5340.933	116	46.043		
	G3	30.7667	7.01566	T	5362.367	119			
	G4	31.7000	6.12034						
Stress	Group	Mean	SD	SV	SS	Df	MS	F	P
Post Test Anova	G1	25.9333	6.15844	BG	1745.558	3	581.853	16.520	.000
	G2	22.4333	5.94041	WG	4085.567	116	35.220		
	G3	23.7667	5.44998	T	5831.125	119			
	G4	32.3667	6.16152						
Stress	Group	Mean	SD	SV	SS	Df	MS	F	P
Adj.Post Anova	G1	25.9333	6.15844	BG	1531.976	3	510.659	56.828	.000
	G2	22.4333	5.94041	WG	1033.402	115	8.986		
	G3	23.7667	5.44998	T	2.396.55	118			
	G4	32.3667	6.16152						

** Significant 0.05 level table value 2.76

Table 1. Indicates that the AM ± SD Pre-test stress scores of G1, G2, G3 and G4 are 31.70±6.97, 30.96± 6.98, 30.76± 7.01 and 31.70± 6.12 respectively. The AM ± SD Post-test stress scores of G1, G2, G3 and G4 are 25.93± 6.15, 22.43± 5.94, 23.76±5.44 and 32.36±6.16 respectively.

The AM ± SD adjusted Post-test stress scores of G1, G2, G3 and G4 are 25.93± 6.15, 22.43± 5.94, 23.76± 5.44 and 32.36± 6.16 respectively, it can be inferred that there do not exist any significant mean differences in the pre-test stress scores of Experimental and Control groups (F= 155, P > 0.05).

That means all the groups have same pre test mean stress scores and therefore the groups can be equable for their final

scores.

There do exist significant mean difference in the pos- test Stress scores of Experimental and Control groups (F= 16.520, P < 0.05). Further, if the effect due to initial pre-test scores was eliminated, the adjusted post-test mean stress scores also showed significant difference among various groups (F= 56.828, P < 0.05).

Since ANCOVA showed significant difference in stress among various groups, Scheffe’s post hoc pair- wise comparisons has been carried out. The details are shown in table 2.

Table 2: Data and test of significance of scheffes post hoc pair-wise comparison stress.

Group	Group2	MD	P
G1	G2	2.946(*)	.000
G1	G3	1.461	.062
G1	G4	-6.433(*)	.000
G2	G3	-1.485	.058
G2	G4	-9.379(*)	.000
G3	G4	-7.894(*)	.000

** Significant 0.05 level

- G1 Aerobic group
- G2 Mediation group
- G3 Combined group
- G4 Control group

Table 2 it is seen that after Scheffe’s test all the Experimental groups showed statistically significant difference compared to the Control group with respect to stress. However, groups G1 to G3 and G2 to G3 do not differ significantly with respect to stress and the same as displayed in the figure 1.

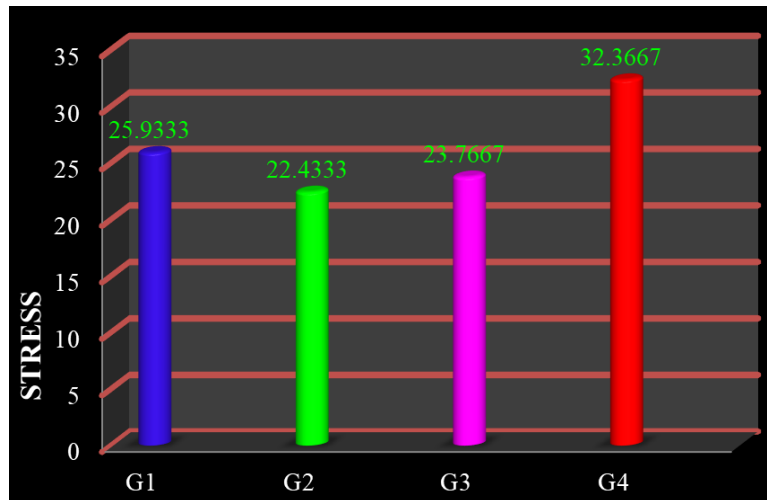


Fig 1: Comparative bar chart of adjusted post-test scores on stress in the experimental group and control group

Figure No.1 the above figure indicates that stress performance decreased significantly over the 16 weeks training period Aerobic, Meditation and Combined training groups; however, the difference among the three groups were significant. The Aerobic training group significantly decreased stress performance after 16 week training period. The Meditation training groups decreased stress performance after 16 week training period. The combined training groups also produce improvement Meditation training group and Control group. However Control group did not produce any significant improvement on stress.

Conclusion

Based on the findings the following conclusions were drawn from the present study. Sixteen weeks of Aerobic training has shown significant improvement on Physical, Physiological and psychological performance variable of the subjects. Meditation training has shown significant improvement on Physical, Physiological and Psychological performance variable of the subjects.

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