



ISSN: 2456-0057
IJPNPE 2019; 4(1): 553-556
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www.journalofsports.com
Received: 05-11-2018
Accepted: 08-12-2018

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Effects of aerobic exercises, and meditation on endurance variable 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. Aerobic exercise is the cardiovascular activity that involves prolonged activity of large muscles without stopping. Aerobic exercises burns one's fat and keeps one's metabolism rate high even after the activity is over. Just after 15 minutes of the exercise one's glycogen burn's off producing glucose, which then uses oxygen to generate energy by burning fat.

Keywords: Effects of aerobic exercises, and meditation on endurance variable of school children

Introduction

Aerobic exercise is the cardiovascular activity that involves prolonged activity of large muscles without stopping. Aerobic exercises burns one's fat and keeps one's metabolism rate high even after the activity is over. Just after 15 minutes of the exercise one's glycogen burn's off producing glucose, which then uses oxygen to generate energy by burning fat. Though very latter researchs have been conducted to establish its effectiveness, there is a growing belief that certain type of music tend to stimulate a person to a higher performance level. This seems to be consistent with the observation that rock music and marching music tend to elicit movement on the part of any listeners. Singher (1972) stated that the exercise records seem to be widely used in schools as a means of stimulating students to keep up with the pace and perhaps perform a maximum of activity with a minimum of conscious pairs. The rhythm of the music should guide the performer in his movement while his arousal level should be brought to an optimum level for learning skills. If this optimum situation is created, it is reasonable to expect that the student will learn faster and easier new skills than in a situation without music, which are according to the discussed research outcomes, cannot be considered an optimal situation. Here music helps the students to recognize rhythmic patterns in sports activities for improving fundamental skills such as walking, jumping and running.

Benefits of Aerobic Exercises

- The heart operates more efficiently/ and becomes stronger.
- It helps to control weight.
- Decreases the risk in developing diabetes, heart diseases and obesity.
- There is an augment in good cholesterol and reduction in bad cholesterol.

Meditation

Meditation is a means of transforming the mind. Buddhist meditation practices are techniques that encourage and develop concentration, clarity, emotional positivity, and a calm seeing of the true nature of things. By engaging with a particular meditation practice you learn the patterns and habits of your mind, and the practice offers a means to cultivate new, more positive ways of being.

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With regular work and patience these nourishing, focused states of mind can deepen into profoundly peaceful and energized states of mind. Such experiences can have a transformative effect and can lead to a new understanding of life.

Concentration

Concentration is the heart of all the types of meditation, but in some of the techniques, focus is predominantly on building concentration. Why is concentration so important? This is because, in order to gain the fruits of meditation, one needs to train the mind to concentrate and focus on an object or nothingness that is to cut all distractions.

Benefits of Meditation

With meditation, the physiology undergoes a change and every cell in the body is filled with more prana (energy). These results in joy, peace, enthusiasm as the level of prana in the body increases.

Physical level, meditation

- Lowers high blood pressure
- Lowers the levels of blood lactate, reducing anxiety attacks
- Decreases any tension-related pain, such as, tension headaches, ulcers, insomnia, muscle and joint problems
- Increases the energy level, as you gain an inner source of energy

Mental Benefits of Meditation

Meditation brings the brainwave pattern into an Alpha state that promotes healing. The mind becomes fresh, delicate and beautiful. With regular practice of meditation:

- Anxiety decreases
- Emotional stability improves
- Creativity increases
- Happiness increases
- Intuition develops

Statement of the Problem

The purpose of the study was to find out the “Effects of Aerobic Exercises, And Meditation on Endurance Variable of School Children”.

Objectives of the study

- Effect of Aerobic Exercises on Physical fitness development of school children.
- The researcher wanted to find out the effect of Meditation training on the Physical fitness 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.
- The selected subjects were randomly chosen from shantiniketan high school of Vijayapura District of Karnataka state.

Limitations of the study

- The daily routine work of the subjects influenced Results, hence this was considered as limitation.

- The climatic conditions at the time of conducting the test influenced the performance of the Subjects was considered as limitation.

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.

Significance of the study

- The Result of this study helps Physical Education teachers, coaches and trainer to make use of Aerobic Exercises, Meditation and combined training to improve the Physical, Physiological and Psychological Variables of the subjects.
- This study threw light on the level of Physical, Physiological and Psychological Variables of the subjects.

Endurance

Singh (1984) explains that it is the resistance ability against fatigue. It denotes not only the ability to delay the onset of fatigue for a long time but also the ability to recover quickly from fatigue. In similar words, ability to work for a longer period without getting tired and to recover quickly from fatigue and after the activity. Endurance is the ability to do sports movements, with the desired quality and speed, under condition of fatigue

Methodology

The procedure adopted in the present research work is related to the selection of subjects, selection of variables, training procedures, experimental design, selection of tests, orientation of the subjects, Pilot study, collection of data, administration of the tests and statistical technique involved in the study.

Selection of Subjects

The Purpose of the study was to find out the “Effects Of Aerobic Exercises, And Meditation On Endurance Variable Of School Children ” To achieve this purpose 120 Female subjects in the age group ranging from 14 to 16 years studying in Shantiniketan High School, Vijayapura, Karnataka State were selected randomly and subjects were divided into four equal groups of thirty each known as Experimental group I Aerobic training Experimental group II Meditation training Experimental group III Combined training IV and Control group.

- Dependent variables
- Physical variables
- Endurance

Cooper 12-minute Run Test

Analysis and Interpretation of Data

The aim of the research work was find out the Specific and Combined Effects of Aerobic Exercises and Meditation on Physical, Physiological and Psychological Variables of School children. For the purpose of the research study 120

school girls Student in the age group of 14 to 16 years belonging to the Student of Shantiniketan High School, Vijayapura, and Karnataka State were selected as subjects for the present study. The subjects were divided into four groups.

Group I treated as Aerobic group, Group II treated as Meditation group, Group III treated as combined group and Group IV considered as control group.

Table 1: Pre-Test And Post Test And Adjusted Post-Test Scores On Endurance In The Experimental Group And Control Group.

Endurance	Group	Mean	SD	SV	SS	Df	MS	F	P
Pre test ANOVA	G1	27.3235	2.19655	BG	74607.492	3	24869.164	1.225	.30
	G2	27.3182	2.19526	WG	2355290.433	116	20304.228		
	G3	27.2646	2.18524	T	2429897.925	119			
	G4	26.8355	2.36903						
Endurance	Group	Mean	SD	SV	SS	Df	MS	F	P
Post test ANOVA	G1	33.5312	3.5302	BG	122131.892	3	40710.631	3.034	.032
	G2	33.5005	3.27747	WG	1556619.033	116	13419.130		
	G3	33.1658	3.30103	T	1678750.925	119			
	G4	26.6794	2.37097						
Endurance	Group	Mean	SD	SV	SS	Df	MS	F	P
Adj.post ANOVA	G1	33.5312	3.29002	BG	913.063	3	304.354	42.931	.000
	G2	33.5005	3.27747	WG	815.276	115	7.089		
	G3	33.1658	3.30103	T	1.728.339	118			
	G4	26.6794	2.37097						

**Significant 0.05 level table value 2.76

Table 1. Indicates that the AM ± SD Pre-test Endurance scores of G1, G2, G3 and G4 are 27.32±2.19, 27.31± 2.195, 27.26 ± 2.185 and 26.83 ± 2.36 respectively. The AM ± SD Post-test Endurance scores of G1, G2, G3 and G4 are 33.53± 3.53, 33.50± 3.27, 33.16 ±3.301 and 26.67±2.370 respectively.

The AM ± SD adjusted Post-test Endurance scores of G1, G2, G3 and G4 are 33.53± 3.29, 33.50± 3.27, 33.16± 3.301 and 26.67± 2.370 respectively, it can be inferred that there do not exist any significant mean differences in the pre test Endurance scores of Experimental and Control groups (F= 1.225, P>0.05).

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

There do exist significant mean difference in the post-test Endurance scores of Experimental and Control groups (F= 3.034, P<0.05). Further, if the effect due to initial pre test scores was eliminated, the adjusted post-test mean Endurance scores also showed significant difference among various groups (F= 42.931, P<0.05).

Since ANCOVA showed significant difference in Endurance 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 Endurance

Group	Group2	MD	P
G1	G2	.027	.969
G1	G3	.324	.639
G1	G4	6.507(*)	.000
G2	G3	.297	.667
G2	G4	6.481(*)	.000
G3	G4	6.184(*)	.000

** Significant at 0.05 level

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 Endurance. However, groups G1 to G2, G1 to G3 and G2 to G3 do not differ significantly with respect to Endurance and the same as displayed in the figure 1.

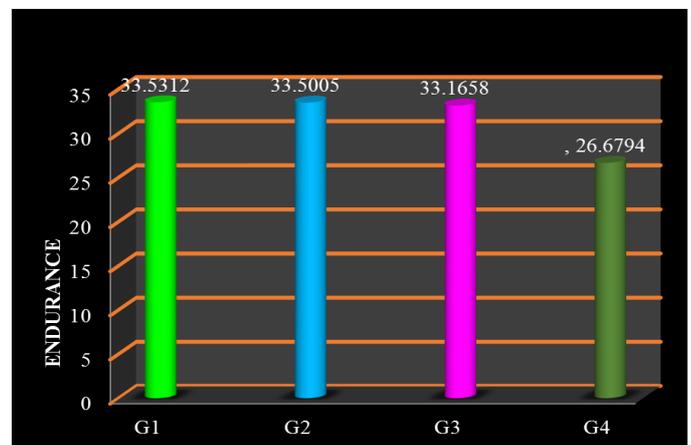


Fig 1: Comparative Bar Chart of Adjusted Post-Test Scores on Endurance in the Experimental Group and Control Group

Figure No. 1. The above figure indicates that Endurance performance improved significantly over the 16 weeks training period in aerobic, Meditation and Combined training groups; however, the difference among the three groups was significant. The Aerobic training group significantly improved Endurance performance after 16 weeks of training. The Meditation training group also showed improvement in Endurance performance after 16 weeks of training. The Combined training group also produced improvement in Endurance performance. However, the Control group did not produce any significant improvement in Endurance.

Conclusion

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

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