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 positivty, 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.
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.

<table>
<thead>
<tr>
<th>Endurance</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>SV</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
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<td>G1</td>
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<td>2.19655</td>
<td>BG</td>
<td>74607.492</td>
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<td>WG</td>
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<td>20304.228</td>
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<td></td>
<td>G3</td>
<td>27.2646</td>
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<td></td>
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<tr>
<td>Endurance</td>
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<td></td>
<td>G4</td>
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<td>Adj. post ANOVA</td>
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<td>3.29002</td>
<td>BG</td>
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**Table 2**: Data and Test of Significance of Scheffe’s Post Hoc Pair-Wise Comparison Endurance

<table>
<thead>
<tr>
<th>Group</th>
<th>Group2</th>
<th>MD</th>
<th>P</th>
</tr>
</thead>
<tbody>
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<td>G1</td>
<td>G2</td>
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<td>.969</td>
</tr>
<tr>
<td>G1</td>
<td>G3</td>
<td>.324</td>
<td>.639</td>
</tr>
<tr>
<td>G1</td>
<td>G4</td>
<td>6.507 (<em>)</em></td>
<td>.000</td>
</tr>
<tr>
<td>G2</td>
<td>G3</td>
<td>.297</td>
<td>.667</td>
</tr>
<tr>
<td>G2</td>
<td>G4</td>
<td>6.481 (<em>)</em></td>
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</tr>
<tr>
<td>G3</td>
<td>G4</td>
<td>6.184 (<em>)</em></td>
<td>.000</td>
</tr>
</tbody>
</table>

**Significant at 0.05 level**

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±33.53, 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

**Figure No. 1**: Comparative Bar Chart of Adjusted Post-Test Scores on Endurance in the Experimental Group and Control Group

The above figure indicates that Endurance performance improvement 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 improvement Endurance performance after 16 week training period. The Meditation training groups improvement Endurance 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 Endurance.

**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.

**References**

1. Agarwal M, Naidu RK. Impact of desirable and undesirable events on health. Journal of Personality and...