Relative effect of hatha yoga and aerobic training on body mass index variables among endomorphy type boys

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Abstract
The main purpose of the present study was to find out the relative effect of hatha yoga and aerobic training on body mass index variables among endomorphy type boys. To achieve the purpose of the study, 45 boys will be selected at random from in and around Tirunelveli, Tamil Nadu, India. There were age of the subjects are ranged between 13-17 year. The Selected subjects were divided into three equal groups as follows Hatha Yoga Group (HYG) underwent practice yoga, Aerobic Training Group (ATG) underwent aerobic training and Control Group (CG) did not participate any training. The hatha Yoga group consists of 15 subjects who undergone the practice of Asanas and Pranayama. The Aerobic group consists of 15 subjects who undergone rhythmic Aerobic exercises. A qualification criterion for the experimental group was some participation in school level sports and games in order to sustain the training process. The post--tests were conducted on the above said dependent variables after a period fourteen weeks. The difference between the pre-test and post test was considered the effect of respective experimental practice. To test the statistical significance ANCOVA was used. In all cases 0.05 levels was fixed to test the hypothesis.

Keywords: hatha yoga and aerobic training, body mass index

Introduction
Hatha Yoga originate in India is the sciences. Nowadays, hatha yoga individual a subject of wide-ranging happiness has gain universal status. It can serve as an applied science in a number of fields such as education, physical education exercise physiology and sports. Hatha yoga is physical discipline. Hatha yoga is an Indian philosophical and holy institution regulation intended to bring balance and health to the physical, mental, emotional, and spiritual dimension of the individual.

Hatha Yoga training fundamentally consists of posture—a particular position of the body which contributes to steadiness of body and mind. Pranayama is control the breathing in a superior and extra-ordinary way and meditation. It produces dependable physiological changes and have sound scientific basis. Effect of yogic practices on respiratory function has been a significant area of research for decades. Practicing yoga, in adding together to its contribution in the improvement of pulmonary ventilation and gas exchange, helps in the prevention, cure and rehabilitation of many respiratory illnesses by success better ventilatory function. The studies with Hatha Yoga are timely and scientifically important since it would be an attractive tool against the aforementioned unhealthy lifestyle. It could benefit both healthy and unhealthy adults. Thus, the aim of the present study was evaluate the effects of a 12-week systematized yoga intervention on health-related physical fitness. It was hypothesized that the systematized intervention of Hatha Yoga is sufficient to improve health-related physical fitness components.

Materials and Method
The main purpose of the present study was to find out the relative effect of hatha yoga and aerobic training on body mass index variables among endomorphy type boys. To achieve the purpose of the study, 45 boys will be selected at random from in and around Tirunelveli, Tamil Nadu, India. There were age of the subjects are ranged between 13-17 year. The Selected subjects were divided into three equal groups as follows Hatha Yoga Group (HYG) underwent practice yoga, Aerobic Training Group (ATG) underwent aerobic training and Control Group
The hatha Yoga group consists of 15 subjects who undergone the practice of Asanas and Pranayama. The Aerobic group consists of 15 subjects who undergone rhythmic Aerobic exercises. A qualification criterion for the experimental group was some participation in school level sports and games in order to sustain the training process. Measures: The dimensions be performed during one week prior to and one week after the 14-week hatha yoga intercession. The tests were done under measure of laboratory conditions after amiliarizing the subjects with the testing procedures. Collecting data included age, gender, height, body mass, and body composition, the body mass index (BMI) was calculated using the standardized formula BMI = body mass (kg) / height² (m).

### Results

#### Analysis of Covariance for the Pre Test and Post Test Data on Body Mass Index Score of Aerobic, Hatha Yoga and Control Groups

<table>
<thead>
<tr>
<th>Tests/Groups</th>
<th>AEG</th>
<th>HYPG</th>
<th>CG</th>
<th>SOV</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Squares</th>
<th>“F” Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Test</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>27.3400</td>
<td>27.5800</td>
<td>27.3600</td>
<td>0.853</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.75479</td>
<td>0.24553</td>
<td>0.55266</td>
<td></td>
</tr>
<tr>
<td>Post Test</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>25.8600</td>
<td>26.6400</td>
<td>27.2067</td>
<td>10.74*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.22929</td>
<td>0.38508</td>
<td>0.50493</td>
<td></td>
</tr>
<tr>
<td>Adjusted Post Test</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>25.927</td>
<td>26.521</td>
<td>27.258</td>
<td>14.48*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.331</td>
<td>0.75479</td>
<td>0.50493</td>
<td></td>
</tr>
</tbody>
</table>

Table I shows that the pre-test means in body mass index performance of the AEG, HYPG and the control groups (CG) are 27.3400, 27.5800 and 27.3600 respectively, resulted in an “F” ratio of 0.853, which indicates statistically no significant difference between the pre test means at 0.05 level of confidence. The post test means of body mass index of the AEG, HYPG and the control groups (CG) are 25.8600, 26.6400 and 27.2067 respectively, resulted in an “F” ratio of 10.746, which indicates statistically significant difference between the post test means at 0.05 level of confidence. The adjusted post test means of body mass index of the AEG, HYPG and the control groups (CG) are 25.927, 26.521 and 27.258 respectively. The obtained F-ratio value was 14.480, which was higher than the table value 3.22 with df 2 and 41 required for significance at 0.05 level. It indicates that there was a significant difference among the adjusted posttest means of body mass index performance of the AEG, HYPG and the control groups (CG). The investigated the effect of Aerobic training on Body Mass Index of men. The experimental group was administered aerobic training programme, five days in a week for a period of 8-weeks. Participation in eight weeks of aerobic training resulted in improved in Body Mass Index. The results of the study indicate that there was a significant improvement in all the physiological variables due to the effect of aerobic exercises and hatha yoga practices. Hence, the first hypothesis was completely accepted with respect to the all physiological variables at 0.05 level of confidence. To find out which of the paired means had a significant difference, the Scheffe’s post-hoc test is applied and the results are presented in table II.

Table II shows that the adjusted post-test mean difference in body mass index between AEG and HYPG, AEG and CG and between HYPG and CG are 0.594, 0.737and 1.331 respectively which were statistically significant at 0.05 level of confidence. It is concluded that there was a significant difference on body mass index among the groups. However, Aerobic exercise group was to be found better in improving the body mass index than hatha yoga practice group and control group. The pre test, post test and adjusted post-test mean values of Aerobic exercise training (AEG) group, Hatha yoga practice group (HYPG) and control group (CG) on body mass index are graphically presented in figure I.

### Conclusions

In the present investigation, as a result of two training programmes the following improvements occurred on physiological, of endomarphy type. The Regular practice of aerobic exercises and hatha yoga practices significantly reduced the level of body mass index.

### References


