ISOLATED AND COMBINED EFFECTS OF YOGIC PRACTICES AND AEROBIC EXERCISE ON PASSING AMONG COLLEGE WOMEN BASKETBALL PLAYERS

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Abstract
To achieve the purpose of this study the investigator selected sixty college women Basketball players from affiliated colleges of University of Madras, Chennai, Tamilnadu. The subjects were selected randomly and their age was ranged from 18 to 21 years. They were assigned into four groups of which one group served as yogic practice group, second group served as aerobic exercises group, third group served as combined yogic practices and aerobic exercises group and the fourth group acted as control group. The experimental groups participated their respective training programmes for period of six weeks and the control group was not given any training except of their routine. The selected subjects were measured of their passing by Johnson basketball test before and after the training period of six weeks. The differences between the initial and final scores of Passing were subjected to statistical treatment using Analysis of Covariance (ANCOVA). The results of this study proved that comparing with control group the experimental group’s significantly improved passing. The results further revealed that comparing with other groups combined group significantly Improved passing. It was concluded that combined group was better than Yogic practices group, aerobic exercises group and control group.

Keyword: Yogic practices, Aerobic exercises, passing.

I. INTRODUCTIONS
Yoga is ‘training in the technique of harmony and is a preparation for the total integration of human personality’. It is accepted that the influence of the body is far more profound than that of the mind.

Patanjali states that “the aim of yoga is the complete control or arrest of the fluctuations and modification of the mind” It is a complete process of perfection of man by developing his personalities so that he may reach his ultimate goals, thereby fulfilling the purpose of his birth”. (Yogairaj, 1994).

Aerobic training increases both number of capillaries per muscles fiber and number of capillaries for a given cross sectional area of muscles. Both of these changes improve blood profusion through the muscles, thereby enhancing the exchange of gases, water and nutrients between the blood and muscle fibers.

The effects of doing regular aerobic training are Strengthening the muscles involves in respiration, to facilitate the flow of air in and out of the lungs. Strengthening and enlarging the heart muscle, to improve its function efficiency and
reducing the resting heart rate, known as aerobic conditioning.

Basketball is a team sport which involves two teams of 5 active players each trying to score points against one another by placing a ball through a 10 foot (3.048 m) high hoop (the goal) under organized rules. Points are scored by throwing (shooting) the ball through the basket from above. The team with more points at the end of the game wins.

The ball can be advanced on the court by bouncing it (passing) or passing it between teammates. Disruptive physical contact (foul) is penalized and there are restrictions on how the ball can be handled (violations). Through times, basketball has developed to involve common techniques of shooting, passing, and defensive structures.

II. OBJECTIVES

1. To find out the isolated effect of yogic practice on passing among college women Basketball players.
2. To find out the isolated effect of aerobic exercise on Passing among college Women Basketball players.
3. To find out the combined effect of yogic practice and aerobic exercise on Passing among College women Basketball players.

Methodology

The study was formulated as a true random group design, consisting of pre-test and post-test. The subjects (N=60) were randomly assigned into four equal homogeneous groups of 15 basketball players each. Among the four groups, the control group was strictly under control, without undergoing any specific activity.

The experimental groups were undergone with the experimental treatments. The groups were assigned as Experimental Groups I, II, III and control group respectively. Pre tests were conducted for all the selected subjects on Passing by Johnson basketball test. The experimental groups participated in their respective yogic practice, aerobic exercise, and combined aerobic exercise and yogic practice for a period of six weeks.

The training programme was scheduled at 6.30 a.m. to 7.30 a.m. on all week days except Sundays. The posts were done on the selected dependent variable after six weeks.

Statistical Analysis

The differences between the initial and final test scores on Passing were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not. The Scheffe’s post hoc test was used to find out the paired means significant differences.

Results on passing

The skill performance variable, passing was measured through accuracy test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups were presented in Table –I
Table – I Computation of analysis of Covariance on Passing

<table>
<thead>
<tr>
<th>Test</th>
<th>Yogic practices group</th>
<th>Aerobic exercises group</th>
<th>Combined (yogic practices and aerobic exercises) group</th>
<th>Control group</th>
<th>Source of Variance</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>23.21</td>
<td>22.81</td>
<td>22.72</td>
<td>22.91</td>
<td>Between</td>
<td>2.06</td>
<td>3</td>
<td>0.69</td>
<td>2.29</td>
</tr>
<tr>
<td>STD</td>
<td>0.94</td>
<td>0.26</td>
<td>0.20</td>
<td>0.45</td>
<td>within</td>
<td>16.77</td>
<td>56</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>Post test</td>
<td>29.92</td>
<td>30.56</td>
<td>31.40</td>
<td>23.89</td>
<td>between</td>
<td>527.13</td>
<td>3</td>
<td>175.71</td>
<td>178.47*</td>
</tr>
<tr>
<td>STD</td>
<td>1.35</td>
<td>0.37</td>
<td>0.23</td>
<td>1.38</td>
<td>within</td>
<td>55.13</td>
<td>56</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Adjusted</td>
<td>29.94</td>
<td>30.55</td>
<td>31.39</td>
<td>23.89</td>
<td>between</td>
<td>525.23</td>
<td>3</td>
<td>175.08</td>
<td>174.80*</td>
</tr>
<tr>
<td>Mean gain</td>
<td>6.71</td>
<td>7.74</td>
<td>8.68</td>
<td>0.98</td>
<td>within</td>
<td>55.09</td>
<td>55</td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.

* Significant.

Table I showed the pre test mean scores of skill performance of passing of yogic practices group was 23.21, aerobic exercise group was 22.81, combined (yogic practices and aerobic exercises) groups was 22.72 and control group was 22.91. The post test means showed differences due to experimental training and mean values recorded were 29.92, 30.56, 31.40 and 23.89 respectively. As shown in table I the obtained F value on the scores of pre test means 2.29 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in passing before the training were equal and there was no significant differences. The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 178.47 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group’s adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 174.80 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players. Since the significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe’s Confidence Interval test. The results were presented in table –II.

Table- II Scheffe’s Confidence Interval Test Scores On Passing

<table>
<thead>
<tr>
<th>Control group</th>
<th>Yogic practices group</th>
<th>Aerobic exercises Group</th>
<th>Combined (yogic practices and aerobic exercises) group</th>
<th>Mean Difference</th>
<th>CD at 5% Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.89</td>
<td>29.94</td>
<td>30.55</td>
<td>31.39</td>
<td>6.05*</td>
<td>1.06</td>
</tr>
<tr>
<td>23.89</td>
<td>30.55</td>
<td>31.39</td>
<td>7.50*</td>
<td>6.66*</td>
<td></td>
</tr>
<tr>
<td>29.94</td>
<td>30.55</td>
<td>31.39</td>
<td>0.61</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>29.94</td>
<td>31.39</td>
<td>31.39</td>
<td>1.45*</td>
<td>1.45*</td>
<td></td>
</tr>
<tr>
<td>30.55</td>
<td>31.39</td>
<td>31.39</td>
<td>0.84</td>
<td>0.84</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 0.05 level.
The post hoc analysis of obtained level ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 1.06 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further found that there was no significant differences existed between yogic practices group and aerobic exercises group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Fig -1.

**Figure – 1**

**BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF PASSING**

<table>
<thead>
<tr>
<th>Group</th>
<th>Means Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOGIC PRACTICES GROUP</td>
<td>29.94</td>
</tr>
<tr>
<td>AEROBIC EXERCISES GROUP</td>
<td>30.55</td>
</tr>
<tr>
<td>COMBINED GROUP (YOGIC PRACTICES AND AEROBIC EXERCISES)</td>
<td>31.39</td>
</tr>
<tr>
<td>CONTROL GROUP</td>
<td>23.89</td>
</tr>
</tbody>
</table>

Discussion on the findings of passing

The results presented in table I showed the obtained adjusted means on passing among yogic practices group was 29.94, aerobic exercises group was 30.55 and combined (yogic practices and aerobic exercises) group was 31.39 and followed by control group with a mean value of 23.89. The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.29, 178.47 and 174.80. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group and the differences were significant at 0.05 level. It was found that there was no significant difference existed between yogic practices group and aerobic exercises group and aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined yogic practices and aerobic exercises group had significantly produced better performance followed by aerobic exercises group and then yogic practices group in enhancing passing performance of women basketball players. The findings of the study are in favour of the study undertaken by Singh and Bilaspur (2012), Ahmed and El- Aal (2012) and Raja Singh Rogland (2006).
III. CONCLUSION

It was also concluded that yogic practices group is significantly better than the control group in improving the passing among college women basketball players. It is concluded that aerobic exercises group was significantly better than the control group in improving the passing among college women basketball players. It was also concluded that aerobic exercises group is significantly better than the yogic practices in improving the passing among college women basketball players. It is further concluded that combined (yogic practices and aerobic exercises) groups was significantly better than aerobic exercises group and yogic practices group in improving the passing as measured through Johnson basketball test.

Recommendations

It is recommended that the coaches, physical educationists and sportspersons may include aerobic exercises and yogic practices in their training schedule to improve the fitness and physiological preparations for better performance. It was recommended that people with irrespective of age may practice yoga and aerobic exercise, to enhance their fitness level to lead a healthy life.

IV. REFERENCE


4) Oudejans, Karamat and Stolk(2012), “Effects of Actions Preceding the Jump Shot on Gaze Behavior and Shooting Performance in Elite Female Basketball Players”,
