Effect of Plyometric Exercises for development of Speed among Badminton Players of Khammam District in Telangana

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Abstract
The purpose of the present study to find out the effect of plyometric exercises for the development of speed among Badminton Players. The sample for the present study consists of 20 Male badminton players of Khammam out of which 10 are experimental group and 10 are controlled group. Plyometric exercises such as hopping, bounding, depth jumps, tuck jumps, Pushups etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for six weeks. Pre Test and Post Test were conducted in 30 M Run to measure the speed among experimental group and controlled group. This study shows that due to the plyometric training there is an improvement of experimental group in the Speed and controlled group is decreased in performance of speed. It is concluded that due to plyometric exercises there will be improvement in speed among badminton Players.

Keywords: plyometric exercises, speed, hopping etc.

1. Introduction
Plyometrics, also known as "jump training" or "plyos", are exercises based around having muscles exert maximum force in short intervals of time, with the goal of increasing both speed and power. This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, for example with specialized repeated jumping. Badminton training is similar to conditioning for the other racket sports such as tennis and squash. A simple movement analysis however, reveals a few key differences that will affect the competitive badminton players training regimen. Many shots in badminton are played overhead more so than tennis or squash for example. Badminton players also rely much more on the wrist flexors for generating power compared to tennis players. While this may not lead to a vastly different training program, exercise selection and the percentage of time dedicated to some exercises over others will change.

Plyometric drills involve a quick, powerful movement using a pre-stretch or counter-movement that involves the stretch shortening cycle (1). Classical plyometric exercises include various types of jump training and upper body drills using medicine balls. Plyometrics is a suitable form of power training for many team and individual sports. While many might see it simply as jumping up and down, there are important guidelines and program design protocols that need to be followed if plyometrics is to be as safe and effective as possible.

2. Method
The purpose of the present study to find out the effect of plyometric exercises for the development of speed among badminton players of Khammam District in Telangana. The sample for the present study consists of 20 Male Badminton players of Khammam out of which 10 are experimental group and 10 are controlled group. Plyometric exercises such as Pushups, Medicine Ball Throws, Hopping, Bounding, Tuck Jumps, Box Jumps, dumbbell throws etc were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for six weeks. Pre Test and Post Test were conducted in 30 M Run to measure the speed among experimental group and controlled group.
3. Results
This result of the study shows that due to the plyometric training there is an improvement of experimental group in Speed and controlled group is decreased the performance speed due to the general training.

Table 1: Mean values of 30 M run test between experimental and control groups of Badminton players

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group</th>
<th>Pre Test Mean</th>
<th>Post Test Mean</th>
<th>t</th>
<th>P - Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 M Run</td>
<td>Experimental</td>
<td>4.51</td>
<td>4.20</td>
<td>2.58</td>
<td>0.000</td>
</tr>
<tr>
<td>Test</td>
<td>Control</td>
<td>4.66</td>
<td>4.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Experimental Group of 30 M Run Men is 4.51 in Pre Test and Controlled Group mean is 4.66 in Pre Test. The Experimental Group Mean is 4.20 in Post Test and Controlled Group mean is 4.73, the Experimental Group mean in Post Test in 30 M Run is decreased from 4.51 to 4.20 there is an improvement of 0.31 from Pre Test to Post and Control Group Mean is post test is 4.73 there is an increase of 4.66 to 4.73 from Pre Test to Post, the performance is come down to 0.07 in the controlled group. Due to the Plyometric Training the Experimental group has improved a lot.

4. Conclusion
It is concluded that due to the Plyometric training there is an increase of speed among the badminton players. Badminton is a highly competitive dynamic sport. Badminton players are often required to perform speed, agility, flexibility, endurance, and strength capabilities at their limit. Motion analysis of a typical badminton match reveals that there are many changes in direction and it requires the athlete to be very agile and speed in all directions Plyometrics training is useful for development of speed among the badminton players.

5. Recommendations
Similar Studies can be conducted on Women Badminton Players and other sports and games. The Coaches can prepare the program for development of speed and other motor qualities in Badminton.

6. References
1. Wikipedia, Plyometrics
2. www.sports fitness advisor.com