



## A STUDY OF EFFECTS OF PLYOMETRIC TRAINING ON FEMALE KABADDI PLAYERS

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### ABSTRACT

The present study aimed to discover the effects of plyometric training on female Kabaddi players. This study was conducted on randomly selected 30 female Kabaddi players from Alva's college Moodbidri. Their age ranged from 16 to 25 years. Players practiced Plyometric training for 60 minutes thrice a week for 4 weeks. For data collection standing broad jump and medicine ball throw test was used to measure lower body and upper body explosive strength respectively. Data that was collected from the subject through pre-test and post-test, the collected data was calculated by mean, standard deviation, and t-test. All the statistical analyses were done at the significance level of 0.5. Results are shown by using appropriate figures.

**Keywords:** Plyometric, Kabaddi, standing broad jump, medicine ball throw, etc.

### INTRODUCTION

Sports training is a program of exercise designed to improve the skills and increase the energy capacity of an athlete for a particular event (Stewart Bruce, 2007). The science of sports training is relevant not only in

the performance of sports but also gives equal importance to other areas such as physical fitness, leisure sports, and rehabilitation. In these areas, the training is mainly concerned with the development of fitness, performance, and health. The science of sports training contributes tremendously towards the achievement of aims in the sports arena. The recent trends of the sports sciences indicate that soon the subject matter of sports training will be expanded to its extreme to tackle the tasks of training in all the areas of sports.

### Plyometric training

Plyometric also known as jump training or plyos are an exercise in which muscles exert maximum force in short intervals of time, with the goal of muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. The term plyometric is a combination of Greek roots that means to increase measurement plio- means "more" and metric means "length" Plyo- comes from the Greek word plythein, which means "to increase." Plio is the Greek word for "ore" and metric means "to measure." Plyometrics are primarily used by athletes, especially martial artists, sprinters, and high jumpers, to improve performance, and are used in the fitness field



to a much lesser degree. Plyometrics includes explosive exercises to activate the quick response and elastic properties of the major muscles. It was initially adopted by Soviet Olympians in the 1950s and then sporting worldwide. Sports using Plyometrics include kabaddi, basketball, tennis, badminton, squash, and volleyball as well as the various codes of football. The term "Plyometrics" was coined by Fred Wilt after watching Soviet athletes prepare for their events in track and field. Plyometrics have their roots in Europe, where it was initially termed as jump training. During the early 1970s, the interest in jump training has increased in Eastern countries. East Europeans dominated the world sports arena. The Eastern countries begin 4 to produce superior athletes in track and field, gymnastics, and weight lifting which gave rise to practicing this training method. In 1975 Fred Wilt the American Track and Field coach coined the term Plyometrics. Plyometric rapidly got popular among coaches and athletes as exercises aimed at linking strength with the speed of movement to produce power.

According to Raj Kumar & Harish Kumar et al., (2005) Plyometrics exercises utilize the force of gravity to store energy in the muscles and utilized it immediately in an opposite direction so that the natural elastic properties of the muscles produce kinetic energy. Gambetta, Vern (1988) Plyometric training refers to exercise that enables a muscle to reach maximal strength in a short time as possible. Increases metabolic rate which increases weight loss and heart rate.

## METHODOLOGY

### Selection of the subjects

This study was conducted on randomly selected 30 female Kabaddi players from Alva's college Moodbidri. Their age ranged

from 16 to 24 years, who were participated in various levels of competitions during the academic year of 2019-2020. Players practiced Plyometric training for 60 minutes thrice a week for 4 weeks. The purpose and nature of the study were explained to all participants and consent was obtained. Players interested to participate in training protocol Exclusion Criteria:

- Participants involved in any type of plyometric and strength training before
- Players with any injuries
- Players with a history of any chronic diseases.
- Players with a history of any congenital deformities
- A player with any respiratory complications.

### Selection of the test items

TABLE 1

| S. No | Selection of the test items |                |
|-------|-----------------------------|----------------|
| 1     | Lower body explosive        | Standing broad |
| 2     | Upper body explosive        | Medicine ball  |

Data that was collected from the subject through pre-test and post-test, was calculated by mean, standard deviation, and t-test. All the statistical analyses were done at the significance level of 0.05.



## ANALYSIS AND INTERPRETATION OF THE DATA

TABLE 1  
TABLE 1 REPRESENTING STANDING BROAD JUMP  
BETWEEN PRE AND POST-TEST OF  
FEMALE KABADDI PLAYERS

|                          | Pre test | Post test |
|--------------------------|----------|-----------|
| Mean                     | 1.62     | 1.78      |
| SD                       | 0.215    | 0.291     |
| Standard Error           | 0.040    | 0.053     |
| Confidence Level (95.0%) | 0.115    | 0.235     |
| t- value                 | 4.748    | 1.02      |

Table 1 shows statistical analysis about the comparison between pre-test and post-test in lower body explosive strength of female Kabaddi players. The standing broad jump pre-test mean is 1.62, S D is 0.215, and post-test S D is 0.291, mean is 1.78. The low standard deviation shows that the values tend to be close to the mean. The t value is 4.478; it indicates there is a significant difference in lower body explosive strength after four weeks of plyometric training.

TABLE 2  
TABLE 2 REPRESENTING THE MEDICINE BALL THROWS  
BETWEEN PRE-TEST AND POST-TEST OF FEMALE  
KABADDI PLAYERS

|                          | Pre test | Post test |
|--------------------------|----------|-----------|
| Mean                     | 3.065    | 3.336     |
| SD                       | 0.492    | 0.582     |
| Standard Error           | 0.0898   | 0.1071    |
| Confidence Level (95.0%) | 0.183    | 0.219     |
| t-value                  | 6.988    | 1.02      |

The above table represented the comparison of pre-test and post-test statistical values of upper body explosive strength. The medicine ball throw pre-test

mean is 3.065, S D is 0.492 and post-test mean is 3.336, S D is 0.582. A researcher found 6.988 t-values. It clear that there is significance between pre and post-test upper body explosive strength of Female Kabaddi players.

### DISCUSSION ON HYPOTHESIS

This study aimed at discovers the effects of plyometric training on Female Kabaddi players. After statistical analysis the calculated value is more than the table value, hence the ( $H_0$ ) null hypothesis was rejected and the researcher concludes that there is a significant difference in both upper body and lower body explosive strength after four weeks of training. Female Kabaddi players improve their explosive strength by plyometric training.

### CONCLUSION

This study shows that are individually effective in improving explosive strength, in professional female kabaddi players, which was shown by the pre-test and post-test analysis. However, the test analysis shows that there is an extremely significant difference between the post-test and pre-test parameters, (i.e. standing broad jump and medicine ball throw). Hence, conclude that Plyometric training is more effective in improving lower and upper body Explosive strength in professional female Kabaddi players.

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