



UNIVERSITI TEKNOLOGI MARA

**EFFECT OF PLYOMETRIC TRAINING ON VERTICAL  
JUMPING AMONG UNIVERSITY VOLLEYBALL PLAYERS**

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## **ABSTRACT**

The purpose of this experiment was to assess the effectiveness of Plyometric training program towards vertical jumping ability of university volleyball players. Sargent jump test was done before and after the intervention completed. Total of 10 players was designed to test group ( $n = 5$ ) and control group ( $n = 5$ ) which prescribed. Test group plyometric exercise treatment while control group go along on their routine exercise. The finding of the descriptive statistic indicates the mean and standard deviation result for test group is  $267.26 \text{ sec} \pm 15.25 \text{ sec}$  (pre-test) and  $280.26 \text{ sec} \pm 4.79 \text{ sec}$  (post-test). While, the control group is  $267.73 \text{ sec} \pm 18.13 \text{ sec}$  (pre-test) and  $269.73 \text{ sec} \pm 17.45 \text{ sec}$  (post-test). The paired samples t-test for test group is  $267.26 \text{ sec} \pm 15.25 \text{ sec}$  (pre-test) and  $280.26 \text{ sec} \pm 4.79 \text{ sec}$  (post-test), mean decreases is -13sec. For control group is  $267.73 \text{ sec} \pm 18.13 \text{ sec}$  (pre-test) and  $269.73 \text{ sec} \pm 17.45 \text{ sec}$  (post-test), mean decreases is -2sec. The independent samples t-test examined the differences pre-test and post-test for both group. After the analysis of t-test for both test and control group, there is no significant different for pre-test and post-test. The null hypothesis was accepted with the statistically of  $n (5); t = -.063, p = 0.950; < .05$  and  $n (5); t = 1.30, p = 0.22; < .05$ . It concludes that there were no significant different between pre-test and post-test for test and control group. As a conclusion, plyometric method the drill is aim which to enhance the explosive reaction of players through powerful muscular contraction.

**Keywords:** Vertical jumping ability, plyometric training, Sargent jump,

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of the study

Plyometric training is a series of the explosive body by weight resistance exercises using the stretch-shortening cycle of the muscle fibre to enhance physical capacities such as speed, strength the power. These physiologic will be measures and translate to improved performance in many sports, included the court-based sports, field sports and water sports. The performance enhancements resulting from plyometric training, maximal muscle strength, the power and also the injury prevention measures improved landing mechanics, decreased ground reaction forces and improved hamstring to quadriceps ratios stated by (Booth & Mark 2016).

Volleyball game relies heavily on explosive power leg for attaining maximum height of jumping each individual perform. The plyometric training involved jumping, hopping and bounding exercises as well as throws which performed quickly and explosively. Beside, those movements relate to the development of agility. According to (Silva, 2019), the capability thought to be a reinforcement of motor programming through neuromuscular conditioning, the neural adaptation of muscle spindles, the Golgi tendon organs and joint proprioceptor.

Volleyball player should include plyometric exercise as an essential component of training program. The excellent vertical jump height is a great skill to possess by both offensive and defensive position in volleyball. Furthermore, the ability to jump higher provide better angle and exert better force when doing spiking and help in defending the spiked ball from an opponent. This skill was crucial especially for player who lacks in physical height.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The purpose of this chapter is to do a review from the other past study that has related to this study. This chapter will discuss about the:

- a) Volleyball
- b) Plyometric training
- c) Explosive power
- d) Vertical jumping

From the guideline below, will be stated everything about the past study was mention based on this study and also the function during this research conducted.

#### **2.2 Volleyball**

The volleyball games are one of the world most popular sports nowadays. The game of volleyball was invented by William Morgan, as a teacher at a YMCA in Holyoke, Massachusetts. He says that the combined parts of tennis, baseball, basketball and handball to create the new games to be played indoors by people who wanted less physical contact than basketball. A volleyball games also performed on an area requires the high of speed whole body movements in individual. Some of these are in response to the motion of a ball, opposing players, and also the teammates in games.