



UNIVERSITI TEKNOLOGI MARA

**EFFECTS OF PLYOMETRIC TRAINING ON GRASS SURFACE
VERSUS CONCRETE SURFACE ON JUMPING
PERFORMANCE AMONG VOLLEYBALL ATHLETES**

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ABSTRACT

The purpose of this study was to determine the effect of 4 weeks plyometric training on the grass surface group and the concrete surface group on jumping ability among volleyball athletes. Twelve subjects ($N = 12$) were recruited. The subjects were evaluated in two types of the vertical jump which were squat jump and countermovement jump. The result of this study indicates that 4 weeks intervention showed a significant improvement between pre and post on squat jump and countermovement jump ($p < 0.05$) on both grass surface and concrete surface. However, in comparing the grass surface and concrete surface, there was no significant difference ($p > 0.05$). These findings suggest that 4 weeks of plyometric training on a grass surface and concrete surface improves vertical jump ability; squat jump and countermovement jump among volleyball athletes.

Keywords: Plyometrics, type of surfaces, volleyball athletes

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Volleyball games were popular with an offensive and defensive performance of the players such as attack, block, and serve and jumps are important to perform all of these elements (Jastrzebski, Wnorowski, Mikolajewski, Jaskulska, & Radziminski, 2014). Volleyball was a competitive sport played on many different court surfaces depending on whether it was being conducted indoors or outdoors (Eugenia, Apostolos, Goran, & Maria, 2013).

Plyometric were training techniques used by athletes in all types of sports to increase strength and explosiveness or power (Amrinder, Sakshi, & Jaspal, 2014). Plyometric or jumping exercises were part of resistance training to enhance the jumping abilities of athletes, they were used to bridge the gap between speed and strength exercises to ease the accessing of motor units (Rezaimanesh, Parisa & Soheil, 2011).

The specific jumping abilities required by the different volleyball positions have rarely been studied. There were no significant differences between the playing positions in terms of jumping ability. In volleyball, there were some specific movement patterns associated with jumping, which were a block jump and an attack or spike jump. Squat jump and countermovement jump were important which these two types of jumping require performing defense jump and attack jump (Sattler, Sekulic, Hadzic, Uljevic, & Edvin, 2012).