



UNIVERSITI TEKNOLOGI MARA

**ACUTE EFFECT OF DIFFERENT VOLUME OF DYNAMIC
STRETCHING ON VERTICAL JUMP PERFORMANCE AMONG
UNIVERSITY VOLLEYBALL ATHLETES.**

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ABSTRACT

The objective of this study was to assess the acute effect of different volumes of dynamic stretching on vertical jump performance which are the vertical jump height (cm), power (N) and force (W/kg). Twelve university volleyball male athletes (age $20.6 \pm .515$ years) were separated into two groups which are 6 minutes of dynamic stretching (n=6) group and double volume of dynamic stretching group (12 minutes; n=6). The dynamic stretching has 11 exercises focusing on the hip and thigh muscles. The vertical jump performance was measured by using the force-platform machine which can measure jump height (cm) jump power (N) and jump force (W/kg). Pre-test data were collected during familiarization session and post-test data were collected immediately after the intervention. The results show that there were no significant effects for both groups on the vertical jump height, power and force respectively. There were no significant differences in all the dependent variables between the two groups. However, there is a slight increase on jump height and power in both groups. Only the 12 minutes dynamic stretching group showed an increase result in the jump force. In conclusion, the non-significant effect result could be affected by the insufficient intensity of dynamic stretching program for the athletes.

Keywords: *Volume, Dynamic Stretching, Vertical Jump, Jump Height, Jump Power, Jump Force, Volleyball.*

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Stretching is typically performed before and after we do exercise. Warm-up involving stretching takes an important role to avoid muscle injuries as it increases the flexibility and the elasticity of the muscles, plus smoothing the muscle contractions (Safran, Seaber & Garret Jr, 1989). There are four types of stretching techniques which are static stretching, dynamic stretching, ballistic stretching and proprioceptive neuromuscular facilitation (PNF) stretching.

Dynamic stretching is an activity-specific functional stretching that usually mimics the sport movement to prepare the body for the activity. It focuses on movement patterns which include a combination of muscles, joints and planes of motion. Unlike static stretching, which only focuses on a single group of muscle, joint and plane of motion (Kovacs, 2009). There are 2 types of dynamic stretching which are active and ballistic stretching. Active stretching is a stretching which involves limb movement through its full range of motion to the end ranges and several times of repetition. While, ballistic stretching includes rapid, alternate movements or 'bouncing' at the end range of motion and it is not recommended anymore due to high risk of injury (Whaley, Brubaker, Otto & Armstrong, 2006).

Volleyball is a sport which includes jumping as the athletes have to jump to block the opponents' attack and jumping spike the ball to get a point. So, stretching is

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter covers the studies that are related to the recent study. To gain information in this chapter, the title of the recent study must be breakdown into various variables. Based on the title of the recent study which is “Acute Effect of Different Volume of Dynamic Stretching on Jump Performance Among University Volleyball Athletes”, the variables that were included in this chapter are volleyball sports, dynamic stretching, vertical jump, power and force. Therefore, these variables will be explained in terms of definition and past studies. Furthermore, it is also including some past studies that show some similarities and differences with the recent study as example, the method of the test, the status of the subjects and etc. Hopefully, this information might give benefit to the future study.

2.2 VOLLEYBALL SPORT

Volleyball sport is one of the most well-known team sports in the world which consists of 12 players in a team in the following positions: opposite hitter, middle hitter, libero, setter and receiver. This sport consists of short, explosive actions, fast, agile positioning, jumping and blocking. Although this sport may last up to 3 hours match duration, it is still considered as an anaerobic sport, with mainly used phosphagen energy prosses (Kunstlinger, Ludwig, & Stegemann, 1987). Other than