

UNIVERSITI TEKNOLOGI MARA

**SINGLE SET VERSUS TWO SETS OF
RESISTANCE TRAINING ON MUSCULAR
ENDURANCE, STRENGTH, FAT PERCENTAGES
AND BLOOD PRESSURE AMONG
RECREATIONALLY TRAINED MEN**

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Dissertation submitted in partial fulfillment of the requirements

for the degree of

Master of Sports Science

Faculty of Sports Science and Recreation

December 2013

ACKNOWLEDGEMENT

First of all, I would like to thank Allah the Al-Mighty who has given me the strength, courage, and motivation to accomplish these piece of work. Besides, I would like to thank and gratitude to Professor Madya Zulkifli Abd Kadir as my supervisor in his guidance and full supports throughout in finishing this research paper no matter how busy he was. Without his guidance, patience and understanding, I would never have done these pieces of work.

I would also want to thank to all lecturer of Faculty of Sport Science and Recreation, UiTM Shah Alam for their time in giving me the explanations and guidance in finishing this research.

Last but not least, thanks to my lovely family especially my mother, Puan Zaruna bt Abd Rahman and my father, Adnan b Hj Abu Bakar who always gave me all their supports in any situations. Not forgotten to all postgraduate students of Sport Science Faculty, UiTM Shah Alam who have helped me in finishing this research. I appreciated all of the help towards the completion of this study.

ABSTRACT

Several design program variables are very important in resistance training. Until now, the comparison of the effectiveness of one versus two sets or multiple sets of resistance training on trained population were still inconclusive. This study were conducted to compare the effects of one versus two sets resistance training on upper and lower body muscular strength, upper and lower body muscular endurance, body fat percentages and blood pressure among recreationally trained men. A total of 32 trained men were recruited in this study. They had been randomized into two groups (one set, n =16 or two set, n = 16) based on their body weight. The muscular strength were measured by bench press and squat using multiple-RM assessment. Muscular endurance had been measured by push up and 70% 1RM on leg extension while body fat percentages were measured using 8-sites skinfolds measurement. Both groups engaged in six weeks of training. Significant improvement was noted throughout 6 weeks of training for both groups in all variables, ($p < 0.05$), except for blood pressure ($p > 0.05$). No significant differences between single set and two sets were found for all the variables ($p > 0.05$) except for leg extension muscular endurance test between both groups, ($p < 0.05$). In conclusion, single set had been found to produce similar effects as two sets on muscular strength, upper body muscular endurance, fat percentages and blood pressure among trained men.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Weight training or resistance training has now been considered as an important aspect of a larger training routine with the objective of increasing muscle strength, muscular endurance and lowering body fat (Geliebter, Maher, Gerace, Gutin, Heymsfield, & Hashim, 1997). In addition to increasing the strength and endurance of muscles, reducing body fat and thus reducing the risk of obesity, strength training can bring a wide variety of positive advantages which can also improve both mental and physical health (Wescott, 2009). Endurance training on the other hand is beneficial as it can reduce blood pressure when the body is at rest, increase the utilization of blood glucose, increase bone mineral density and improve blood lipid profile (Harris & Holly, 1987; and Nelson, Fiantarone, Morganti, Trice, Greenberg, Evans, 1994). According to Fisher, Steele, Bruce-Low & Smith, (2011), one of the best alternatives to achieve great improvement in muscular strength was by doing resistance training.

Muscular strength can be defined as the ability to exert the maximum force to overcome the most resistance in one effort by a muscle or a muscle group (McArdle, & Katch, 2010). Meanwhile, Kraemer, (1987) defined strength as the maximum effort or force that can be generated by muscle or a group of muscles at a specified velocity. The main objective of undertaking an assessment of the muscular strength is to determine the most efficient and beneficial training programs that could be conducted for athletes of a particular sport such as football, basketball, weight lifting, and other numerous disciplines. Different sport requires different strength from different parts of the body hence targeting the right or specific muscle or group of muscles will assist an athlete to reach and maintain peak performance in his particular discipline. This will also assist in the process of recovery in the event of an injury as the right balance of weight or resistance training can be identified to assist gradual building up muscular strength.