UNIVERSITI TEKNOLOGI MARA

SINGLE VERSUS THREE SETS RESISTANCE TRAINING ON STRENGTH, POWER AND HORMONAL RESPONSES AMONG UNTRAINED MEN

ALI BIN MD NADZALAN

Dissertation submitted in fulfilment

of the requirements for the degree of

Master of Sports Science

Faculty of Sports Science and Recreation

December 2013

Author's declaration

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This dissertation has not been suited to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, UiTM, regulating the conduct of my study and research.

Name of Student: Ali Bin Md Nadzalan

Student I.D. : 2012250396

Programme: Master of Sports Science

Faculty: Faculty of Sports Science and Recreation

Dissertation Title: Single versus Three Sets Resistance Training on Muscular Strength, Power and Hormonal Responses among Untrained Men

Signature of student: ....

Date: December 2013

ABSTRACT

The optimal number of sets in resistance training for specific exercises has been of the most debated issue among the practitioners and researchers. The purpose of this study was to compare the effects of single versus three sets on muscular strength, muscular power and the selected physiological responses among untrained men. 36 untrained men were recruited in this study. Participants were randomized into 3 groups; single set (n = 12), three set (n = 12) and control group (n = 12). Muscular strength was measured by bench press and squat performance. Static strength was measured by handgrip strength test and muscular power by the vertical jump test. Serum testosterone, cortisol, alanine aminotransferase (ALT), and creatine kinase (CK) concentrations were measured before, during the third weeks and after the six weeks training program. The intervention groups were engaged in six weeks of training three times per week. Common exercises were performed to the point of achieving muscular failure for every set. Significant improvement were recorded in muscular strength and muscular performances, ($p < 0.05$) for both the single and three set group but no significant differences were found between both the intervention groups ($p > 0.05$). Both the single set and three set resistance training had shown significant increment of testosterone, CK and ALT ($p < 0.05$), but no significance difference were found between these two groups ($p > 0.05$). No significant changes were found to the cortisol level. In conclusion, single set resistance training had shown similar effects on muscular strength, muscular power, testosterone, cortisol, creatine kinase and ALT among untrained men.

TABLE OF CONTENTS