

UNIVERSITI TEKNOLOGI MARA

**KNOWLEDGE, ATTITUDE AND
PRACTICE ON NUTRITION, BODY
IMAGE, AND VISUOSPATIAL TEST
PERFORMANCE OF SELF-
ADMINISTERED ANABOLIC
ANDROGENIC STEROID AMONG
MALE BODYBUILDERS**

MOHD NUR IKHWAN BIN SHAFIEE

MSc

October 2017

ABSTRACT

The anabolic androgenic steroid (AAS) is a hormonal derivative including testosterone. The substances are used by the athletes to enhance performance and appearance either legally or illegally. There are many studies had been done on the physiological and psychological effects of AAS administration. This present study would measure the effects of AAS intakes of knowledge, attitude and practice (KAP) on nutrition, body image dissatisfaction and visuospatial test performance. Participants were recruited from eight Gymnasium Rakyat 1 Malaysia in Selangor. 14 participants voluntarily participate in this study consisted of seven AAS users (AASU) and seven non-AAS users (NAAS). Self-administered KAP questionnaire which contained information about nutrients, food groups, diet and 24 hours food diary were completed by participants. Adonis Complex Questionnaire (MRT) and Mental Rotation Test (MRT) also completed by participants for measuring body image dissatisfaction and visuospatial ability respectively. Independent t-test found significant difference in total caloric intake ($p= 0.024$), body image ($p= 0.048$), MRT ($p= 0.039$), protein intake from supplements ($p= 0.002$) and fat intake ($p= 0.014$). However, there was no significant difference was found on other variables. The most consumable supplements were protein powder (100%), followed by amino acid (78.5%) and vitamins (71%). The findings would contribute to the body of knowledge especially on the AAS abuse in this country. Findings also suggested the need for AAS awareness campaign and nutrition education among the bodybuilders in Malaysia. Small sample sizes may limit the generalisation of the results of this study. More participants should be included in future research especially among AAS users.

ACKNOWLEDGEMENT

Firstly, I would like say Alhamdulillah (Thank you Allah) for giving me a chance of surviving as a postgraduate student. This Master's thesis was dedicated to my parents, Shafiee Yahya and Salmah Ramli.

I also wish to express my sincere thanks to Dr Hj Razali Mohamed Salleh and Puan Wahidah Tumijan for their guidance, patience and motivation.

I place on record, my sincere thank you to my wife, Halimatun Saadiah Rosle for the continuous encouragement.

I am also grateful to all lecturers in Faculty of Sports Science and Recreation (FSR), my friends for their sharing of expertise, time and valuable guidance throughout the journey as a postgraduate student.

Finally, I would like to thank all participants in this study for their commitment during and after data collection process.

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF SYMBOLS	xii
LIST OF ABBREVIATIONS	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Research Objectives	5
1.4 Research Hypothesis	6
1.5 Significance of Study	6
1.6 Limitation of the Study	7
1.7 Delimitation of Study	8
1.8 Assumptions of Study	9
1.9 Definition of Terms	9
1.10 Summary	9
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 History of Bodybuilding	11
2.2.1 Benefits of Bodybuilding	13
2.3 Knowledge, Attitude and Practice on Nutrition	14
2.3.1 Knowledge on Nutrition	15

CHAPTER ONE

INTRODUCTION

1.1 Research Background

Bodybuilding can be considered as a way of life that required a lot self-control in order to reach the optimum performance which included patience, good exercise programme, suitable rest and appropriate nutrition (Vinturis, 2009). However, the risk of developing substance abused, such as AAS and eating disordered among the bodybuilders might posed the bodybuilders to health risk (Byrne & McLean, 2001; Leifman, Rehnman, Sjöblom, & Holgersson, 2011).

In order to meet the nutritional goal, bodybuilders usually would control the dietary intake including by consuming various types of products containing protein, creatine and ephedra (Skårberg, Nyberg, & Engström, 2008a). The self-prescribed dietary supplements intake may burdened the digestive system of the bodybuilder and most of the bodybuilders consumed dietary supplements, plan their diet without any guidance from qualified nutritionist or doctor (Guardia, Cavallaro, & Cena, 2015; Kathryn & Balone, 2010). This may lead to over or below recommendation consumption of nutrients including carbohydrates, fat or protein (Martin, Armstrong, & Rodriguez, 2005).

Many nutritionist agreed that a balance diet should include variety of foods in moderate quantity to avoid nutrients deficiency among general population (Apong, 2013). On the other hand, the athletes or physically active individual including bodybuilder need extra nutrients to enhance performance and recovery process after training. Additional macronutrient like protein was necessary to enhance muscle growth by maintaining positive nitrogen balance as practiced by the bodybuilders (Helms, Zinn, Rowlands, & Brown, 2014). This was a very important issue since the group of peoples who have greater importance to nutrition may be more vulnerable to be influenced by incomplete and inaccurate nutrition information (Vega & Jackson, 1996).

The influenced of media, action figure and hypermesomorphic somatype portrayed as the ideal masculine appearance, many men involved weight training or