UNIVERSITI TEKNOLOGI MARA

FOOD SECURITY STATUS AND BODY CHEMICAL CHANGES AMONG YOUNG ADULTS

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ABSTRACT

Food insecurity, the inability to have sufficient, safe and nutritious food for an active and healthy life, was found to be closely associated with adverse health outcomes. This study was carried out to determine lipid profile (TC, TG, HDL, and LDL), inflammatory marker (hs-CRP), molecular changes on gene expression of peroxisome proliferator-activated receptor gamma (PPAR-y) and endothelial dysfunction (sE-Selectin) with food security status, especially among young adults. A cross-sectional comparative study among participants between 18 to 25 years old (n=124) who were selected through the Adults Food Security Survey Module (AFSSM) and participated in blood draw procedures. Well-established blood markers of lipid profile and inflammatory marker were measured. Percentage of food secure individuals (56.5%) was slightly higher than food insecure (43.5%). An independent-samples t-test was conducted to compare the food security status on the all parameters. Mean of hs-CRP (0.660±0.473 mg/L) was higher in food secure group, with all other variables showed higher measurements among the food insecure groups, while TC (5.087±0.647 mmol/L), HDL (1.800±0.299 mmol/L) and LDL (2.956±0.573 mmol/L)}, relative normalized expression (RNE) of PPAR-y (1.188), and sE-selectin (3867.28±793.34 pg/mL) were high for food insecure respectively. However, no significant association (p>0.05) was found between all parameter except sE-selectin. In conclusion, this study showed that food insecurity experienced was influenced body chemical, physical and molecular changes. Regardless, current data provides knowledge and understanding of food insecurity experienced by young adults in a university campus and may help them in making nutritious food choices and be appreciative and aware of the risk of chronic illnesses which should have started at a young age.

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CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND OF STUDY

1.1.1   Food Security Status

Food security is a flexible concept that has seen various attempt in past research in defining it. Scientifically, food security status is a term applied to distinguish whether or not people have access to appropriate quality and quantity of nutrients needed to ensure a healthy life. Between the 1960s and 1970s, the term food security was coined on international literature. Over time, several definitions of food security were proposed by various sources to capture the true meaning behind the term. Nonetheless, this term reflects a wide range of food-related issues and the complexity of the function of food in human society which was further developed and expanded to reflect the concept of food security commonly used today. The statement of Human Rights (1948) acknowledged that everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food (Norhasmah, Zalilah, & Asnarulkhadi, 2010). Food security status could be classified into three categories, namely, food security, food insecurity without hunger and food insecurity with hunger. The term food security is applied when individuals show no evidence of food insecurity and dietary preferences were consistently met. Meanwhile, food insecurity without hunger is said to exist when the regular consumption of food occurs, but anxiety or uncertainty over access to a sufficient quality or quantity of food. Overconsumption of calorie dense food as opposed to nutrient dense food which will then increase the risk of diseases. Food insecurity with hunger, on the other hand, is used to define instances when meals are overlooked or insufficient, with hunger and possibly malnutrition being the direct outcomes (Bickel, Nord, Price, Hamilton, & Cook, 2000; Derrickson & Brown, 2002; Rosier, 2011).

Mohamadpour, Sharif, & Keysami, (2012) stated that food insecurity is able to directly or indirectly affect human health based on the nutritional status of either undernutrition or overnutrition. Lower intake of macronutrients and micronutrients,