

THE DETERMINATION OF SERUM MICRONUTRIENT, LIPID PROFILE,
INFLAMMATORY AND IMMUNOLOGICAL MARKERS AMONG FOOD
SECURE AND INSECURE YOUNG ADULTS.

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ABSTRACT

Food insecurity which refers to the inability to have sufficient, safe and nutritious food for an active and healthy life has been an alarming issue worldwide. Food insecurity was found to be closely associated with adverse health outcomes. However, there are limited studies done which explains on the inflammatory events among food secure and insecure individual especially in young adults. The determination of inflammatory related disease indicators which includes serum micronutrient, lipid profile, inflammatory and immunological markers among those groups was therefore studied. A comparative cross-sectional study was designed to the UiTM Puncak Alam students that represent studied participants in the range of aged 18 to 25 years old (n=150). All reference participants were selected through the Adults Food Security Survey Module (AFSSM) after all the inclusion criteria were met in this study. Then, the blood samples obtained and analysed. The differences of these four parameters between food secure and insecure groups as well as gender were compared by using independent t-test. There were inconsistent results as well as the absence of any significant differences in the parameter level (folate, vitamin B12, total cholesterol, triglycerides, HDL-C, LDL-C, hs-CRP and white blood cell count) being identified between both food secure and insecure groups. However, some of the parameters tested that act as harmful indicators towards disease (cholesterol, LDL-C) were recorded higher levels in food insecure participants. Meanwhile, food secure participants had higher levels in the indicator that may avoid diseases (vitamin B12). These results were contradicted with the levels of triglycerides, hs-CRP and white blood cell count (WBC) as most of these parameters were found to be higher in food secure participants while for folate, it was found higher in food insecure participants. In conclusion, these data showed that the food insecure young adults still have high risk in experiencing the inflammatory events.

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CHAPTER I

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The past half-century has shown that there is a dramatic reduction in the proportion of world's people that are hungry even though the number of total population is doubled compared before. This phenomenon is believed to happen due to the increased growth in food production that enables the world population to obtain food sufficiently. Despite the fact the number of people that experience hunger generally was reduced, Godfray et al. (2010) states that at the present time, there are more than one in seven people who are still unable to access protein and energy adequately from their diet, and even further may have problem in terms of micronutrient malnourishment. Even in high-income countries, the government had always prioritize and been more concern on the problem of obesity and over nutrition as it can be seen that the huge resources are mostly spent on it in order to attenuate the problem despite the fact that many people in the countries still unable to consume nutritious food adequately (Gorton, Bullen, & Mhurchu, 2010).

As been agreed among the various definitions currently in use upon at the 1996 World Food Summit, food security can be broadly defined as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Barrett, 2010, p. 825). With this definition, it can be acknowledged the need to have the physical or financial resources to obtain sufficient good-quality food so that the nutritional needs on a consistent and sustainable basis can be met. There are three pillars commonly related with food security which is availability, access, and