

Research Article

Gender and Racial Differences in the Cardiovascular Risk Factors among Overweight and Obese Rural Adults, Kuching and Samarahan Division, Sarawak, Malaysia

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Objective. This study aimed to determine whether gender and ethnic differences had an effect on cardiovascular risk factors in overweight and obese rural adults in Sarawak. **Design and Setting.** This was a cross-sectional study conducted in rural communities in Kuching and Samarahan division, Malaysia. Data was obtained using a set of questionnaire (sociodemographic data and physical activity), measurement of blood pressure, height, weight (body mass index, BMI), body fat percentage, fasting blood sugar, and lipid profile from three ethnic groups—Iban, Malay, and Bidayuh. Analysis of data was done using SPSS version 23.0. **Results.** A total of 155 respondents participated in the study (81.6% response rate). The levels of physical activity, BMI status, body fat, hypercholesterolemia, and hyperglycemia were similar across the three ethnic groups and both females and males. Iban and Bidayuh had significant higher Atherogenic Index of Plasma (AIP) when compared to the Malay (Bidayuh OR = 0.30, 95% CI 0.12, 0.78; Iban OR = 0.29, 95% CI 0.12, 0.69). **Conclusions.** The relationship between cardiovascular risk factors varied according to ethnic groups and gender. A better understanding of these differences would help in the design and implementation of intervention programme for the prevention of cardiovascular disease.

1. Introduction

World Health Organization estimated that 17.5 million of people die from cardiovascular diseases (CVD) each year constituting 31% of all deaths worldwide. Among the CVD deaths, more than three quarters are from low-income and middle-income countries [1]. The risk factors of CVD have not changed much over the years. The evolution of treatment modalities and the intense public health preventive efforts has reduced the influence of smoking, untreated hypertension, and hypercholesterolaemia. However, sedentary lifestyle and overconsumption of processed and energy dense food products of poor nutritional values are on the increasing trend [2].

Although past studies have reported the role of obesity in the occurrence of CVD, recent studies have focused on

body fat itself which give more distinct impact on CVD [2]. However, the relationship between body fat and the CVD risk factors is complicated by the dynamic influence and the mediating roles of the lipid parameters—triglycerides, HDL, and LDL [3].

Malaysia, with its rapid urbanization and changing lifestyle, is facing an increase in noncommunicable diseases (NCD) which resulted in the rise of mortality due to CVD from 15.7% in 1996 to 25.4% in 2006 [4, 5]. A study in a rural community in Sarawak among three major ethnic groups (Malay, Bidayuh, and Iban) reported the prevalence of overweight and obesity to be 39.6% and 11.9%, respectively. It further reported that, overall, 13% had hypertension and 1.5% had unhealthy random blood sugar reading above the national guideline level of 11.1 mmol/L [6].