Using Anthropometric Indicator to Identify Hypertension in Adolescents: A Study in Sarawak, Malaysia

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1. Introduction

Adolescent obesity has become a growing health concern, an epidemic that affects both developing and developed countries [1]. The prevalence has reached to the level that warrant an immediate attention on the primary and secondary prevention of overweight and obesity in children and adolescents. It is during the childhood and adolescents period where they develop their eating and activity pattern that can affect their lifestyle in adulthood. With the current nutritional transition that involved availability of fast foods, soft drinks, sedentary lifestyle, physical inactivity, and increase use of technology related gadgets, many adolescents aged 10-19 years were found to be less active and eat more, resulting with increase of body mass index (BMI) and fat [2]. Such unhealthy trends contributed to the increase of comorbidities such as elevated body cholesterol, type 2 diabetes mellitus, and hypertension [3].

There were many studies that linked hypertension with overweight and obese among the adolescents. Although the evidences gathered have a mixed conclusion on the relationship between hypertension and body fat [4], measurement of body fat using anthropometric indicators had proven to be an effective approach in predicting hypertension, particularly in a large population and community-based studies [5]. Beside the use of BMI in assessing nutritional status, other indicators such as waist circumference (WC), waist-height ratio (WHtR), and conicity index (C index) were other common assessment tools where WC measures the overall body fat, WHtR assess the proportion of central fat by height, and C index measures the abdominal fat.

It is not a common practice to screen for hypertension among adolescents in the community routinely. However, detection of high blood pressure plays an important role in control and prevention of hypertension. However, young people are less likely than older adults to be aware of their risk for hypertension and screen for hypertension on their own. Perhaps one of the reasons is that they may think themselves as invincible and unlikely to be at risk for chronic diseases such as hypertension [6]. Provision of healthcare to...