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Dietary intake, physical activity level, body composition and muscle strength from a Malaysian adolescents cohort study

Hazreen Abdul Majid
University of Malaya, Malaysia

Background: The increased prevalence of obesity, unhealthy eating habits and sedentary lifestyle among Malaysian adolescents has become a public health concern. A cohort study was conducted among adolescents (aged 13-years) attending 15 public secondary schools from the Central (Kuala Lumpur and Selangor) and Northern (Perak) Regions of Peninsular Malaysia.

Methods: This study is to identify the trends of self-reported physical activity (PA) levels, dietary intake, body composition and muscle strength. The self-reported PA was assessed using a validated Malay version of the PA Questionnaire for Older Children (PAQ-C). Fasting blood samples were collected to investigate their lipid profiles. Anthropometrical measurements which include height, weight, waist, hip circumferences, hand grip and body fat percentage were all measured using calibrated scale. The 7-day diet histories of habitual food intake were conducted by qualified dietitians and nutritionists. The data were collected in 2012, 2014 and 2016 respectively.

Results: From the baseline data, it appears that obese adolescents in rural schools consumed more energy and sugar (1987.6 ± 374.0 kcal/d and 48.9 ± 23.0 g/d) (p-value <0.001). A downward trend in the PA level was seen in all categories with a significant reduction among all rural adolescents (P = 0.013) and more specifically, PA among girls residing in rural areas dropped significantly (P = 0.006). After controlling for ethnicity, place of residency and body mass index (BMI), there was a positive relationship between hand grip strength and the intake of energy at the age of 15 years old.

Conclusion: Adolescents appears to be less active generally as they are growing but female living in rural areas experienced more body fat increment with the reduction of physical activity. A structured intervention study for the adolescents is needed for better health.

e: hazreen@ummc.edu.my

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