

Relationship between glucose level, lipid profiles, and waist to height ratio (WHtR)

ABSTRACT

A cross sectional study was carried out to determine the relationship between glucose level, lipid profiles, and waist to height ratio (WHtR) among adults in a workplace setting. Respondents were recruited from government staff in two ministries, each from the federal territories of Kuala Lumpur and Putrajaya, Malaysia. Socio-demographic information was collected using a set of questionnaire and anthropometric measurement including weight, height, percent body fat, and waist and hip circumference were measured. Anthropometric assessments were measured and blood sample was collected in the morning before 10 AM, after the respondents undergone 12 hours of overnight fasting. A fingerpick blood sample was collected to measure blood glucose and lipid profiles. A total of 210 respondents were recruited for this study. The majority of the respondents (81.9%) were aged 34 years and younger. Approximately 16.8% were obese and 25.1% overweight. Based on WHtR, 47.1% of the respondents were classified as having $WHtR \geq 0.5$. Based on odds ratio, having a high WHtR (≥ 0.5) was found to be related to increased risk of having high BMI (OR=18.125; 95% CI 8.583-38.276), high triglyceride (OR=6.202; 95% CI 2.517-15.281), elevated blood pressure (systolic OR=4.351; 95% CI 2.026-9.344, diastolic OR=4.932; 95% CI 1.571-15.484), high blood glucose (OR=3.084; 95% CI 1.186-7.831) and low HDLC (OR=3.506; 95% CI 1.862-6.600). For the subjects of this study, WHtR was found to be significantly related to lipid profile and blood glucose level.

Keyword: WHtR; Lipid profile; Glucose; Odds ratio