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The importance of waist circumference and body mass index in relationships with risk of cardiovascular disease in Vietnam

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Introduction & Aim: Waist circumference (WC) is an indicator of intra-abdominal adipose tissue, high levels of which confer an increased risk of cardiometabolic disease. Population data on WC should be more informative than data on body mass index (BMI), which is a general indicator of body size. This study aims to evaluate the importance of WC relative to BMI in cross-sectional relationships with blood pressure (BP), glucose and total cholesterol (TC) in the adult population of Vietnam.

Methods: The data were collected in a population-based survey conducted during 2009-10 using the "WHO STEPwise approach to surveillance of risk factors for non-communicable disease" (STEPS) methodology. The survey participants (n=14,706 aged 25 to 64 years) were selected by using multistage stratified cluster sampling from eight provinces representative of the eight geographical regions of Vietnam. All measurements were performed in accordance with the STEPS protocols. All analyses were performed using complex survey methods.

Results: For men, stronger associations with BP, glucose and TC were found for WC or an index based on WC than for weight or BMI and adjusting each for the other greatly diminished the coefficient of BMI relative to the coefficient of WC. For women, this was true for glucose but BMI was more important for BP and TC. WC or an index based on WC provided better discrimination than BMI of hypertension, elevated glucose and raised TC. Information on four new anthropometric indices did not improve model fit or subject discrimination.

Conclusion: For these outcomes, WC was more informative than BMI for Vietnamese men, but both WC and BMI were important for Vietnamese women. Both WC and BMI need to be assessed in prediction of CVD risk in Vietnam.

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