

Objective: Anthropometric indices are valid proxies for predicting the risk of metabolic and cardiovascular diseases across age groups and gender. The objective of the present work was to study some anthropometric measures of body mass and adiposity in male Nigerian adolescents. **Methods:** In a population of male Nigerian adolescents (n=400; age: 13-19 years), data was collected for standing height, body weight and circumferences (hip, waist, neck, and mid-upper arm); and the body mass index (BMI), waist to hip ratio (WHpR) and waist to height ratio (WHtR) were then calculated. Moreover, using Pearson's correlation coefficient, we studied the association between BMI and other anthropometric variables. **Results:** Average BMI was 18.38 kg/m for adolescent males aged 13-15 years (n=217), and 19.03 kg/m for males aged 16-19 years (n=183). In the former category (13-15 years), BMI as a measure of body mass was best positively and significantly associated with the mid-upper arm circumference (MUAC) ($r=0.673$, $p<0.01$), while in the older adolescent males (16-19 years), BMI strongly and significantly associates with hip circumference (HC). **Conclusion:** Findings in the present study indicate that in adolescent male Nigerians, MUAC best serves as an alternative to BMI in early adolescence (13-15 years); while HC is the best proxy for BMI, and may be a substitute for this anthropometric index in predicting cardiometabolic risk in older adolescent male Nigerians (16-19 years). It is recommended that age- and sex-specific cut off values for MUAC and neck circumference (NC) be determined among adolescents of different nationals. Moreover, it is pertinent to characterize the associate between MUAC and the risk factors for metabolic and cardiovascular diseases in specific subpopulations.