SUMMARY

Background

This study determined the relationship of body mass index (BMI) and waist-to-hip ratio (WHR) measurements with blood pressure in young adult patients attending the general outpatient clinic of Federal Medical Centre (FMC) Owerri. The study is intended to create awareness on the burden of non-communicable disease in this locality. Body mass index and waist to hip ratio were used in this present study to determine obesity for two main reasons. Firstly, due to simplicity and reproducibility of height, weight, hip and waist circumference measurements; secondly because both have been recognized as important indicators for estimating cardiovascular disease risk factors, in particular, their association with hypertension.

Patient and Methodology

A hospital based descriptive cross sectional study was carried out with a structured questionnaires administered on 482 eligible consenting young adult patients (16 to 40 years) attending the general outpatient clinic of FMC, Owerri between January and March 2011. Body mass index (BMI) was calculated as body weight (BW) in kilograms (kg) divided by the square of the body height (BH) in meter (m^2), while central obesity was calculated and defined on the basis of waist-to-hip ratio (WHR). The cut-off value of central obesity was considered >0.90 in males, normal value for females was <0.80. Blood pressure measurements were taken. The Seventh Report of Joint National
Committee on Prevention, Detection, Evaluation and Treatment of High blood pressure (JNC-VII) criteria was used for classification.

**Results:**

Two hundred and ninety four females (61%) and 188 males (39%) participated in the study.

The mean age, BMI, WHR, systolic and diastolic blood pressure of all the participants were 25±5.5 years, 22.7±3.5kg/m$^2$, 0.82±0.04, 116.34±13.33mmHg and 75.90±9.90mmHg, respectively. The prevalence of hypertension was 12.7 % (61 out of 482). Based on BMI classification, the prevalence of obesity was 3.7 percent (n = 18 out of 482), the prevalence was higher in females (n = 14, 4.7%) than in males (n = 4, 2.1%). Obesity status based on Waist-to-hip ratio (WHR) revealed an obesity prevalence of 39.4 percent (n = 190) with females having a higher prevalence (n = 174, 59.2%), than males (n = 16, 8.5%). BMI was found to correlate better than WHR with blood pressure (BP).

**CONCLUSION**

The prevalence of high blood pressure in the study population was 12.7%. The prevalence of obesity using body mass index was 3.7%. Assessment of obesity status using waist-to-hip ratio gave a prevalence of 39.4%. Body mass index had a strong linear relationship with diastolic blood pressure and correlated better than waist-to-hip ratio in predicting hypertension risk in the study population.

This study highlights the importance of Family physicians making a diagnosis of Overweight and Obesity especially in young adults, by measuring their body mass index.
Hence, counseling them on the need for weight reduction and maintenance of healthy weights and lifestyle pattern. Young people should also have their BP checked. This is a primary preventive measure targeted at the young adults. Studies are needed in this age group to determine which anthropometric measurement is a better predictor of hypertensive risk in the other geo-political regions of this country.