Body Mass Index Measure Of Young Adult Nigerians Residents In The Calabar Metropolis

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Citation

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Abstract

This study assessed the health status of young adult Nigerians resident in Calabar Metropolis in Cross River State of Nigeria. A total of one thousand (1,000) subjects made up of five hundred (500) males and females each were subjected to measurement of height and weight with their consent. Their mean ages were 25.34±0.10 and 23.31±0.12 for males and females respectively and their body mass indices (BMI) were calculated. The males had significantly (p<.001) higher height and weight (170.83±0.24, 68.01±0.24 respectively) with BMI of 23.33±0.08kg/m2 compared to the females (162.44±0.26, 60.5±0.34 respectively) and BMI of 22.96±0.13kg/m2. The BMI were within the World Health Organization's standard for normal health. Thus in conclusion, young adult Nigerians resident in Calabar Metropolis are healthy.

INTRODUCTION

Anthropometric measures used in determining the state of well-being vary and usually predicts near to precise health state of the body [1,2]. Height and weight have been in use in the determination of individual's well being and onset of diseased condition [3,4,5,6].

Using height and weight alone in the assessment of the state of well-being of individuals have resulted in conflicting reports [4,5]. The use of their index, the body mass index (BMI) is usually more predictive and accurate [1,3,7].

BMI is defined as an individual's body weight divided by the square of their height. It is generally used as a means of correlation between groups related by general mass and can serve as a vague means of estimating adiposity [8]. BMI is suitable for recognizing trends within sedentary or overweight individuals because there is a smaller margin for errors [8].

Thus we used BMI in this study to ascertain the health status of young adult Nigerians resident in Calabar Metropolis in Cross River State of Nigeria.

MATERIALS AND METHODS

A total of one thousand (1,000) subjects made up of five hundred (500) males and females each were used for this study. The subjects were young adult Nigerians with mean ages 25.34±0.10 and 23.31±0.12 for males and females respectively. This study was limited to Nigerians resident in Calabar Metropolis in Cross River State of Nigeria. Their consents were duly obtained after the explanation of the objective of the study to them.

All measurements were taken in the morning hours before breakfast since individuals are more relaxed during this period [9], with the subjects wearing light clothing. The measurements were done repeatedly and the means taken to ensure accuracy and precision, and the error in measurements were calculated depending on the thickness of the clothing materials.

MEASUREMENTS

Heights measurements were taken with subjects standing erect bare-feet with heels touching and the eyes directed straight ahead. A meter rule was placed on a leveled floor at the zero mark. A pointer placed directly horizontal to the vertex of the head with one end pointed to the mark in the meter rule revealed the reading of the height.

Weight measurements were done by adjusting the weight scale (bathroom scale) properly to the zero-point, and the subjects mounted with little clothing and bare feet. Their weights were recorded. The body mass indices (BMI) were calculated for each of the subjects

STATISTICAL ANALYSIS

Student t-test was used to analyze the parameters between

males and females at a probability level of p<0.001.

RESULTS

The results revealed the height and weight in males being significantly (p<0.001) higher in the males than the females. The BMI of the males was also higher than the females. These are as shown in Tables 1.

Figure 1

Table 1: Anthropometric Parameters of Male and Female Subjects

Parameters	Male	Females
Height (meters)	170.83±0.24	162.44±0.26*
Weight (kilogram)	68.01±0.24	60.51±0.34*
BMI (kg/m^2)	23.33±0.08	22.96±0.13*

Results are expressed as mean± standard error of mean
* Significant lower compared to the male (p<0.001)
BMI - Body mass index

DISCUSSION

In this study, our result revealed that the males were taller and weighed more than the females. The differences in height may be attributed to sex chromosomal differences, XY (males) as opposed to XX (females). Females usually reach their maximum height at a younger age than the males, since vertical growth of long bones stops with the closure of the epiphyseal plates. These plates centres close under hormonal surge with completion of puberty, and this usually occur several years earlier in females than in males [10] . This result is similar to urban adult population of Cameroon [7] . This similarity may be due to environmental influence, since Cameroon and Calabar share border. This result is opposed to other works done in Nigeria [3,11] , indicating that Nigeria is a multi-ethnic and multi-climatic society [12] .

The higher weight of the males compared to the females may be due to the higher heights of the males as seen in this study. Taller individuals have larger masses of bones and muscles [13]. This may be the reason the males weighed more.

Heights and weight may be used in correlation to better cardiovascular function [5] , but these parameters alone are not reliable in all instances [4,5] . Thus a measure of the individual's weight scaled according to height usually called BMI is a better predictor of a healthy status [6,14,15,16] .

In this study, the males had a higher BMI (23.33±0.08kg/m^2) compared to the females (22.96±0.13kg/m^2). The World Health Organization specifies a normal BMI as within 20-25 [17] . This therefore means that young adult Nigerians resident in Calabar Metropolis have normal BMI, indicating a healthy status of livelihood. The healthy status seen in this study corroborates other studies in Nigeria [3,11] , even though in these studies females had similar and higher BMIs respectively compared to the males.

In conclusion, young adult Nigerians resident in Calabar Metropolis show higher heights and weights in males and normal health status.

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