Relationship between indices of nutriture among residents of a Coastal City in South East Nigeria

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Background: There is a relationship between the indices of nutriture-BMI, waist circumference (WC), waist–hip ratio (WHR) and the development of glucose intolerance.

Objectives: To determine the normative values of the indices of nutriture and the inter relationship between these indices in male and female residents of a Calabar, South East Nigeria.

Methods: A sample comprising 1134 subjects (645 males and 489 females) representative of the entire population of Calabar metropolis aged 15–79 was studied. A multistage sampling method was applied to select the subjects for the study which involved the selection of four wards by randomization from the 22 wards of Calabar City and 50 house-holds from each of the four wards were selected using the table of random numbers, out of which eligible individuals aged between 15 and 79 years from the 200 households selected were recruited. Information obtained included anthropometric indices (height in meters, weight in kilogram, waist circumference in centimetre, hip circumference in centimetre). Anthropometric indices were expressed as mean (S.D.). The comparison of means between groups was done using independent Student’s t-test and the strength of association between quantitative variables by using the Pearson’s correlation coefficient. The normative values of indices of nutriture were determined using confidence interval, and the level of significance was taken as P<0.05.

Results: There is strong positive linear relationships between all indices of nutriture but the relationship was strongest between WC and BMI (r=+0.70, P<0.01), followed by WHR and BMI (r=+0.65, P<0.01 then WC and WHR (r=+0.49, P<0.01).

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Conclusion: The strongest relationship was between waist circumference and BMI and both have significant bearing on glucose intolerance.