ASSESSMENT OF BODY FAT COMPOSITION IN AN OBESITY STUDY

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Abstract: Body fat percentage is a measure of lean muscle mass and the amount of fat within the body. It is usually measured by the total weight of the persons fat divided by the person’s weight. Body composition refers to the constituents of body lean mass, fat mass, and water; it is a body’s relative amount of fat to fat-free mass. In this study, relationships between different methodologies that measures obesity in diverse Mississippian population were examined. A survey questionnaire was conducted in three different areas of Mississippi, including Prentiss, Hattiesburg and Jackson State University; Participants’ age ranged from 18-63 years. The instruments that were used in this study were skin-fold measurement device and a scale. Analysis of variance was used to determine the significant difference in the BMI rates and the total body composition in three different areas and between the different gender and race. Regression analysis was performed to test the association between the Body Mass Index (BMI) and the total body fat composition percent. Results showed a significant difference in total body composition among the three locations of the study (P ≤ 0.0015). Regression analysis between BMI and the total body composition showed a moderately strong association (R² = 0.562). When a regression analysis was performed based on race, the association was lower for African Americans than it was for whites (R² = 0.5163 and 0.7164, respectively). Human bodies require essential fat because it serves as an important metabolic fuel for energy production and other normal bodily functions. However, generalized prediction equations yield inaccurate results for African Americans. Population specific equations for African Americans are needed to estimate body fat and determine the obesity prevalence among these populations.

Key Words: Obesity, BMI, Body Composition

Acknowledgement: The project described was supported by Grant Number G12RR013459 from the National Center of Research Resources.