Correlational Analysis of BMI and Balance in Adults 50 and Over

Rachel Latimer, Casi Helbig, Ph.D., Mentor

Kinesiology; Texas Lutheran University; Seguin, TX

Category: Undergraduate

Advisor / Mentor: Helbig, Casi (email address)

ABSTRACT

The occurrence of obesity is climbing in all age populations including the elderly. According to statistics gathered in 2013 by the American Heart Association, 78.4 million adults are obese, and 76.3 million adults are overweight. The current excess cost of this growing epidemic is about $254 billion. While there are many understood effects of obesity, more research is needed to determine all of the effects of obesity and the extent of these effects. The purpose of this study was to determine if there is a correlation between balance and body mass index using the Berg Balance Scale. The Berg Balance Scale consists of 14 activities such as siting unsupported, transferring from one chair to another, standing with eyes closed, and standing on one foot. 31 adults (25 females and 6 males) from the ages of 50 to 95 volunteered for this study. Their heights and weights were measured. These subjects completed the Berg Balance Scale to determine their balance level. A score from 41 to 56 indicates a very low risk for falls, a score from 21 to 40 indicates a moderate risk for falls, and a score from 0 to 20 indicates a very high risk for falls. Using the Pearson's Correlation Coefficient, a significant correlation was not found between body mass index and balance ($r = -0.253$, $P = 0.170$). A strong negative correlation was found in the male samples, but this was not significant ($r = -0.782$, $P = 0.066$). No correlation was found in the female samples ($r = -0.192$, $P = 0.359$). A significant negative correlation was found between age and balance score ($r = -0.778$, $P = 0.000$). According to this study, there is no correlation between BMI and balance in adults at least 50 years of age.