Correlation Between Anxiety Levels and Body Composition Among Female Students in Qazvin University of Medical Sciences

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ABSTRACT

Introduction: Generalized Anxiety Disorder includes enduring apprehension, focus challenges, fatigue, restlessness, and muscular strain affecting quality of life. A study with students from six countries found a high lifetime occurrence rate of 18.6% for generalized anxiety disorder compared to the general population. Evidence supports the link between depression, anxiety, and obesity due to poor diet, lack of exercise, and visceral fat, leading to psychiatric issues. Metabolic and vascular problems like inflammation, insulin resistance, and hypertension increase the risk of depression and anxiety development. Behavioral patterns related to anxiety, eating habits, and food cravings correlated. Chronic stress conditions and uncontrollable stressful events are positively correlated with addiction, excessive weight, and obesity.

Methods and Materials: The current cross-sectional study included 196 female students from Qazvin University of Medical Sciences. Data was collected through a demographics questionnaire. Anxiety levels were assessed using the Beck Anxiety Inventory (BAI). Weight and body composition were measured with an InBody 570, a device utilizing electrical impedance for body composition analysis. Height was measured accurately with a tape measure. Additionally, waist and hip circumferences were measured with a precise tape measure.

Results: A total of 200 people participated, with 196 completing questionnaires and body-analysis. The ages of the subjects were around 22.24 ± 3.23 years. Most enrolled were undergraduates. Mean BMI was 22.7 ± 5.36, falling within an acceptable range, but body fat percentage was high at 32.81 ± 7.01. Visceral fat percentage was also elevated at 9.03 ± 4.16 among student participants. The anxiety score was 12.82 ± 8.28 among participants. Participants were categorized based on anxiety intensity: 31.6% showed no anxiety signs, 37.2% had mild anxiety, 23% reported moderate anxiety, and 8.2% displayed severe anxiety levels. There was an absence of a noteworthy association between anxiety and the diverse elements of body composition, such as weight, body mass index, fat percentage, muscle percentage, and waist circumference (p = 0.05).

Conclusion and Discussion: The study concluded that 31.2% of female students experience moderate to severe anxiety. The average BMI of participants was expected, but their total fat and visceral fat levels exceeded standard thresholds. However, the examination did not uncover a significant link between anxiety and body composition. Evidence from an animal trial indicates that obesity caused by a high-fat diet may lead to depression and anxiety in mice by affecting AMPK and mTOR phosphorylation and inhibiting autophagy. Moreover, the results of a study demonstrated that overweight students reported a notable decrease in anxiety levels in contrast to underweight students following calorie restriction. The results show no link between anxiety and body composition, contrary to previous studies. Anxiety caused by obesity may be more related to obesity than anxiety leading to obesity. Participants with normal BMI may have avoided anxiety related to obesity. More research with a bigger sample size is necessary in this field.