Research Paper Medical Science

Measurement of Anxiety in Young Obese Students Using Zung Self Rating Anxiety Scale Inventory

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ABSTRACT

Background: The relationship between obesity and common mental health disorders is complex. Obesity is also associated with an increased risk for a variety of chronic diseases, most of which are associated with depression which in turn can precipitate chronic disease due to diminished treatment adherence and/or response. The purpose of this study is to assess the anxiety among undergraduate students and to evaluate its correlation with BMI. Anxiety is easily assessed by Zung Self Rating Anxiety Scale questionnaires as they are easy to understand by the participants.

Objective: This study was planned to assess anxiety using in young obese adults. Zung Self Rating Anxiety Scale (SAS) of I year MBBS students & to correlate Body Mass Index (BMI) with anxiety levels

Material & Methods: 138 medical students were involved in the study (56 males and 82 females). Without knowing the interpretation of the scoring system, subjects were asked to fill the anxiety inventories in speculated time using Zung Self Rating Anxiety Scale (SAS), a 20-item self-report assessment device which included measures of state and trait anxiety.

Result: There was no statistical significance in the anxiety score of overweight and normal weight group even though the mean levels were higher in overweight group.

Conclusion: This study demonstrated no statistically significant difference in anxiety scores of overweight & normal weight young adults. Also there is no statistically significant association between anxiety & BMI. This type of study will help in detection of high anxiety students at an early stage which will be helpful in implementation of preventive measures at an early age. This will prevent harmful effects of stress on body functions.

Keywords :

Introduction:

The relationship between obesity and common mental health disorders is complex.1 There are several theories about how the two are linked. Some researchers suggest that obesity can lead to common mental health disorders, whilst others have found that people with such disorders are more prone to obesity. There are a number of mechanisms that could explain potential casual associations between obesity and common mental health disorders.

Stress, a humongous never ending social problem has been affecting the world population on daily basis from the period of civilization and is affecting our health and wellbeing till this date. It is an extremely adaptive phenomenon in human, contributing to anyone's survival, activities and performance. It is something that we all experience at times. With stress comes a sloppy and irritated lifestyle and in turn affects the psychological and physical health.

Excess fat accumulation has been shown to be associated with several adverse outcomes including diabetes, hypertension and ischemic heart disease. Risk factors for abdominal fat include genetic factors, age and gender. Most recently, it has been hypothesized that psychological factors, as well as behavioral factors, may play a part in development of obesity. Body mass index (BMI) is the most commonly used tools for assessing body composition because of their simplicity and low cost.

There are studies suggesting correlation of obesity with anxiety in western world2but less information is available in the Indian population.

The connection between obesity and common mental health disorders is an important public health issue. Both these conditions have major implications for health care systems across the globe and account for a significant proportion of the global burden of disease3. Individuals who suffer from both obesity and common mental health disorders may also face particular risks to health and well-being, as it is likely that the conditions may perpetuate each other.

The purpose of this study is to assess the anxiety using Zung Self Rating Anxiety Scale (SAS) of I year MBBS students & to evaluate its correlation with Body Mass Index (BMI) with anxiety levels.

Material &methods:

The study was a cross sectional study. It was conducted in Department of Physiology Bharati Vidyapeeth University Medical College Pune 43. The study Period is March 2012 – September 2012. The research protocol was approved by college ethical committee and informed consent obtained from each subject prior to inclusion in the study.

138 medical students were involved in the study. Out of which 56 were males and 82 were females.

Body weight was measured while the subject is minimally clothed and without shoes, for height the subject would stand in erect position with bare feet on flat floor against a vertical scale and with heels touching the wall and head straight. BMI4was measured by weight in kilograms divided by square of height in meters (kg/m2). They were divided in two groups

as 42 obese and pre-obese students (BMI ≥25) and 96 non-obese students (BMI<25)

After obtaining written informed consent they were asked to fill the anxiety questionnaire. Without knowing the interpretation of the scoring system, subjects were asked to fill the anxiety inventories in speculated time. Subjects with history of cardiovascular diseases like rheumatic heart disease, coronary heart disease or congenital heart disease ,respiratory diseases like bronchial asthma, COPD or tuberculosis, history of smoking and alcohol subjects with severe anemia , Physical disability, history of any chronic illness like hypertension and diabetes mellitus were excluded from the study

For Zung Self Rating Anxiety Scale (SAS)5, a 20-item self-report assessment device which included measures of state and trait anxiety. Answering the statements a person should indicate how much each statement applies to him or her. Each question is scored on a Liker-type scale of 1-4. Overall assessment is done by total score. The total scores range from 20-80.That are again divided into score with 20-44 as Normal Range , 45-59 Mild to Moderate Anxiety Levels , 60-74 Marked to Severe Anxiety Levels , 75-80 Extreme Anxiety Levels

Statistical analysis was done by using appropriate statistical test. P value of <0.05 was considered as significant. Anxiety scores were analyzed using non parametric test like MW test.

Observation & results:

Table 1: Comparison of anxiety score by ZUNG method according to BMI in study group

ZUNG method	BMI		MW test Z Value	P Value
	<25 (n=96)	≥25 (n=42)		
Anxiety score Mean ± SD	35.44 ± 8.56	37.1 ± 10.7	0.62	>0.05

There was no statistical significance in the anxiety score of overweight and normal weight group even though the mean levels were higher in overweight group.

Discussion:

Anxiety is a physiological and psychological state characterized by cognitive, somatic, emotional and behavioral components.6

In the present study we have assessed anxiety among undergraduate students and its correlation with obesity.

We found no statistical significance in anxiety score between normal BMI group and overweight group but the mean levels of anxiety by Zung method (Table1) were higher in overweight group than normal weight group.

H N Rohini et al7 tried to found the association between anxiety and obesity in 100 medical students with Zung self rating anxiety scale. It was observed that there was no association between overweight and anxiety scores. The gender did not appear to be related to anxiety scores.

Prevalence of obesity and overweight is on rise in India8. Obesity is associated with conditions like hypertension, coronary arteriosclerosis, elevated cholesterol, type2 diabetes, stroke and certain types of cancers. Psychologically it is associated with several problems such as lower self-concept, negative self-evaluation, decreased self-image, anxiety and depression.

Various studies observed 9,10,11 that children and adolescents at the highest quartiles of Body Mass Index (BMI), had a higher prevalence of concurrent depression, suggesting that associations between these two conditions were more likely to exist in individuals with more severe obesity & also found that increased anxiety and depression were associated with emotional eating and loss of control over eating.

Our study found different findings than some other study 12 investigated the association of obesity with anxiety, depression and emotional well-being in different age groups. They observed that obesity had an association with anxiety, depression and lower well-being in women, but not in men.

P Warschburger et al13 found that obese children and adolescents might experience significant restrictions in their emotional well-being. Psychological problems suggested to be associated with obesity with negative self esteem, increased anxiety and depression levels.

But according to some studies by Marco Piccinelli14 and Loewenthal K, et al15 there was no gender difference for anxiety and depression as determinants of gender differences in depressive disorders were far from being established and their combination into integrated aetiological models continued to be lacking.

Since so few studies have examined gender differences in depression and their relation to neuropsychological patterns, firm conclusions can't be drawn. However, some speculations can be offered and some suggestions can be outlined for potentially fruitful future research.

Limitation:

There is a relative lack of longitudinal studies, testing several variables simultaneously for their ability to predict the appearance of depressive episodes and related gender differences. Objective parameters like serum or salivary cortisol should be done to correlate the findings with questionnaires.

Conclusion:

This study demonstrated no statistically significant difference in anxiety scores of overweight & normal weight young adults. There is bi-directional association between obesity and common mental health disorders like anxiety. Hence, we should encourage patients to engage in behaviors that will help to improve obesity and common mental disorders, such as stress management, exercise and lifestyle modifications instead of simply dieting or taking medication. Also, this study will help in detection of high anxiety in students at an early stage which will be helpful in implementation of preventive measures at an early age. This will prevent harmful effects of stress on body functions as discussed earlier.

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