

Correlative Study To Assess The Relation Between Depression, BMI, Binge Eating And Body Image Among Adolescent Girls.

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ABSTRACT

A study was conducted to find out the correlation between depression, BMI, Binge eating and body image among adolescent girls in a selected college of BBSR, Odisha. The research design was non experimental and there were total 100 participants from age group of 17-19 years and non probability convenient sampling technique was used to select the samples. Data were collected by using self-structured demographic tool to measure the demographic variables and accordingly the standardized tool KADS-6 and Binge eating scale used to measure the depression and binge eating variables and one modified tool body image questionnaire used to measure the body image variable. Pilot study was conducted to identify the reliability of tool and feasibility of the study. Pilot study was conducted The distribution of subjects according to the age of students, 29% (29 out of 100) of students are 17 yrs, 38% (38 out of 100) of students are in 18 yrs and 33%(33 out of 100) are 19 yrs. The weight distribution of students are, 35%(35 out of 100) of students are having weight 40-50kg, 48%(48 out of 100) between 51-60 kg, and 17% (17 out of 100) of students are having ≥ 60 kg. The majority (68%) of participants are in the height between 150-160cm, 23% of participants are in the height between 140-150cm and height between 160-170cm of participant are 9% (9 out of 100). The distribution of subjects according to BMI depicts majority(70%) of students are normal, 13%(13 out of 100) of students are underweight, 16%(16 out of 100) of students are overweight and 1%(1 out of 100) of students are obesity. The distribution of subjects according to the birth order, majority of participants (58%)(58 out of 100) are the 1st child of their parents, 36%(36 out of 100) of participants are the 2nd child an 6%(6 out of 100) are the 3rd child of their parents. As regards to siblings, 45%(45 out of 100) of participants have 1 sibling, 41%(41 out of 100) of participants have two siblings and 14%(14 out of 100) of participants have 3 or more siblings. As regards to residence, majority that is 69% (69 out of 100) of participants came from urban and rest 31%(31 out of 100) of participants came from rural. Regarding diet the above table and figure depicts that majority, that is 74% (74 out of 100) of participants are non-vegetarian and 26% of participants are vegetarian. As regards to the number of times eat outside in a week, the above table and figure shows that, the majority 88% (88 out of 100) of participants eat 2 times in outside in a week and 12% (12 out of 100) of participants eat 4 times or more in outside in a week.

Key words: Depression, BMI, Body image, Binge eating, Adolescent girls.

1. INTRODUCTION

Overweight and depression are two major public health pro-blems among adolescents. Both obesity and depression are very pre-valent and associated with numerous health complications, including hypertension, coronary artery disease and increased mortality.¹ Because they both carry a risk for cardio-vascular disease, a possible association between depression and obesity has been assumed and studied.² Obesity is defined as an excess of body fat. The BMI is the standard measure of overweight and obesity in children 2 years of age and older. The BMI is equal to the body weight in kilogram divided by height in meter squared. Obesity in children is defined as a BMI greater than or equal to 95th percentile for age and sex. As children come close to adulthood, the percentile for age and sex approach the adult standards.³ Similar to overweight and obesity, depression is a widespread problem. Depression is a mood disorder that affect the mental health. Depression is the leading contributor to the burden of disease and injury in the females aged 10-24 years and the second leading contributor after (road traffic accident) for the males in the same group.⁴ Depressive disorder tend to first appear in adolescence or early adulthood. Overall, about 25% of people who develop a depressive disorder will do so before the age of 20 years, and 50% before the age of 30 years.⁵ Body image is the dynamic perception of one's body- how it looks, feels and moves. It is shaped by perception, emotions, physical sensations and is not static, but can change in relation to mood, physical experience and environment.⁶ Modern society encourages the research for perfect body. Previously aesthetic ideal was a thin-body and now superimposed on this is the need to be physically fit. This drive for fitness is mainly prevalent in adolescents and young adults; a high proportion of adolescent trying to lose or gain weight or change their body proportion.⁷ Mass media, peer appearance conversations and peer

criticisms effected body image perception in almost 60% of the adolescents. As impact, girls wanted to lose weight and to look pretty and boys exercised more to obtain muscular bodies.⁸ Girls were more influenced by the media as compared to boys which is a matter of public health concern. Different group of BMI can affect body image and dissatisfaction of children and adolescent with their body.⁹ Binge eating disorder (BED) has been defined as eating an unusually large amount of food associated with “subjective sense of lack of control over” the eating episode.¹⁰ It is in fact relatively common disorder, with an estimated life time prevalence in general population around 1.4%.¹¹ BED is common in obesity, and studies 33-43%.¹² Prevalence is likely to increase, especially because of the rising incidence that both obesity and eating disorders show worldwide rather than for the widening of diagnostic criteria introduced in DSM-5.^{13,14}

2. METHOD

This correlative study used to collect the data about depression, BMI, BODY IMAGE, and binge eating in both prospective as well as retrospective method of correlative research design. 100 samples were gathered together as per the inclusion and exclusion criteria of study. The data were collected at one time point by presenting the tool from the sample.

A convenience sample from ITER Higher Secondary college of S ‘O’A University was recruited. All students are adolescent girls. Eligible students were between 17 to 19 years of age group. There were 38 out of 100 of students were 18 years, 33 out of 100 of students were 19 years, 29 out of 100 of students were 17 years. The sample size for the study was determined by budgetary constraints as the study was considered a feasibility study with results being used to guide further research.

3. MEASURES

Kutcher adolescent depression scale (kads-6) Is a 6- item scale. It is a self report scale specifically design to diagnosis and assess the severity of adolescence depression. The Maximum score of this scale is 18 and the minimum score is 0. Scale score can range from 0 to 18 where score between 0-5 indicate the adolescent girls is probable not depressed and score equal or above 6 indicate possible depression, more thorough assessment needed. Similarly to measure the binge eating a 16 item questionnaire to assess the level of binge eating by stating the way of the individual feel about the problem they have controlling their eating behaviour as **binge eating scale**. The maximum score of this scale is 46 and the minimum score is 0. If score is ≤ 17 - Non-Binge eating, if lies between 18-26 - Moderate eating, if score ≥ 27 - Severe Binge eating. To assess the level of body image by stating the way the individual perceive them body image questionnaire is used. The body image questionnaire has 4-section. The Maximum Score-125, and Minimum Score-25. If the score lies between 25-50 considered low self esteem, if score lies between 59-91 considered moderate self esteem and if the score lies between 25 to 91 considered that the adolescent girl is satisfied with their body image and the BMI is measured by using the BMI scale. The internal consistency reliability of KADS, binge eating scale and body image questionnaire are $r=0.76$, $r=0.70$, $r=0.83$ respectively. Thus the scales were analysed separately in this study.

4. DATA ANALYSIS

The collected data was analysed by using descriptive statistics such as percentage, mean and standard deviation. The statistical significance of relationship between two variables are measured by using the Karl Pearson's correlation coefficient method. The level of significance was set at $p < 0.05$.

5. RESULTS

The distribution of subjects according to the age of students, 29% (29 out of 100) of students are 17 yrs, 38% (38 out of 100) of students are in 18 yrs and 33% (33 out of 100) are 19 yrs. The weight distribution of students are, 35% (35 out of 100) of students are having weight 40-50kg, 48% (48 out of 100) between 51-60 kg, and 17% (17 out of 100) of students are having ≥ 60 kg. The majority (68%) of participants are in the height between 150-160cm, 23% of participants are in the height between 140-150cm and height between 160-170cm of participant are 9% (9 out of 100). The distribution of subjects according to BMI depicts majority (70%) of students are normal, 13% (13 out of 100) of students are underweight, 16% (16 out of 100) of students are overweight and 1% (1 out of 100) of students are obesity. The distribution of subjects according to the birth order, majority of participants (58%) (58 out of 100) are the 1st child of their parents, 36% (36 out of 100) of participants are the 2nd child and 6% (6 out of 100) are the 3rd child of their parents. As regards to siblings, 45% (45 out of 100) of participants have 1 sibling, 41% (41 out of 100) of participants have two siblings and 14% (14 out of 100) of participants have 3 or more siblings. As regards to residence, majority that is 69% (69 out of 100) of participants came from urban and rest 31% (31 out of 100) of participants came from rural. Regarding diet the above table and figure

depicts that majority, that is 74% (74 out of 100) of participants are non-vegetarian and 26% of participants are vegetarian. As regards to the number of times eat outside in a week, the above table and figure shows that, the majority 88% (88 out of 100) of participants eat 2 times in outside in a week and 12% (12 out of 100) of participants eat 4 times or more in outside in a week

Relation between depression and BMI was statistically tested using correlation ($r=-0.05141$, $P=0.4686$) that is moderately negative correlation because $-1 < r < 1$. Relation between depression and binge eating was statistically tested using correlation ($r=0.050612$, $P=0.9764$) that is moderately positive correlation because $0 < r < 1$. Relation between depression and body image was statistically tested using correlation ($r=0.276027$, $P=0.0001$) that is moderately positive correlation because $0 < r < 1$. Relation between binge eating and body image was statistically tested using correlation ($r=0.230743$, $P=0.0011$) that is moderately positive correlation because $0 < r < 1$. Relation between BMI and binge eating was statistically tested using correlation ($r=0.049342$, $P=0.0001$) that is moderately positive correlation because $0 < r < 1$. Relation between BMI and body image was statistically tested using correlation ($r=0.017741$, $P=0.8026$) that is moderately positive correlation because $0 < r < 1$.

6. DISCUSSION

Among adolescent girl 20.5% of studied girls show aspiration to become thin, who already perceived their body image as too thin. The dissatisfaction was higher among girls of urban (30.2%) and slum (40.0%) areas in comparison to rural (22.5%) area. The focus of the current research on measure of eating style (such as binge eating) and the body image of the adolescent girls between 17-19 years in ITER Higher Secondary college of S 'O' A University, Bhubaneswar. Many studies have focused on the relationship of body image with eating style. The prevalence of binge eating disorder among adolescent girls attending weight loss programmes ranged between 16% and 51.6%. Weight stigmatization significantly mediated the relationships between BMI and body dissatisfaction, BMI and depressive symptoms and overweight and depressive symptoms. The model accounted for 44.7% of the variance in depressive symptoms and 28.2% of the variance in body image dissatisfaction. The BED group endorsed significantly more symptoms of depression and anxiety. Linear regression indicated that BED diagnosis and internalizing symptoms accounted for 30% of the variance in kcal intake. This suggests that symptoms of depression and anxiety influence whether one engages in binge eating, which influences kcal intake. BED women were significantly more likely to endorse depressive symptoms, depression scores were negatively correlated with body satisfaction in non BED women only. 17-19 years of age girls using EAT-26 (Eating Attitudes Test) Bulimic Investigatory Test Edinburgh (BITE) as well as a nutritional status evaluation. The prevalence of eating disorder triage was 11.4% for the adolescent evaluated. Overweight was present in 21.1% of students with levels of distortion of 56.9% and dissatisfaction of 79.3%. Overweight was correlated with the eating disorder triage and body dissatisfaction was considered as a risk factor, increasing the chances of these disorders by more than 13 times. Many study also on female students of university to find out the relationship between body image, food addiction, depression and body mass index. There was a negative relationship between body image and depression and food addiction scores. There was a positive relationship between food addiction and depression scores, in addition to a positive relationship between food addiction and BMI. In the present study we will examine that the association between depression and abnormal BMI is moderated by these variables. Many study also conducted study on female undergraduates to examine lifetime weight stigmatization as a mediator of the relationships among current BMI, overweight, depression and body dissatisfaction. Weight stigmatization significantly mediated the relationships between BMI and body dissatisfaction, BMI and depressive symptoms and overweight and depressive symptoms. The model accounted for 44.7% of the variance in depressive symptoms and 28.2% of the variance in body image dissatisfaction. The study can be conducted on the relationship between depression and any other variables with a larger sample.

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