

The Correlation between Bulimia Nervosa and Depression in Period of Adolescence

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Summary

Background: Eating disorders are a group of mental health concerns characterized by disturbance in eating behavior that including: anorexia, bulimia, binge eating disorder and other types of disordered eating. In the period of puberty adolescents are becoming increasingly vulnerable to eating disorders.

Objective: The purpose of this study was to examine the prevalence of possible eating disorder (bulimia nervosa) and depression in the period of puberty.

Methods: Participants in this study were 233 8th-grades Basic General Education Student (Secondary), of whom 128 were boys and 105 girls, with an average mean age of 14 years. The Eating Attitude Test (EAT-26) and Children's Depression Inventory (CDI) were applied to the entire study population. Also we calculate the Body Mass Index (BMI: a parameter defines as the ratio of human body weight and height).

Results: According to the EAT, 73 (32%) students had a EAT score indicating a possible diagnosis of bulimia nervosa. But on the other hand we found that 188 (81%) students had emotional symptoms of depression. Correlation results indicated that depressed mood scores positively correlated with bulimia scores.

Conclusions: We observed high prevalence of bulimia nervosa and depression in the period of puberty.

Key words: adolescents, BMI, bulimia nervosa, depression

Introduction

Adolescence is a period which is characterized by significant physical, emotional and intellectual changes. This is a period of growth which is characterized by the change in body proportion, size, weight and body image, development of sexuality and reproductive functions. These changes are a normal transition from childhood to adulthood. But adolescents are experiencing these changes in different ways. During puberty, most of the adolescents feel out of control with their body. At this stage, they are no children, but they are young people who keeping up with the transition can be a change. This is not new that more development changes occur during puberty, that in only other life stage. Also the puberty starts earlier now than ever before.

The young person thinks: "What is happening with my body?" To answer of this question will help him/her to know about and understand these changes before they occur. Also it is very important to recognize that no two people are exactly alike, puberty comes at different rates and times for (Berger, 2005). In this period of their life many adolescents, because of their stage of cognitive development, lack the psychological capacity to express abstract concepts such as self – awareness, motivation to lose weight or feeling depression (March and Cohen, 1990).

Depression always goes hand-in-hand with some kind of eating disorders, like anorexia nervosa and bulimia nervosa (Pine, Goldstein, Dong and Price, 2001). Eating problems are common in children and adolescents, and eating disorders typically have their onset during these developmental periods. Anorexia nervosa is a serious and potentially life-threatening disorder associated with food restriction, malnutrition and distorted thinking about body shape and weight. On the other side bulimia is more frequent than anorexia, with prevalence at 90 to 95% among females (Abbot, Ackerman and Reynolds, 1993). Bulimia nervosa is complex illness affecting adolescent with increasing frequency. It is characterized by period of restriction followed by binge eating and purging behaviors (vomiting, laxative use) and often begins during early adolescence (ages 15 to 17 years). This kind of eating disorder is associated with serious biological, psychological and sociological morbidity (Fisher and Golden, 1995). There are several psychological hypotheses that attempt to explain indication as an etiologic factor of bulimia nervosa. Psychiatrists and psychologists think that this kind of eating disorder is more prevalent in industrial countries, in the family with conflicts, social isolation and emotional deficit.

In the last few years, many researchers have focused their attention on the study of the relationship between depressive symptoms and eating disorder in period of adolescents (Friedman and Brownell, 1995; Roberts, Strawbridge and Kaplan, 2000; Fitzgerald and Morgan, 1991). Studies emphasize a frequent association

between bulimia nervosa and depression as psychiatric conditions. The young person feels sad, lonely, empty and isolated.

Aim of research

The aim of the present study is to investigate the association between bulimia nervosa and depression in period of adolescence. To achieve this aim, the following goals are pursued:

To classify adolescents by their Body Mass Index (BMI) – how BMI varies in period of puberty;

To find out the relation between the level of depression and bulimia nervosa in period of adolescence.

Materials and methods

Participants

The participants in this study were 233 8th – grade basic general education students, of whom 128 were boys and 105 girls with an average mean age of 14,6 years. The undergraduate students who volunteered to participate in this study

were explained about the purpose of the study and implications. The students were assured anonymity and were told to respond honestly. The questionnaires were administered collectively in the participants' classrooms. Self administered technique was employed in administering the questionnaires, where researchers will be on site, to distribute and to collect the completed forms. Finally, height and weight measurements were taken of all participants.

Instruments

The Eating Attitudes Test (EA-26) is probably the most widely used standardized self-report measure of symptoms and concerns characteristic of eating disorder (Garner and Garfunkel, 1979). This test is good at detecting clinical cases in high-risk populations and identifying individuals with an abnormal occupation with their diet and weight. The questionnaire used was valid by three content experts and the Alpha cronbach reliability test results was 0.85 which is above the benchmark 0.75 and is reliable for further analysis (Garner, Olmsted and Garfunkel, 1982). EAT-26 is a 26-item self-report instrument. Items are presented in a 6-point forced choice Linker scale ranging from 1 ("never") to 6 ("always"). The EAT-26 total score ranges from 0 to 78. The score equal between 13 and 19 corresponds with normal weight, but the score greater than 20 corresponds to a possible diagnosis of bulimia. Cronbach's reliability for EAT-26 on our population was 0.789.

In addition to the EAT-26, participants completed the Children's Depression Inventory (CDI), which is a commonly used self-report measure of the depression symptoms in children and adolescents ages 7 to 17. The scale has 27 items dealing sadness, self-blame, loss of appetite, interpersonal relationships and school adjustment (Kovacs, 1981). CDI items have to be scored on three-point scales with 0, 1 or 2 with higher scores indicative of more severe depression. CDI has been found to have adequate internal consistency (Cronbach's $\alpha=0.88$).

Finally, height and weight measurements were also taken of all participants in order to estimate the Body Mass Index ($BMI=kg/m^2$) to confirm the diagnosis of Bulimia. The BMI was calculated according to standard methodology, applied to vary strata of the population of Macedonia, including different genders, ages and nationalities.

The collected data were coded and imported into a statistical program (SPSS version 17). The basis statistical analysis and interpretation were made using the same program. For evaluation of significance between groups we used the Pearson correlation.

Results

This clinical research studied 233 adolescents, 128 boys and 105 girls. As shown in table 1 the majority of participants (121) had BMI values within the range of 18.5-25kg/m², while nine students have a BMI of less than 18.5kg/m² and 95(42%) had BMI over 25kg/m². These results showed that most of our young persons in period of adolescence eating much than others and they are risk group for developing the mental problems like the bulimia nervosa. Obesity is the problem which is associated with numerous health and psychiatric complications.

Table1. The BMI values of students

Body mass index-BMI(kg/m ²)	N	%
< 18.5	17	7
Between 18.5 - 25	121	51
>25	95	42
Total	233	100

As to the Eating Attitude test(EAT-26) 73 students (32%) had a score equal to greater than 20, that is, these students probably have subclinical eating disorder like as bulimia nervosa (Table 2).

Table2. Prevalence of students according to EAT- 26 scores

EAT	N	%
< 13	14	6
between 13 – 19	146	62
> 20	73	32
Total	233	100

From Figure 1 we can see that a great number of our participants are young subjects with excessive intake of food, with a sense of loss of control ever eating (in a sense that they can't stop eating or can't control what and howmuch they eat.

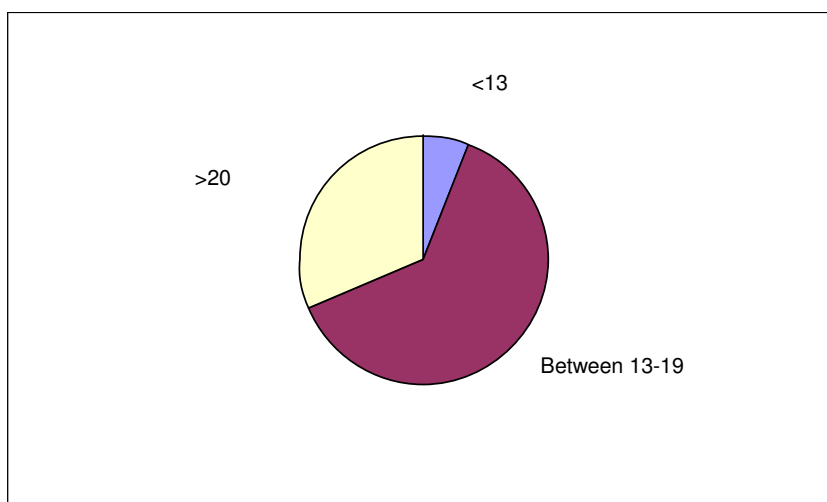


Figure1. Prevalence of students according to EAT – 26 scores

On the other hand most of the students in our study had negative emotions not only about their weight. We found that 188 adolescents (81%) had cognitive and emotional symptoms of depression (Table 3).

Table3. Prevalence of students according to CDI scores

CDI	N	%
< 24	45	19
between 25 - 35	179	76
between 36 - 45	9	5
>45	0	0
Total	233	100

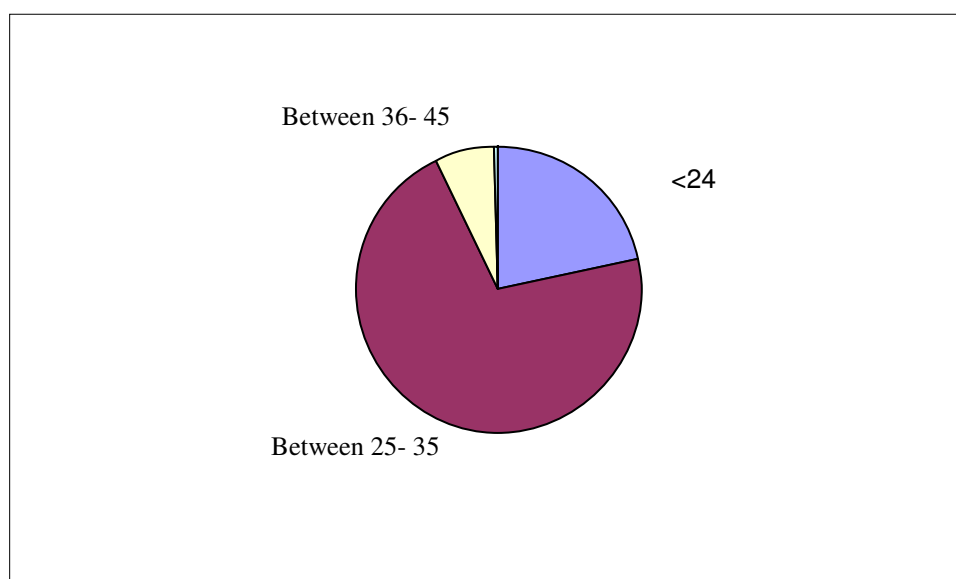


Figure2. The level of depression among he students

Figure 2 presents CDI values for students. In this figure we can see that all young boys and girls thought that

they were sometimes depressed.

A summary of descriptive statistics is given in Table 4. The mean average of BMI among students was 22.5 kg/m². The average total score obtained on the EAT-26 was 20.8 points, with values ranging between 0 and 76 points. The mean CDI scores were 32 with range of 54 (0-54). The correlation of statistical significance by Pearson between BMI, bulimic symptoms and depression is at the level of 0.01.

Table4. The correlation between BMI, EAT-26 and CDI

Descriptive statistics	Body mass index-BMI (kg/m ²)	EAT - 26	CDI
N	233	233	233
Mean	22.5	20.8	32
Std. deviation	3.60	2.67	3.86
Pearson Correlation	1	0.784**	0.765**

** . Correlation is significant at the 0.01 level

Discussion

Among the mental disorders, eating disorders have gained exceptional importance in recent decades, as evidenced by the numerous studies related to these diseases. This interest is stimulated by the need to prevent; to early detect and to effectively treat a group of disorders that affect a large population sector. A variety of factors including personality, genetic inheritance, neurobiological alteration and the mass media's portrayal of thinness as an attractive quality, all play a role (Herzog, Sacks and Gray, 1993; Hooke, 1991). However the number of adolescents displaying eating disorder decreased from the beginning of the year to the end.

Anorexia nervosa and bulimia nervosa often are chronic eating disorders associated with high co morbidity. Researcher found increase disordered eating behaviors and depression among adolescents who had bulimic problems (At Tie and Brooks-Gunn, 1989). There are some inconsistent findings concerning the relationship between obesity and depression. Some studies included that there was no relation between obesity and depression (Cooley and Toray, 2011), while others reported that obese people had higher risk of depression (Faith, 2005). Goodman and Whitaker showed that depressed adolescents are at increased risk to the development and persistence of obesity later in their life. They concluded that depression in adolescence was positively associated with body mass index during adulthood. Also they thought that psychological distresses caused by obesity may lead to depression.

In this paper we tried to find the relation between BMI, EAT-26 and CDI in a sample of 233 boys and girls in period of puberty. We found that overweight and obesity in adolescents of secondary school are on the increase. Research among students has suggested that the EAT-26 is an internally consistent scale with an alpha coefficient of 0.765. A score greater than 20 is considered to be an indicator of a possible eating disorder.

Also results of our analyses indicate that BMI and depression are associated. In general, it can be concluded that higher BMI may result in more severe forms of depression. The depression of adolescents refers to a set of emotions and behaviors such as sadness, unhappiness, blue feelings, poor appetite, insomnia (Reynolds, 1998; Smith, 2001). It is known that adolescent depression in this case is associated with their psychological difficulties about their overweight and obesity. Adolescents may present significant difficulties related to eating, body image and weight control habits. The young people who believe they are overweight prior to puberty may be at risk for the development of disordered eating, related problems and depression mood.

The family often plays a big role in whether a person develops an eating disorder. Negative family influences such as being teased about appearance, overly critical parents and siblings and pressure to be thin are all risk factor. Studies and research also show that eating disorders (anorexia nervosa or bulimia nervosa) are more prevalence in people who had one or more parents who were overprotective, detached and critical with their children. Given that adolescents with eating disorder usually live at home and interact with their families on a daily basis, the role of family should be explored during both evaluation and treatment, with particular given to the issues of control and responsibility for the adolescent within the family context.

Conclusions

Many adolescents become preoccupied with their body weight and attempt to achieve the ideal physique, because of social and cultural norms reinforced by medic messages, emphasizing a thin and physically fit body. But the alarming increase in the number of adolescents who have overweight and bulimia nervosa as a consequence of the serious nature of their symptoms and their resilience to treatment.

In conclusion this work shows the complexity of the relation between obesity and depression. The results indicate a high level of depressed emotions and dissatisfaction with their figure among adolescents. Further research is needed to better understand the structure of such complexity. This research showed that obesity and depression are associated, but maybe the form of the relation is different among boys and girls.

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