

# Emotional Eating And Obesity: Contemplating The Link

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## ABSTRACT

Emotional eating is when the food is eaten to satisfy one's feelings instead of satisfying hunger. This study aims to assess emotional eating on obese and non-obese adolescents. Non-experimental, Comparative research approach was used to achieve the objectives of the study. Researcher selected 120 adolescents studying in university by using Non probability purposive sampling technique. Result represents that Emotional eating is significantly found higher among obese individuals. Comparison of emotional eating among obese and non-obese adolescents was tested by using unpaired t test with  $t=5.869$  at  $df=238$  and  $p=0.001$  indicates statistically significant at  $p<0.05$ . In this study significant difference in emotional eating among obese and non-obese adolescents with clear indication of high mean score of emotional eating in obese 43.84 in compared to 33.40 mean emotional eating score of non-obese with a mean difference of 10.44. Further findings revealed that Gender of obese adolescents was significantly associated with emotional eating at  $p<0.05$  level of significance. Analyzing and evaluating the data collected and by comparing this to obese and non-obese adolescents, researcher found that in obese adolescents emotional eating is higher which suggests link between emotional eating and obesity.

**Key word** - Emotional Eating, Obese Adolescents, Non-Obese Adolescents.

## I. INTRODUCTION

Obesity is a major health issue in nowadays generation which leads to many sicknesses like heart attacks, hypertension, diabetics and other life-threatening diseases. The quantity and quality of unhealthy food eaten will lead to obesity. There are many causes for obesity and one of the main causes is Emotional eating. Emotional eating helps an individual to escape from all negative feelings like anxiety, stress, low-esteem and other mental disturbance. The negative emotions affect the individual's eating behavior. Individual keeps eating excess amount of food more than their body requires just to feel better for that particular moment. As emotional eating becomes a habit, the individual attain obesity. Signs of depression is seen and sleeping pattern is disturbed.

Obesity is a serious problem worldwide that affects millions of people. According to WHO, global prevalence of obesity has almost tripled in last 40 years. Approximately 50% of the adults worldwide are overweight or obese. The recent studies and WHO data shows that India is on 3<sup>rd</sup> rank in global obesity index.<sup>1</sup> Obesity has become one of the most pressing health issues in the United States. According to the 2007-2008 National Health and Nutrition Examination Study (NHANES), 33.8% of adults in the United

States are obese<sup>2</sup>

Emotional-eating is broadly defined as eating in response to a range of negative emotions<sup>3</sup>. Estimates of emotional-eating in youth range from 10%-60%, with the highest rates reported by adolescents<sup>4</sup>.

Both a decrease and an increase in food intake can be caused by stress and other unfavorable feelings like despair and anxiety. The latter response-a propensity to eat in response to unpleasant emotions has been referred to as "emotional eating" since the meals consumed are typically tasty and high in energy. Several factors can contribute to emotional eating, including using food as a coping tool for unpleasant feelings or conflating internal hunger and satiety signals with emotional-related physiological changes. In the absence of hunger, emotional eating of comfort foods can encourage overeating, sometimes referred to as disinhibited eating. As a result, emotional eating increases caloric consumption, which over time may result in obesity.

Overweight and obesity are growing issues that have recently received more attention. Health professionals are placing a lot of emphasis on obesity because of its rising prevalence and links to conditions like diabetes, cardiovascular disease, and mortality. According to recent research, those who experience high levels of

stress in emotional eating (EE). The etiology of obesity may be significantly influenced by emotional eating. Compared to their Caucasian counterparts, adolescents' emotions are commonly referred to as are most at risk for being overweight. Eating in response to a variety of unfavorable emotional eating.

### Need of the study

The study's objective was to determine how much obese people differ from normal-weight and overweight people in terms of their emotionally driven states and addictive-like eating practices. The purpose of the current study is to determine how obese and non-obese teenagers differ in terms of self-concept, various aspects of the family environment, and overall wellbeing.

Emotional eating can be caused by various mechanisms such as using eating to cope with negative emotions or confusing internal state of hunger and satiety with physiological change related to emotions. Eating habits can be linked to emotions, whether person is feeling happy, sad, angry, emotional eaters can turn to food for comfort and satisfaction. This habit of 'emotional eating' or 'comfort eating' can become a problem if it became a regular habit as this tends to result in over eating and weight gain. It may affect both physical and mental health. For example, in depression some people eat more for coping but they don't know about what they are eating, how much number of foods they are eating, even they also don't know that how this affects their physical health. Presenting the evidence through this research the author believes that the problem will address a significant issue that adolescents are facing.

### Objectives

1. Determine BMI of adolescents by screening.
2. Assess emotional eating among obese and non-obese adolescents.
3. Compare emotional eating pattern among obese and non-obese adolescents.
4. Find out association of emotional eating with selected socio-demographic variables.

## II. Materials & Methods

A Quantitative research approach was used in the study. For this study, non-experimental Descriptive research design was used to assess emotional eating on obese and non-obese adolescents of selected colleges of University, Vadodara. The target population was all the

obese and non-obese adolescents. The sample size for the study was estimated as  $n = 240$ . By using purposive sampling method, 120 obese adolescents and 120 non-obese adolescents were recruited. Ethical approval was obtained from Parul University Institutional Ethical Committee with reference no. IECHR/PIMSR/00/81734/4305.

### Criteria for selection of sample

#### Inclusion Criteria:

1. Adolescents of selected institute of colleges.
2. Adolescents of who are available during the period of study.
3. Adolescents who are willing to participate.
4. Adolescents with BMI 18.5-22.9 kg/m<sup>2</sup>
5. Adolescents with BMI  $\geq 25$  kg/m<sup>2</sup>

#### Exclusion Criteria:

1. Adolescents with BMI  $> 18.5$  kg/m<sup>2</sup>
2. Adolescents with BMI 23.0-24.09 kg/m<sup>2</sup>
3. Adolescents who are undergoing any form of treatment for obesity.

### Instruments

To get the baseline data, socio-demographic variables were used and emotional eating questionnaire was used to assess emotional eating on obese and non-obese adolescents. In this study data was collected from the adolescents who all are present at the time of data collection. After extensive review of literature and suggestions from experts following tools were developed for attainment of objectives and to test the assumption. The tools developed to assess emotional eating on obese and non-obese adolescents divided into 2 sections. Section A: Socio-demographic tools: This tool includes combination of social and demographic factors. In this study we used questionnaire on socio-demographic variables that includes age, gender, eating habits, religion, birth order in family, siblings, residence, stream, self-reported health status, paternal education, maternal education, family structure and occupational status of father.

Section B: Emotional Eating Questionnaire Scale: Emotional Eating Questionnaire Scale (EEQS) is a self-structured scale used to measure the emotional eating pattern of a person. A 25-item self-report scale designed to assess the extent and severity of emotional eating among the obese in this scale.

Scoring interpretation were divided into 4 categories.

[1] No emotional eating (<25). [2] Mild emotional eating (25-50).

[3] Moderate emotional eating (50-75). [4] Severe emotional eating (75-100).

### Procedure for Data Collection

Permission was obtained from Parul University Institutional Ethical Committee, Vadodara, and Gujarat with approval no.-IECHR/PIMSR/00/81734/4305. Permission was obtained from the Head of Institutes to proceed with data collection. A participant's written informed consent was taken for data collection. A BMI value was checked for all the participants who were present at the time of data collection. On the basis of the BMI, obese and non-obese adolescents were recruited. Of these, 120 were obese adolescents and 120 were non-obese adolescents. From all the participants, all the Socio-demographic and Emotional eating questionnaire data were collected.

### Plan for Data Analysis

The analysis was done on the basis of objectives. The collected data were analyzed by using both descriptive and inferential statistics.

#### Descriptive Statistics

Frequencies and percentages to be used for analysis of demographic characteristics.

#### Inferential Statistics

Chi Square test was performed to assess the association of emotional eating among obese and non-obese adolescents with Socio-demographic variables.

As per the advice of experts, data analysis was done by following steps-

1. Organization of data in master sheet.
2. Analysis of demographic data by frequency and percentage distribution was calculated.
3. Data presented in tables and figures for better clarification.
4. Find out association of emotional eating with selected socio-demographic variables.

### III. RESULTS

With regard to baseline characteristics [Table 1], among obese adolescents' majority 107(89.2%) were in 18-19 years of age, 10(8.3%) were in 17-18 years of age and 3(2.5%) were in 16-17 years of age where as among non-obese adolescents' majority 101(84.2%) were in 18-19 years of age, 18(15%) were in 17-18 years of age and 1(0.8%) were in 16-17 years of age.

Regarding gender of obese adolescent, maximum 83(69.2%) were female and 37(30.8%) were male and among non-obese adolescents' maximum 80(66.7%) were female and 40(33.3%) were male. With regard to eating habits among obese adolescents, majority 75(62.5%) were vegetarian, 40(33.3%) were non-vegetarian and 5(4.2%) were eggetarian. Among non-obese adolescents' majority 75(62.5%) were vegetarian, 35(29.2%) were non-vegetarian and 10(8.3%) were eggetarian. According to religion of obese adolescents, maximum 105(87.5%) belongs to Hindu, 10(8.3%) belongs to Muslim and 5(4.2%) belongs to Christian. Among non-obese adolescents, maximum 109(90.8%) belongs to Hindu, 6(5%) belongs to Muslim and 5(4.2%) belongs to Christian.

In terms of level of emotional eating [Table 2] shows that among obese and non-obese adolescents, majority 81(67.5%) had mild emotional eating, followed by 26(21.7%) had moderate emotional eating, 9(7.5%) had no emotional eating and 4(3.3%) had severe emotional eating. Among non-obese adolescents' majority 80(66.7%) had mild emotional eating, followed by 30(25%) had no emotional eating and 10(8.3%) had moderate emotional eating. On comparison it is clearly evident with the given data those obese adolescents are emotional eating with 21.7% moderately emotional eating and 3.3% including in severe emotional eating.

Comparison of emotional eating among obese and non-obese adolescents [Table 3] shows that among obese adolescents mean and SD was  $43.84 \pm 14.21$  and among non-obese adolescents mean and SD was  $33.40 \pm 13.32$  with mean difference was found to be 10.44. Comparison of emotional eating among obese and non-obese adolescents was tested by using unpaired t test with  $t=5.869$  at  $df=238$  and  $p=0.001$  indicates statistically significant at  $p<0.05$  level of significance. Findings revealed that there is significant difference in emotional eating among obese and non-obese adolescents with clear indication of high mean score of emotional eating in obese 43.84 in compared to 33.40 mean emotional eating score of non-obese with a mean difference of 10.44.

The association of emotional eating with socio-demographic variables was tested by using chi-square test. Gender of obese adolescents was found significant association with emotional eating at  $p<0.05$  level of significance and all the socio-demographic variables were non-significant with emotional eating among non-obese adolescents.

Table:1 Frequency and percentage distribution of demographic variables of Obese and Non- obese adolescents				
Demographic Variable	Obese (N=120)		Non-obese (N=120)	
	F	%	F	%
Age group				
a. 16-17 years	3	2.5	1	0.8
b. 17-18 years	10	8.3	18	15
c. 18-19 years	107	89.2	101	84.2
Gender				
a. Male	37	30.8	40	33.3
b. Female	83	69.2	80	66.7
Eating habits				
a. Veg	75	62.5	75	62.5
b. Non veg	40	33.3	35	29.2
c. Eggetarian	5	4.2	10	8.3
Religion				
a. Hindu	105	87.5	109	90.8
b. Muslim	10	8.3	6	5
c. Christian	5	4.2	5	4.2
d. Sikh	0	0	0	0
Birth order in family				
a. First	71	59.2	52	43.3
b. Second	34	28.3	46	38.3
c. Third	15	12.5	15	12.5
d. Others	3	2.5	7	5.8
Number of siblings				
a. 0	16	13.3	17	14.2
b. 1	63	52.5	54	45
c. 2	33	27.5	25	20.8
d. 3 and above	8	6.7	24	20
Do you reside with parents?				
a. Yes	67	55.8	76	63.3
b. No	53	44.2	44	36.7

Stream				
a. Science	105	87.5	99	82.5
b. Commerce	12	10	11	9.2
c. Arts	3	2.5	10	8.3
Residence				
a. Urban	81	67.5	69	57.5
b. Semi urban	22	18.3	19	15.8
c. Rural	17	14.2	32	26.7
Self-reported health status				
a. Poor	1	0.8	5	4.2
b. Average	30	25	28	23.3
c. Good	89	74.2	87	72.5
Paternal education				
a. Illiterate	1	0.8	9	7.5
b. Primary	7	5.8	14	11.7
c. Secondary	33	27.6	20	16.7
d. Graduation	67	55.8	60	50
e. post-Graduation	12	10	17	14.2
Maternal education				
a. Illiterate	4	3.3	10	8.3
b. Primary	14	11.7	26	21.7
c. Secondary	24	20	28	23.3
d. Graduation	68	56.7	41	34.2
e. post-Graduation	10	8.3	15	12.5
Family structure				
a. Single	14	11.7	31	25.8
b. Nuclear	60	50	44	36.7
c. Joint	46	38.3	45	37.5
Occupational status of father				
a. Govt employed	23	19.2	25	20.8
b. Privately employed	38	31.7	35	29.2
c. Unemployed	1	0.8	4	3.3
d. Business	36	30	33	27.5
e. Agriculture	22	18.3	23	19.2

**Table 2: Level of emotional eating among obese and non-obese adolescents**

Emotional Eating	Obese (N=120)		Non-Obese (N=120)	
	F	%	f	%
No emotional eating	9	7.5	30	25
Mild emotional eating	81	67.	80	66.7
Moderate emotional eating	26	21.7	10	8.3
Severe emotional eating	4	3.3	0	0

**Table 3: Comparison of emotional eating among obese and non-obese adolescents**

Emotional eating	Mean	SD	Mean	t value	df	p value
Obese	43.84	14.21	10.44	5.869	238	0.001*
Non-obese	33.40	13.32				

SD: Standard deviation

**Table 4: Association of emotional eating with socio-demographic variables of obese and non-obese adolescents**

Demographic Variables	No	Mild	Moderate	Severe	Chi-square	P value
<b>Gender</b>						
Male	5	21	9	2	4.357 2	0.0019*
Female	4	60	17			

#### IV. DISCUSSION

The findings of the study were discussed in terms of the objectives and assumptions formulated for the Emotional Eating Questionnaire Tool for the questionnaire, which was adapted to assess emotional eating in obese and non-obese adolescents of selected colleges. The demographic variables were assessed in the study to collect baseline data from all the participants. We screened 400 adolescents; out of them, 120 obese adolescents and 120 non-obese adolescents were taken in our study. After collecting the data, they analyzed it by using descriptive and inferential statistics. Findings from the study show that there is a significant difference in emotional eating among obese and non-obese adolescents. The association between emotional eating among obese adolescents and selected socio-demographic variables was tested by using the chi-square test. The results showed that female obese adolescents were found to have a significant association with emotional eating at a  $p < 0.05$  level of significance.

Similar findings were reported in the study conducted by **Williams, Trevor Franks, Susan Tiu, Cindy BS Goyer, Alexandria BS Fulda, Kimberly** (2018) on Gender Related Differences in Emotional Eating and its Role in Obesity. The purpose of this study is to analyze whether or not there are gender differences in EE and if it is tied to obesity. Chi square analysis was used to compare high and low EE by gender. Results: Out of the 97 participants, 39% were overweight/obese. 56% were white/Caucasian, 28% were Asian, 8% were Hispanic, 8% were other. 54% were male and 56% were female. When comparing the overweight/obese individuals in each gender, EE was higher in overweight/obese women (Mean=77.87, SD=19.98) as compared to normal weight women (Mean=89.16, SD=14.84) ( $t=2.256$ ,  $p=.028$ ).<sup>5</sup> In this study Gender of obese adolescents was found significant association with emotional eating at  $p < 0.05$  level of significance.<sup>5</sup>

Similar findings were reported in the study conducted by **Yağmur Sezer Efe et al. Arch Psychiatr Nurs. 2020 Dec.** The SASC-R and EES-C mean scores of obese adolescents were

$39.03 \pm 13.09$  ( $p \leq 0.001$ ) and  $76.66 \pm 16.30$  ( $p \leq 0.001$ ), respectively. The mean scores of PSS-AI, PSS-SS and PSS-PA subscales in obese adolescents were  $26.80 \pm 4.42$  ( $p \leq 0.001$ ),  $28.14 \pm 4.06$  ( $p \leq 0.001$ ) and  $22.32 \pm 4.63$  ( $p = 0.037$ ), respectively. There was a low-level correlation between the EESC and SASC-R mean scores of obese adolescents ( $p < 0.05$ ). The mean scores of PSS-AI, PSS-SS and PSS-PA subscales of PSS with EES-C and SASC-R of obese adolescents were not correlated ( $p > 0.05$ ).

In the study, the mean scores of the emotional eating and social anxiety of obese adolescents were higher than healthy ones. There was a low level of positive correlation between emotional eating and social anxiety mean score of obese adolescents.<sup>6</sup>

#### V. CONCLUSION

Emotional eating is common in adolescents as they are exploring and indulging in many events of life that puts them in stressful situations. Many negativity and confusions adolescents face in daily life and to escape these stressful moments, they find food as a stress buster, distraction, dopamine booster, etc. After analyzing and evaluating the data collected and by comparing this to obese and non-obese adolescents, researcher found that obese adolescents are affected more with emotional eating.

#### COMPETING INTERESTS

No competitive financial interest declaration by any individual or entity or non-financial competing interests, such as political, economic, religious, ideological, scholarly, scientific and commercial or any other competing interests are related in this manuscript.

#### ETHICAL APPROVAL

Ethical approval was obtained from Parul University Institutional Ethical Committee with reference no. IECHR/PIMSR/00/81734/4305

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