



## Original Article

## Prevalence and Identification of Binge Eating Pattern Among University Students: A Cross Sectional Study

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## ARTICLE INFO

## Key Words:

Prevalence, binge eating, stress, eating disorder, junk food

## How to Cite:

Aslam, M., Shahid, M., Sohail, A., Fatima, R., Tayyaba, A., Ijaz, K., Mughal, M., Tahir, M., Fatima, N., Shafi, I., & Irfan, M. U. . prevalence and identification of binge eating pattern among university students; a cross sectional study. *Pakistan Biomedical Journal*, 5(4). <https://doi.org/10.54393/pbmj.v5i4.191>

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Received Date: 19th April, 2022

Acceptance Date: 25th April, 2022

Published Date: 30th April, 2022

## ABSTRACT

Binge Eating Disorder (BED) is defined as a condition in which there is consumption of food in larger amounts in a very short time period than normal. Every week over 3 months the episodes of BED occur. BED is a diagnosis which differs from bulimia nervosa which is also an eating disorder. **Objective:** To find out the prevalence and identification of binge eating patterns among university students **Methods:** A cross sectional study was done at The University of Lahore, Lahore Campus for duration of 4 months, using convenient sampling technique. Data was collected from 100 university students by a self-governing questionnaire. Different statistical tools were used in SPSS to analyze the data which included inferential statistics and cross tabulation. **Results:** The results revealed that students in this study included 32% males and 68% females from middle and upper middle socioeconomic class. The results revealed that 13% of students had fixed meal time while 87% did not, 84% were influenced by factors such as advertisements and stress etc., 83% could not stop eating, 54% were hostelites, 89% consumed instant food, 54% avoided hostel food and ate fast food, 80% had their habits changed due to being away from parents, 65% were stressed by eating in public, 76% of them had an influence of friends on their food habits and 61% were depressed after over-eating. According to the P-values which were <0.05 BED and stress (other factors) had a strong association with each other **Conclusions:** This study concludes that young generation needs guidance and help to cope up the stress and negative factors around them causing BED, promoting fast food and having bad eating habits. So, government as well as private sectors needs to do work on it by promoting activities and inducing strategies which promote healthy eating and coping up stress strategies.

## INTRODUCTION

Binge Eating Disorder (BED) is defined as a condition in which there is consumption of food in larger amounts in a very short time period than normal in episodes. Every week over 3 months these episodes of BED occur. BED is a diagnosis which differs from bulimia nervosa which is also an eating disorder [1,2]. BED is commonly diagnosed in obese individuals, but it is not only limited to obese individuals as it is also present in normal weight or underweight [3,4]. BED is mostly common among women than men and it is most commonly present in the age of early twenties [5]. About 79% of individuals with BED have 1 psychological disorder and 49% of individuals have a lifelong diagnosis of 2 or more comorbid diseases [5]. Another analysis of a study showed that of those patients which have more than one diagnosis, 23% had substance

use disorders, 43% had impulse-control disorders, 46% had mood disorders and 65% had anxiety disorders [6]. BED has same neurobiology as that of substance use disorders have [7]. A number of factors have an impact on the eating patterns of the people living in hostels. The Ecological Systems Theory of Bronfenbrenner states that "environment has a vital effect on the child's development". Peer pressure includes relationships with family, friends and media [8]. Peer pressure encourages the female adults to lose weight, be in shape and be slim [9]. A disturbed relationship between mother and daughter may also lead to BED [10]. The conversation amongst the female peers about dieting, being slim and leaving meals is also a cause of BED. In males, BED is promoted mostly when their fathers comment on their weights and bodies. Eating with

social norms acts as a peer pressure promoting binge BED by adults in their own time. In male peers' BED is also being promoted to increase one's body weight and muscle mass [9]. Researchers have also stated binge eating as an "escape from awareness" for reduction of distress and emotions. BED is defined as eating without any need or laxative abuse. It's mostly linked with obesity symptoms. Continuous eating without need keeps the stress system in chronically activated state which changes the motivation and promotes binge eating among the adults. Continuous stress increases food intake. Prolonged stress leads to dysfunction in the regulatory system and introduces biological changes and increases disease susceptibility [10]. Uncontrollable stress changes the patterns of diet, consumption of hyperpalatable foods, BED and promotes increasingly compulsively behavior [11]. 40% human increase their caloric intake when they are stressed and 40% decrease their caloric intake, the rest 20% don't change their eating patterns. The consumption of fast food and levels of stress were directly proportional to each other. This means that low levels of stress were associated with low consumption of fast food and vice versa. By eating foods high in fat and sugar level used to relive stress level. While it might make you feel calmer, that does not mean it is good for you [12]. Stress can also shut down appetite in a short time period. Adrenal glands receive messages from nervous system to stop pumping of epinephrine hormone by kidneys. Fight or flight response of body is triggered by epinephrine [13]. In a study conducted in 2018, researchers found that rate of anxiety and depression had increased in age ranges of 6 to 17, from 5.4% in 2003 to 8.4% in 2011-12. Environmental factors also affect the intake of food because the longer dines with his friend in a restaurant, the more he will order forgetting about his daily required consumption of food [14]. A study was conducted by Nihaya A. Al-sheyab *et al.*, (2018) to enlist students of 8th, 9th and 10th grades of female and male gender from schools of northern Jordan. Data was collected from a self-governing, online based questionnaire which was given to 738 participants for observation of relationship between eating disorders risk and peer pressure in adolescents. Peer pressure interaction means scores were higher in girls than for boys statistically whereas mean scores for boys than girls were higher statistically so it was suggested that healthcare professionals should conduct a primary prevention program which is school-based for disordered eating behaviors present in children [15]. Diane L. Rosenbaum *et al.*, (2015) conducted a study to examine different psychological factors such as anxiety, depression and stress with relation to BED. Data was collected through online surveys from a community sample which included women and men of diversified backgrounds. The results of

this study concluded in need for more comprehensiveness (i.e., anxiety, stress) of proportions of negative affect of BED when examined [16]. A study was undertaken by Ebtehal Almogbel *et al.*, (2019) to examine psychological stress levels in undergraduate students of Qassim University and also for the investigation of stress associated changes in eating habits of students of Qassim University. It was a cross-sectional study conducted on 614 undergraduate students. The results of this study showed that 28.2% of total participants suffered from stress; 17.3%, 49.1%, 24.8% and 8.7% of participants were diagnosed from mild, moderate, severe and extremely severe stress, respectively [17]. Hill DC *et al.*, (2018) conducted a study for investigation of possible effects of different emotional symptoms and life stress on different eating behaviors in students of junior and high school in China. Total students in this study were of 5473 in Xuzhou, Jiangsu Province which was a survey-based study it involved clustering sampling. Social and demographic data, emotional symptoms, life stress and adolescents eating behaviors all were collected in this survey. The results of this study showed positive relation between these and eating behaviors. In addition to this, these were also associated significantly with unhealthy eating behaviors in adolescents, after adjustment of gender, age, BMI, education level of parents and economic status of family which is self-assessed [18]. Jinkyung Choi (2020) conducted a study to investigate college student's physical activities and dietary behaviors according to the stress levels they perceive. Self-formed questionnaires were given to the college students in the campus in Korea. Students with high stress levels which were assessed had more proportion of unhealthy dietary behaviors such as consumption of readymade and prepared meal [19]. A study was conducted by Grace RMPH *et al.*, (2018) in which it was seen that food insecurity is also related with overeating and excess weight in general. Associations between BED and food insecurity are not known, but this is important to examine because BED is related with more severe mental and physical health problems than overeating or obesity alone [20].

## METHODS

A cross sectional study was done at The University of Lahore, Lahore Campus, to find out the prevalence of binge eating patterns among 100 university students through purposive sampling technique. Data was collected through pretested questionnaire comprising of questions about relation between peer pressure, stress and environmental factors with eating patterns such as fast-food eating. Both males and females were included in study for a period of 4 months. Data was analyzed through SPSS by applying inferential statistics and cross tabulation.

## RESULTS

The results of the current study revealed that 42% were males and 58% were females. Majority 54% of participants were living in hostels and 11% had history of eating disorders. 68% were overweight according to Body Mass Index and 18% were belonging to obesity class1. (Table 1)

Parameters		Frequency
Gender	Male	42
	Female	58
Hostelites	Yes	54
	No	46
Eating Disorder Diagnosis/History	Yes	11
	No	89
Age	18-20 years	26
	21-23 years	38
	24-26 years	36
Height	56-60 inches	9
	61-65 inches	39
	66-70 inches	37
	71-75 inches	15
Weight	40-50 kg	13
	50-60 kg	26
	60-70 kg	51
	70-80 kg	43
	80-90 kg	33
Body Mass Index	18.5 -24.9(normal weight)	13
	25 -29.9(overweight)	68
	30 -34.9(obesity class1)	18
	35 -39.9(obesity class2)	1

**Table 1:** Demographics of Participants

Binge Eating Patterns		Frequency
Fixed Meal Time	Yes	13
	No	87
Uncontrolled eating	Yes	81
	No	19

Purchasing Habits	Yes	84
	No	16
Instant Food Consumption	Yes	89
	No	11
Fast Food Consumption	1-2 times/week	23
	3-4 times/week	27
	5-6 times/week	28
	7 times or more/week	22
Food craving dependent on advertisement	Yes	81
	No	19
Influenced by friends	Yes	76
	No	24
Stressed by eating in public	Yes	65
	No	35
Depressed after overeating	Yes	61
	No	39
Vomit to avoid weight gain	Yes	54
	No	46
Laxative use	Yes	22
	No	78

**Table 2:** Prevalence of Binge Eating Patterns among Participants  
Binge eating patterns were more prevalent in participants as 87% had no fixed meal time, 91% had no control on eating and normally 89% were consuming instant food. Junk food consumption predominates among participants as mostly 28% were consuming junk food 5-6 times /week. 64% feel depressed after overeating and 54% vomit out to avoid weight gain and 76% were influenced by their friends eating pattern (Table 2).

		BMI of participants				Total	P-value
		18.5 - 24.9 (normal weight)	25 - 29.9 (overweight)	30 - 34.9 (obesity class1)	35 - 39.9 (obesity class2)		
Gender of participants	Male	0	29	3	0	32	0.05
	Female	3	46	16	1	66	
Total		3	77	19	1	100	

		BMI of participants				Total	P-Value
		18.5-24.9 (normal weight)	25-29.9(overweight)	30-34.9(obesity class 1)	35-39.9(obesity class 2)		
Fast food consumption of participants	1-2 times per week	1	3	1	0	5	0.016
	3-4 times per week	1	38	3	0	42	
	5-6 times per week	1	24	6	0	31	
	7 times or more per week	0	12	9	1	22	
Total		3	77	19	1	100	

**Table 3:** Association of Body Mass Index with Gender and Junk food Consumption

According to results, 3 females and 3 males had the normal BMI, 29 males and 48 females out of 77 were overweight. 3 male and 16 females out of 19 are of obesity class 1; which means female students are more overweight and obese in this study. 1 out of 5 participants consume fast food 1-2 times per week, 1 out of 42 consume 3-4 times per week, 1 out of 31 consume 5 to 6 times per week, 0 out of 22 consume 7 times or more and these all fall in the category of normal weight; total normal weight participants are 3. 3 out of 5 participants consume fast food 1-2 times per week, 38 out of 42 consume 3-4 times per week, 24 out of 31 consume 5 to 6 times per week, 12 out of 22 consume 7 times or more and these all fall in the category of over-weight; total overweight participants are 77. Chi square test predicts that there is a strong relationship of gender (female) with being overweight as p-value is <0.05 (Table 3).

		BMI of participants				Total	P-Value
		18.5-24.9 (normal weight)	25-29.9(overweight)	30-34.9(obesity class 1)	35-39.9(obesity class 2)		
Uncontrollable Eating pattern	less than 1 day per week	1	6	0	0	7	0.056
	2 or 3 days per week	2	65	19	1	87	
	4 or 5 days per week	0	4	0	0	4	
	1 day per week	0	2	0	0	2	
Total		3	77	19	1	100	

**Table 4:** Association of Body Mass Index with Uncontrollable Eating Pattern

The results showed that, 65% participants have eaten uncontrollably are under over-weight class and there are 19 participants in obese1 and 1 in class 2; total participants who have eaten this way are 87. For 4 or 5 days per week are 4 participants which are in overweight class and for 1 day per week are 2 which are overweight. This means participants who eat uncontrollably for 2 or 3 days a week are more in overweight and obesity class1. Chi-square test predicts that there is a strong relationship between eating in large amounts and being overweight as p-value is <0.05 (Table 4).

## DISCUSSION

According to the results of current study 58% were female

and mostly 48% lied in the overweight category. A study was conducted by Nihaya A. Al-sheyab et al., (2018) on 8th, 9th and 10th grades of female and male students from schools of northern Jordan. The results of study showed that eating disorders risk and peer pressure were higher in girls than for boys [15]. Present study results showed that 65% participants were stress eaters and consume mostly junk foods. Similar results were found by Ebtehal Almgobel et al, (2019) 28.2% of total participants suffered from stress and mostly consumed junk food [17].

## CONCLUSIONS

It is concluded from the study that there is a relation between social factors such as stress, environmental factors and peer pressure and binge eating or over eating which results in overweight or increased weight people. Also, more females are affected by these factors and are involved in binge eating. The percentage of overweight and obese females is more prevalent as mostly are hostilities which also shows that stress and being away from parents affects eating habits which become unhealthy and it also induces binge eating. So, there is a need for making strategies to cope up these factors and stress so binge eating as well as obesity can be reduced. This study only included a small part having a small sample size which means there should be more research on this topic including a larger sample size.

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