

Binge eating disorder among obese/overweight in Pakistan: Under-diagnosed, undertreated and misunderstood

Abstract

Introduction: Obese persons with BED have compromised functioning mostly in psycho-social aspects of Health-Related Quality of Life (HRQoL) as poor physical functioning is related to obesity. Despite the higher prevalence of BED compared with other eating disorders, lack of understanding of BED by physicians and inadequate physician-patient communication regarding BED may result in its under diagnosis.

Objective: The objective of the study was to assess binge eating disorder among overweight/obese in two major cities of Pakistan.

Method: A descriptive cross-sectional study design was used. A pre-validated data collection tool Binge Eating Disorder Screener-7 (BEDS-7) was distributed to a sample of 382 obese/overweight individuals. Binge Eating Disorder Screener-7 (BEDS-7) questionnaires is comprised of seven questions that directly evaluate the patient's eating patterns and behaviors for binge eating disorder. Convenient sampling technique was used to select the respondents. After data collection, the data was cleaned, coded and entered in SPSS version-21. Chi-square test ($p \geq 0.05$) was performed to find out the association between different variables.

Results: The results revealed that nearly half of the respondents of the overweight/obese had an eating disorder among them. Out of the total sample 35.1% (n=134) respondent, agreed that they had episodes of excessive overeating during the last 3 months. The results highlighted that 64.9% (n=248) had no binge eating disorder while 15.7% (n=60) of the respondents had moderate binge eating disorder and 14.9% (n=57) had severe binge eating disorder.

Conclusion: The current study concluded that moderate binge eating disorder was seen among most of the obese individuals but BED in most of the cases goes undiagnosed. Binge eating disorder was more common among students and non-smokers. Early detection and evidence-based treatment strategies can help the patients to recover on initial stages and prevent from a further complication of binge eating disorder.

Keywords: binge eating disorder • obese • overweight • occurrence • Pakistan

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Introduction

Binge Eating Disorder (BED) is characterized by regular episodes of binge eating. An individual with Binge Eating Disorder (BED) has compensatory behaviors, such as self-induced vomiting or doing over-exercising after binge eating. This disorder involves two key features; firstly, eating a very large amount of food within a relatively short period of time e.g. within two hours and secondly, loss of control while eating e.g. feeling unable to stop oneself from eating [1]. Despite the higher prevalence of BED compared with other eating disorders, lack of understanding of BED by physicians and inadequate physician-patient communication regarding BED may result in its under-diagnosis [2]. Obese persons with BED have compromised functioning mostly in psycho-social aspects of Health-Related Quality of Life (HRQoL) as poor physical functioning is related to obesity [3]. Beside this eating disorder also influences the mental health of the patients and they seek for treatment interventions focusing on improving mental health domain of HRQoL [4]. Physical activity has been reported as an important treatment target for individuals with BED [5].

Pakistan has been ranked 9th among 188 countries facing obesity challenge around the globe [6]. One-quarter of the Pakistani population has been classified as overweight/obese with alarming prevalence among women and youth [7]. The BDNF rs6265, in the presence of obesity, has been reported to be associated with elevated risk of anomalous metabolic, behavioral and physical traits and obesity-related co-morbidities in Pakistani population [8]. Risk of developing eating disorders indicating females more prone than males has been reported in Pakistan. Most of the eating disorders in Pakistan go undiagnosed. Though, early diagnosis and assessment of eating disorder can provide chances for improved treatment and recovery [9]. However, it will be challenging for the healthcare system of Pakistan for providing eating disorder treatment services with the current infrastructure, facilities, and human resources in the future. Global statistics show a high prevalence of obesity in Pakistan but unfortunately, strategies to control and tackle it are not integrated into the annual healthcare plans [8]. Thus, the general objective of the study was to assess binge eating disorder among overweight/obese in two major cities of Pakistan. The study findings provide baseline data regarding the current prevalence of binge eating disorder. It will help relevant stakeholders to design effective strategies

to evade the incidence of eating disorders as well as improve diagnosis of such disorders, especially among obese/overweight people.

Methodology

The descriptive cross-sectional study design was used to assess binge eating disorder among overweight/obese in relation to BMI in two major cities of Pakistan. Research approval for the current study was obtained from the Ethical Committee of Hamdard University (Ref. No. HU/DRA/2017/554). Beside this approval was taken from Medical Superintendent of hospitals (OPDs), owner of clinics, fitness centers, and community pharmacies. Written/verbal consent was taken from every respondent. Likewise, the respondents were guaranteed for the secrecy of information. Study sites for this research included OPDs of different health care facilities, community pharmacies, fitness centers and obesity clinics located in twin cities of Pakistan. Study respondents included adults having BMI ≥ 25 or ≥ 30 and categorized as overweight or obese persons respectively, between 18-65 years old; both genders (male vs. female) and who could easily read and write. While a person with physical limitations; bodybuilders; pregnant ladies and those on treatment for a psychological disorder were excluded.

A sample size of the study population was calculated with the help of Raosoft® sample size calculator which came to be 382 to achieve a 95% confidence interval with a 5% margin of error. Convenience sampling technique was used to select the respondents. Data was collected directly from the respondents at their respective facility. A pre-validated data collection tool Binge Eating Disorder Screener-7 (BEDS-7) was used. Binge Eating Disorder Screener-7 (BEDS-7) questionnaires is comprised of seven questions that directly evaluate the patient's eating patterns and behaviors for binge eating disorder. It is proposed for the screening of BED patients only. The first question is related to the eating pattern while remaining all questions are related to eating behavior. BEDS-7 scores are weighted sums of only the last five questions. The composite scores range from 0-20 with 0-5 indicating mild disorder; 6-10 moderate; 11-15 severe and 16-20 extreme. Pilot testing was conducted at 10% of the sample size to test the reliability of the tool. The value of Cronbach's alpha was 0.82 which was satisfactory and considering that 0.68 is the acceptable cut off value. The questionnaires were self-administered to the respondents and collected

back on the same day to avoid any biases. After data collection, the data was cleaned, coded and entered in SPSS version-21. Descriptive statistics comprising frequency and percentages were calculated. Chi-square test ($p \geq 0.05$) was performed to find out the association between different variables.

Results

Out of 382 respondents, 63.6% (n=243) were males while 36.4% (n=139) were females. Likewise, 43.2% (n=165) were having an undergraduate qualification and were students. Of the total respondents, 52.9% (n=202) were overweight while 47.1% (n=180) were obese. On the other hand, 31.9% (n=122) of the total respondents had a family history of overweight/obesity while 68.1% (n=260) had no family history of overweight/obesity. Of the total respondents, 47.9% (n=183) were taking carbohydrates and 32.7% (n=125) were taking proteins as weekly major diet portion in their daily lifestyle. A detailed description of demographic characteristics is given in (Table 1).

The results revealed that nearly half of the

Indicator	Total n (%)
Age	
18-30 Y	253 (66.2)
30-40 Y	85 (22.3)
40-50 Y	24 (6.3)
>50 Y	20 (5.2)
Gender	
Male	243 (63.6)
Female	139 (36.4)
Marital status	
Married	143 (37.4)
Unmarried	239 (62.6)
Qualification	
Matriculation	46 (12.0)
Intermediate	63 (16.5)
Under graduate	165 (43.2)
Post graduate	108 (28.3)
Occupation	
Govt-employee	37 (9.7)
Private employee	92 (24.1)
Self-employee	35 (9.2)
Un-employee	52 (13.6)
Student	166 (43.5)
Residency	
Urban	293 (76.7)
Rural	89 (23.3)
BMI	
Overweight (25-29 kg/m ²)	202 (52.9)
Obese (30 and above kg/m ²)	180 (47.1)
Previously on any diet plan	

Yes	53 (13.9)
No	329 (86.1)
Regularly walk and exercise	
Yes	103 (27.0)
No	279 (73.0)
Using anti-obesity drug	
Yes	7 (1.8)
No	375 (98.2)
Any disease present	
Yes	61 (16.0)
No	321 (84.0)
Overweight/Obesity in family	
Yes	122 (31.9)
No	260 (68.1)
Smoking habit	
Yes	75 (19.6)
No	307 (80.4)
Weekly major diet portion	
Carbohydrates	183 (47.9)
Proteins	125 (32.7)
Fats	74 (19.4)

Table 2. Assessment of binge eating disorder among overweight/obese

Indicator	n (%)
During the last 3 months, did you have any episodes of excessive overeating (i.e., eating significantly more than what most people would eat in a similar period of time)?	Yes 134 (35.1)
	No 248 (64.9)

respondents of the overweight/obese had an eating disorder among them. Out of the total sample 35.1% (n=134) respondent, agreed that they had episodes of excessive overeating during the last 3 months (Table 2).

Of the total respondents having binge eating disorder, 12% (n=46) often had no control on overeating and 12.8% (n=49) sometimes continued eating though they were not hungry. It was also reported that 12.3% (n=47) never felt disgusted with their self or guilty afterward of overeating and 22.5% (n=86) never make their self-vomit, that is a means to control their body shape/weight (Table 3).

The results highlighted that 64.9% (n=248) had no binge eating disorder while 15.7% (n=60) of the respondents had moderate binge eating disorder and 14.9% (n=57) had severe binge eating disorder (Table 4).

Results indicated a significant association ($p=0.001$) was reported between respondents of different occupations as 6.3% (n=24) students had moderate binge eating disorder. Moreover, a significant association ($p=0.027$) was found among respondents

Table 3. Assessment of severity of binge eating disorder among overweight/obese

Indicator	n (%)	
During your episodes of excessive overeating, how often did you feel like you had no control over your eating (e.g., not being able to stop eating, feel compelled to eat, or going back and forth for more food)?	Never	28 (7.3)
	Sometimes	46 (12.0)
	Often	46 (12.0)
	Always	14 (3.7)
During your episodes of excessive overeating, how often did you continue eating even though you were not hungry?	Never	23 (6.0)
	Sometimes	49 (12.8)
	Often	48 (12.6)
	Always	14 (3.7)
During your episodes of excessive overeating, how often were you embarrassed by how much you ate?	Never	47 (12.3)
	Sometimes	36 (9.4)
	Often	39 (10.2)
	Always	12 (3.1)
During your episodes of excessive overeating, how often did you feel disgusted with yourself or guilty afterward?	Never	47 (12.3)
	Sometimes	33 (8.6)
	Often	33 (8.6)
	Always	21 (5.5)
During the last 3 months, how often did you make yourself vomit as a means to control your weight or shape?	Never	86 (22.5)
	Sometimes	21 (5.5)
	Often	17 (4.5)
	Always	10 (2.6)

having no smoking habit as 11.8% (n=45) reported moderate binge eating disorder (Table 5).

Discussion

Binge Eating Disorder is the most common eating disorder found in obese people. The prevalence of BED ranges from approximately 0.3 to 7% in community samples to between 9% and 30% in obesity clinics [9]. The results of the present study showed that the prevalence of binge eating disorder was less among obese/overweight people in twin cities of Pakistan. The respondents suffering from binge eating disorder had no control of overeating and continue eating even if they were not hungry. The disorder was seen common among both genders. Similar findings were reported from a study conducted in USA which also indicated that BED possesses unique characteristics including loss of control on overeating and feel of

Table 4. Interpretation of binge eating disorder among overweight/obese

Indicator	n (%)
No disorder	248 (64.9)
Mild	6 (1.6)
Moderate	60 (15.7)
Severe	57 (14.9)
Extreme	11 (2.9)

Note: BED score and severity: Mild: 0-5; Moderate: 6-10; Severe: 11-15; Extreme: 16-20

Table 5. Impact of demographic characteristics on severity of binge eating disorder

Variable	No disorder	Mild disorder	Moderate disorder	Severe disorder	Extreme disorder	p-value
	n (%)	n (%)	n (%)	n (%)	n (%)	
Age						
18-30 Y	168 (44.0)	2 (0.5)	41 (10.7)	37 (9.7)	5 (1.3)	0.935
30-40 Y	49 (12.8)	4 (1.0)	14 (3.7)	14 (3.7)	4 (1.0)	
40-50 Y	16 (4.2)	0 (0.0)	2 (0.5)	4 (1.0)	2 (0.5)	
>50 Y	15 (3.9)	0 (0.0)	3 (0.8)	2 (0.5)	0 (0.0)	
Gender						
Male	153 (40.1)	3 (0.8)	37 (9.7)	40 (10.5)	10 (2.6)	0.097
Female	95 (24.9)	3 (0.8)	23 (6.0)	17 (4.5)	1 (0.3)	
Marital status						
Married	93 (24.3)	4 (1.0)	19 (5.0)	22 (5.8)	5 (1.3)	0.977
Unmarried	155 (40.6)	2 (0.5)	41 (10.7)	35 (9.2)	6 (1.6)	
Qualification						
Matriculation	27 (7.1)	0 (0.0)	6 (1.6)	11 (2.9)	2 (0.5)	0.428
Intermediate	44 (11.5)	2 (0.5)	9 (2.4)	7 (1.8)	1 (0.3)	
Under graduate	106 (27.7)	3 (0.8)	23 (6.0)	28 (7.3)	5 (1.3)	
Post graduate	71 (18.6)	1 (0.3)	22 (5.8)	11 (2.9)	3 (0.8)	
Occupation						
Govt-employee	19 (5.0)	0 (0.0)	4 (1.0)	13 (3.4)	1 (0.3)	0.001
Private employee	53 (13.9)	2 (0.5)	22 (5.8)	11 (2.9)	4 (1.0)	
Self-employee	19 (5.0)	0 (0.0)	5 (1.3)	9 (2.5)	2 (0.5)	
Un-employee	37 (9.7)	2 (0.5)	5 (1.3)	7 (1.8)	1 (0.3)	

Student	120 (31.4)	2 (0.5)	24 (6.3)	17 (4.5)	3 (0.8)	
Residency						
Urban	190 (49.7)	0 (0.0)	48 (12.6)	46 (12.0)	9 (2.5)	0.427
Rural	58 (15.2)	6 (1.6)	12 (3.1)	11 (2.9)	2 (0.5)	
BMI						
Overweight	123 (32.2)	5 (1.3)	4 (1.0)	27 (7.1)	7 (1.8)	0.276
Obese	125 (32.7)	1 (0.3)	20 (5.2)	30 (7.9)	4 (1.0)	
Previously on any diet plan						
Yes	30 (7.9)	1 (0.3)	14 (3.7)	8 (2.1)	0 (0.0)	0.513
No	218 (57.1)	5 (1.3)	46 (12.0)	49 (12.8)	11 (2.9)	
Regularly walk and exercise						
Yes	71 (18.6)	0 (0.0)	17 (4.5)	12 (3.1)	3 (0.8)	0.373
No	177 (46.3)	6 (1.6)	43 (11.3)	45 (11.8)	8 (2.1)	
Using anti-obesity drug						
Yes	6 (1.6)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0.208
No	242 (63.4)	6 (1.6)	59 (15.4)	57 (14.9)	11 (2.9)	
Any family history of overweight/obese						
Yes	75 (19.6)	2 (0.5)	24 (6.3)	18 (4.7)	3 (0.8)	0.545
No	173 (45.3)	4 (1.0)	36 (9.4)	39 (10.2)	8 (2.1)	
Smoking habit						
Yes	39 (10.2)	3 (0.8)	15 (3.9)	16 (4.2)	2 (0.5)	0.027
No	209 (54.7)	3 (0.8)	45 (11.8)	41 (10.7)	9 (2.5)	
Weekly diet pattern having major portion						
Carbohydrates	115 (30.1)	3 (0.8)	31 (8.1)	28 (7.3)	6 (1.6)	0.745
Proteins	93 (24.3)	2 (0.5)	11 (2.9)	14 (3.7)	5 (1.3)	
Fats	40 (10.5)	1 (0.3)	18 (4.7)	15 (3.9)	0 (0.0)	

Note: Chi-Square test ($p \leq 0.05$)

guilt and shame, which do not more often happen with overeating. BED prevails among both gender frequently associated with overweight [10].

BED represents a public health problem equally important as bulimia nervosa. However, BED remains underdiagnosed in the majority of the patients. This highlight the clinical importance of questioning patients about eating problems even when not included among presenting complaints [11]. The results of the present study reported that most of the respondents had moderate binge eating disorder. The disorder was most commonly observed among students. Similar findings were reported from another study which reported a high prevalence of BED among students. The study also highlighted the need for assessment of self-esteem, child abuse and neglect, and family functions in detail as they are risk factors for EDs and affect the course of treatment [12]. Smoking has been reported as an appetite and weight control method in eating disorders. Smoking in individuals with eating disorders could be motivated more by desires for weight control than nicotine dependence [13]. The results of the

present study showed that moderate binge eating disorder was more commonly seen among non-smokers. In contrary to the current study findings smoking history or status was not associated with eating disorder psychopathology in BED but was significantly associated with depressive symptoms in participants with BED [14,15].

Conclusion

The current study concluded that the occurrence of binge eating disorder is less among obese/overweight people in twin cities of Pakistan. Although, moderate binge eating disorder was seen among most of the obese individual's BED in most of the cases goes misunderstood, undiagnosed and untreated. Binge eating disorder was more common among students and non-smokers. Early detection and evidence-based treatment strategies can help the patients to recover on initial stages and prevent from a further complication of binge eating disorder. Thus, interventions focused on the psychopathology associated with BED could reduce the influence of emotional nodes on binge eating.

Executive summary

Introduction: Obese persons with BED have compromised functioning mostly in psycho-social aspects of Health-Related Quality of Life (HRQoL) as poor physical functioning is related to obesity. Despite the higher prevalence of BED compared with other eating disorders, lack of understanding of BED by physicians and inadequate physician-patient communication regarding BED may result in it's under diagnosis.

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