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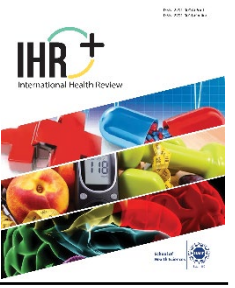

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Disordered Eating Behaviour and Food Addiction among University Students in Lahore, Pakistan

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ABSTRACT

Disordered Eating Behaviour (DEB) and Food Addiction (FA) are very common among adolescents and young adults across the world. In Pakistan, several studies have been conducted on Eating Disorders (EDs), but data remains scarce regarding DEB and FA. Nutrition students have a better understanding of healthy eating habits than non-nutrition or other students. To assess the prevalence of DEB and FA among nutrition students, allied health sciences students, and general department students, a cross-sectional survey was conducted in June-July 2020. A convenient sample was drawn from three different universities, namely University of South Asia, the University of Lahore, and the University of Veterinary and Animal Sciences, Lahore. A total of 239 participants (185 females and 54 males) volunteered to participate in the study. Two questionnaires (YALE and EAT-26) were employed and distributed through WhatsApp using an online google documents link. Independent sample t-test and ANOVA were employed to observe differences using SPSS 23. A *p*-value of < 0.05 was taken as significant. The results showed that the mean score of EAT-26 was 15.89 and the mean score of YALE was 4.1. Further, DEB and FA were found to be moderately and positively correlated. Both had a weak positive correlation with weight. Nutrition students had higher EAT-26 scores as compared to the students of other departments. Moreover, DEB and FA were not related to gender. Rather, DEB was found to be more prevalent in nutrition students, although there was no gender difference.

Keywords: disordered eating behaviour, food addiction, nutrition students

1. INTRODUCTION

According to the World Health Organization (WHO), poor dietary habits and lifestyle contribute to disease burden in adult age. Adults don't consume the daily recommended amount of healthy food; instead, they choose added sugars, processed meat, and trans-foods that lead to obesity

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and diseases [1]. An irregular eating habit that alters calorie intake or absorption and causes physical, psychological, and emotional distress is referred to as an Eating Disorder (ED). EDs can arise at any age. However, they are the most common in young adults because university students aspire to look smart and may resultantly engage in unhealthy eating habits. Individuals who do not regulate their dietary habits may develop disordered eating behaviours and various EDs (such as anorexia, binge eating, and bulimia). According to international surveys, the percentage of college-age students who engage in disruptive eating behaviours ranges from 8-20.5% [2]. The term Disordered Eating Behaviour (DEB) refers to a broad category of unhealthy eating practises that might not require an eating disorder diagnosis [3].

Food Addiction (FA) is a psychological addiction characterized by compulsive consumption of high-fat, high-sugar foods that strongly activate the human reward system, notwithstanding their adverse consequences. These foods have been demonstrated to encourage addiction, such as cognitive impairment that results in overeating brought on by cravings. According to a study, the prevalence of FA among German college students was 7.9% [4]. Participants in the community who had DEB also revealed that FA was typically present in 57.6% of cases. Further, 16.2% of people with EDs suffered FA, as compared to people without EDs [5]. Hence, the screening and early detection of EDs, DEB, and FA in young college students remains crucial.

Dealing with DEB and other related issues requires nutrition management. Unhealthy eating behaviours including dieting, sloppy meal preparation, vomiting, and uncontrollable eating are associated with DEB [6]. Students need to maintain healthy eating habits and a balanced diet to maintain a decent nutritional status because they tend to have poor eating habits. Nutrition students are thought to be knowledgeable about wholesome eating habits and capable of handling issues with their diet. According to a global survey, DEBs are frequently found in recent dietetic graduates since they don’t maintain healthy eating habits in order to appear professional or manage their studies [7]. The likelihood of DEB and FA was shown to be higher among first-year nutrition students in South Africa (33.3%), than it was in non-nutrition students (16.9) [8]. Similarly, a cross-sectional survey was carried out in Germany where it was shown that dietetic graduates were inclined to restrict their caloric intake in order to

lose weight, despite the fact that they did not have a higher percentage of DEB or EDs than other students [9].

According to a study, there is a direct link between FA and binge eating. According to another study, 56.8% of obese individuals with Binge Eating Disorder (BED) also satisfied the requirements for FA [5]. In a different study, 100% of participants were found to have bulimia nervosa, while 30% of participants had BN and met FA criteria [10]. Additionally, research shows that having DEB as well as FA is associated with worse health outcomes and symptoms [11, 12].

The current study aimed to assess the incidence of DEB and FA among university students. In Pakistan, a number of studies have been conducted on EDs and DEB but there is a scarcity of data regarding FA. Similarly, there has never been a study that evaluated eating disorders and addictive behaviours among nutrition and non-nutrition students in a comparative manner. Hence, this study aimed to determine the prevalence of DEB and FA within nutrition and non-nutrition students in Lahore, Pakistan.

2. METHODOLOGY

This observational and cross-sectional study was conducted on university students aged 18-25 years. These students were enrolled in 3 different universities in Lahore, namely University of South Asia, University of Lahore, and University of Veterinary and Animal Sciences. The participants were classified into 3 groups, including nutrition major (students majoring in nutrition and dietetics), allied health sciences (students majoring in other health departments), and general departments. The study took almost 2 months for data collection.

The sample size was intended to include 300 participants initially. However, due to COVID-19 restrictions, only 268 responses could be obtained. After the elimination of duplicate responses, the number went down to 239. Consequently, this study consisted of 239 participants, including 54 males and 185 females. Convenient sampling technique was used for the selection of respondents. The inclusion criteria involved the students enrolled in 5th semester or onwards in the BS program. The exclusion criteria was designed to exclude students of age below 18 and above 25 years. Self- reported psychological issues of the students were also excluded.

The Yale Food Addiction Scale (YFAS) was created in 2009 based on

the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), a publication by the American Psychiatric Association for the classification of mental disorders. It consists of 27 items. Internal reliability and validity were found to be adequate when applied to eating behaviours. Further, good discriminant validity and convergent validity were observed [13]. The Eating Attitude Test (EAT-26) is the commonly used screening questionnaire that evaluates a wide variety of symptoms of anorexia nervosa, bulimia nervosa, and DEB. EAT-26 has a high level of internal consistency [14] and was found to be highly reliable and valid in this study. On the other hand, EAT-26 did not provide a definitive diagnosis for EDs. In this regard, a score of more than 20 specified additional examination by a qualified health professional. Whereas, a score below 20 was regarded as indicative of major EDs [15].

During the COVID-19 pandemic, it was difficult to collect data in-person from the target population, so data was collected online through google forms. The faculty of different universities and departments cooperated with the researchers in distributing questionnaires to the students of their respective departments.

Descriptive statistics, including frequency, mean, and standard deviation (SD) were computed. To determine if there was a statistically significant difference between the means of the three groups, ANOVA test was utilized. To figure out the statistically significant difference between the mean values of two groups, independent sample t-test was used. The data was stored and analysed on SPSS 23.

2.1. Ethical Concerns

The approval for this study was obtained from the departmental research committee before data collection. Information regarding the research objectives was included in the online form and participation was voluntary. The confidentiality and anonymity of participant information were strictly maintained throughout the study.

3. RESULTS

Mean age was 22.02 years ($\pm$1.68). Mean weight and height of the participants were 58.21 kg and 164.29 cm, respectively. Average scores of EAT-26 was 15.89 and YALE had a mean score of 4.10, as shown in Table 1.

Table 1. Descriptive Statistics of the Participants (*n*=239)

Demographics	Mean	*SD*
Age (years)	22.02	1.68
Weight (kg)	58.21	13.47
Height (c m)	164.29	10.38
EAT-26	15.89	11.09
YALE	4.10	3.05

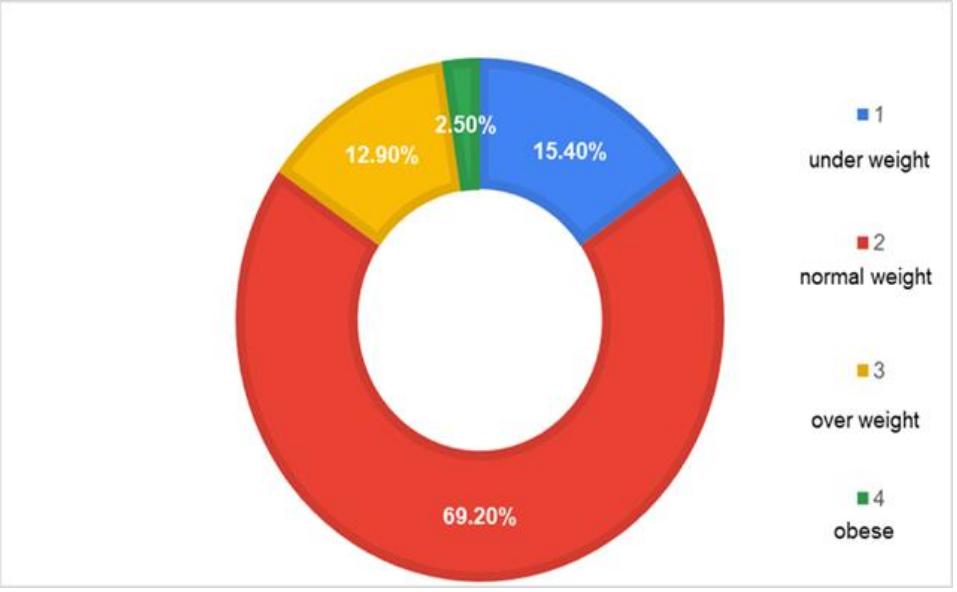

Figure 1. Pie Chart of Body Mass Index (BMI)

The percentage of research participants classified as underweight (15.40%), normal weight (69.20%), overweight (12.90%), and obese (2.5%) are shown in Figure 1.

Table 2. Gender-wise Distribution of Anthropometric Measurements

Gender		Mean	Standard Deviation
Female	Height (cm)	160.64	7.47
	Weight (kg)	53.95	9.24
	BMI (kg/m^2)	20.93	3.798
Male	Height (cm)	176.91	9.09
	Weight (kg)	73.00	15.27
	BMI (kg/m^2)	22.89	4.09

Table 2 shows the height, weight, and BMI of female and male students. The average height of female participants was 160.64 cm and their average weight was 53.95 kg. The mean weight of male participants was 73.00 kg and their mean height was 176.91 cm. The average BMI of male and female participants was calculated as 20.93 kg/m^2 and 22.89 kg/m^2, respectively.

Table 3. Correlation between DEB, FA, and Weight

	EAT 26	YALE	Weight
	r (*p*-value)	*r* (*p*-value)	*r* (*p*-value)
EAT 26	1	0.309 (0.000)	0.192 (0.003)
YALE	0.309 (0.000)	1	0.136 (0.036)

Scores of EAT-26 and YALE showed a moderate positive relationship (r=0.309, p=0.000), whereas EAT-26 and YALE showed a weak positive relationship with weight ($p<\alpha$), as shown in Table 3.

Table 4. Gender-wise Difference in DEB and FA

	Gender	N	Mean	*SD*	*t*	*p*-value
EAT-26	Female	185	16.20	10.98	0.788	0.431
	Male	54	14.85	11.48		
YALE	Female	185	3.95	2.90	-1.388	0.167
	Male	54	4.61	3.50		

Table 4 reveals that females are more likely to have DEB than males. According to the table, the mean value of EAT-26 in females is 16.20, whereas the mean value in males is 14.85. FA was found to be more common in males (with a mean of 4.61) than in females. Although, these differences were not statistically significant.

Table 5. Program-wise Difference in DEB and FA

	Mean	*SD*	*F* / t	*p*-value
EAT-26				
Nutrition	17.75	11.74	4.303	0.015
Allied Health Sciences	13.46	8.96		
General Departments	13.70	10.79		
YALE				
Nutrition	4.06	2.92	0.122	0.885
Allied Health Sciences	4.27	3.25		
General Departments	4.02	3.20		

Comparing students in the nutrition department to students in allied health sciences and general departments, the difference between DEB and FA in terms of programs revealed that students in the nutrition department had a higher DEB with a mean value of 17.75 among nutrition students, whereas other students had lower mean values. The differences were statistically significant, whereas FA scores were not statistically significant.

4. DISCUSSION

The current study was aimed to assess the occurrence of DEB and FA in university students. As far as the authors are aware, this is the first study to assess the incidence of addictive like eating habits in undergraduate students studying in nutrition, allied health sciences, and general departments, as measured by the Yale Food Addiction Scale (YFAS). The study consisted of a total of 239 college students from 3 universities who filled the given online questionnaires.

Based on the World Health Organization (WHO) classification of Body Mass Index [16], the findings of the current research revealed that the participants were mostly of normal weight (69.20%), although 12.90% of the participants were categorized as overweight. Whereas, according to an earlier research conducted on an adult population group of Pakistan, 46% of the participants were found to be obese and 18% overweight [17].

Food addiction (FA), eating disorders (EDs), and obesity are all interrelated issues or causes for one another [19]. The current study discovered a moderately positive relationship between DEB and FA. Similarly, in a major review, there was found a link between FA and DEB, with females having a higher risk of addictive like eating and EDs than males [18].

Gender differences in the incidence of DEB and FA have been reported earlier [19]. In the foregoing study, female college students exhibited a considerably higher prevalence of DEB and FA than male college students. The co-occurrence was also significantly higher in female students than in male students [20]. Similarly, the current study also found that female students had a notably higher incidence of DEB than males. On the contrary, males were found to have a higher incidence of FA than females. However, these differences were not statistically significant. In the preceding study, similar findings indicated the increased incidence of DEB in female college students than in male college students [20].

While assessing the relationship of DEB with FA, the current study demonstrated that individuals at risk of higher or lower DEB and higher FA have dietary imbalances, usually leading to weight gain or loss. Data analysis highlighted a weak positive correlation of DEB and FA with weight. In other words, an increase in EAT-26 and YALE score was correlated with an increase in weight. Similarly, findings from the previous studies stated that the respective percentages of DEB and FA were higher in overweight and obese participants, as compared to underweight / normal weight participants [21].

The correlation of DEB and FA have been demonstrated in numerous studies. Furthermore, FA has been linked to obesity and EDs [22, 8]. The current study showed that DEB was more prevalent in females than males by applying the independent sample t-test. While, FA was also found to be more prevalent in males, according to the YALE score.

When it comes to matching career choices, it is critical to think about personality traits. Food obsession can present itself in activities such as seeking a career in nutrition [9]. A contemporary study reported that more nutrition students were involved in DEB and FA, as compared to the students of other departments. The above-mentioned finding is in line with the findings of a previous South African study which claimed an increased percentage of EDs in first-year nutrition students, as compared to students of other major departments [9]. On the other hand, another study disclosed that dietetic students made an effort to control their caloric intake in order to lose their body weight and did not adapt unhealthy food choices, whereas the students of other departments showed moderately more unhealthy food practices [7].

4.1. Limitations

Every study has some limitations that may threaten the accuracy and generalizability of the results. The cross-sectional study design adopted by the current study makes it difficult to establish causal relationships. Self-reported data may have added to recall bias. Secondly, due to COVID-19, data had to be collected online through google forms. Therefore, some of the participants might not have understood the questions accurately, thus affecting response accuracy.

4.2. Implications

This study highlights a significant association between DEB and FA

among college students, indicating the need for their routine screening and early identification in university settings. The higher DEB observed among nutrition students suggests that academic exposure to nutrition-related content may increase vulnerability to unhealthy eating patterns, emphasizing the importance of integrating mental health, body image, and stress management components into nutrition curricula. Further, the presence of FA across all academic disciplines supports the implementation of university-wide health promotion and counseling programs to address addictive-like eating behaviors and promote a healthy relationship with food. Additionally, this study contributes local evidence on FA in Pakistan, supporting its inclusion in future student health research and policy planning.

4.3. Conclusion

The researchers concluded that DEB and FA were highly correlated to each other, while both DEB and FA had a weak positive correlation with weight. EAT-26 scores were higher in nutrition undergraduate students as compared to the students of other departments. Moreover, DEB and FA was not related to gender.

Author Contribution

Unaiza Sultan: conceptualization, methodology, investigation, visualization, writing - original draft. **Ayesha Saeed:** conceptualization, methodology, formal analysis, project administration, supervision, writing - review & editing. **Afia Ayub:** conceptualization, methodology, investigation, visualization, writing - original draft. **Aliza Ansari:** conceptualization, methodology, investigation, visualization, writing - original draft

Conflict of Interest

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

Data Availability Statement

Data supporting the findings of this study will be made available by the corresponding author upon request.

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Generative AI Disclosure Statement

The authors did not used any type of generative artificial intelligence software for this research.

REFERENCES

1. World Health Organization. Healthy diet. https://www.who.int/news-

room/fact-sheets/detail/healthy-diet. Published January 26, 2026.

2. Hoerr SL, Bokram R, Lugo B, Bivins T, Keast DR. Risk for disordered eating relates to both gender and ethnicity for college students. *J Am Coll Nutr*. 2002;21(4):307-314. https://doi.org/10.1080/07315724.2002.10719228
3. Englert BR. Eating disorders vs. disordered eating: understanding the difference. Equip. Equip Web site. https://equip.health/articles/understanding-eds/eating-disorders-vs-disordered-eating. Updated December 10, 2025.
4. Avena NM, Murray S, Gold MS. Comparing the effects of food restriction and overeating on brain reward systems. *Exp Gerontol*. 2013;48(10):1062-1067. https://doi.org/10.1016/j.exger.2013.03.006
5. Pursey KM, Stanwell P, Gearhardt AN, Collins CE, Burrows TL. The prevalence of food addiction as assessed by the Yale Food Addiction Scale: a systematic review. *Nutrients*. 2014;6(10):4552-4590. https://doi.org/10.3390/nu6104552
6. Ozier AD, Henry BW. Position of the American Dietetic Association: nutrition intervention in the treatment of eating disorders. *J Am Diet Assoc*. 2011;111(8):1236-1241. https://doi.org/10.1016/j.jada.2011.06.016
7. Drummond D, Hare MS. Dietitians and eating disorders: an international issue. *Can J Diet Pract Res*. 2012;73(2):86-90. https://doi.org/10.3148/73.2.2012.8
8. Kassier S, Veldman F. Eating behavior, eating attitude and body mass index of dietetic students versus non-dietetic majors: a South African perspective. *S Afr J Clin Nutr*. 2014;27(3):109-113.
9. Korinth A, Schiess S, Westenhoefer J. Eating behavior and eating disorders in students of nutrition sciences. *Public Health Nutr*. 2010;13(1):32-37. https://doi.org/10.1017/S1368980009005709
10. Gearhardt AN, White MA, Masheb RM, Morgan PT, Crosby RD, Grilo CM. An examination of the food addiction construct in obese patients with binge eating disorder. *Int J Eat Disord*. 2012;45(5):657-663. https://doi.org/10.1002/eat.20957
11. Meule A, von Rezori V, Blechert J. Food addiction and bulimia nervosa. *Eur Eat Disord Rev*. 2014;22(5):331-337. https://doi.org/10.1002/erv.2306

12. Gearhardt AN, Boswell RG, White MA. The association of "food addiction" with disordered eating and body mass index. *Eat Behav*. 2014;15(3):427-433. https://doi.org/10.1016/j.eatbeh.2014.05.001
13. Gearhardt AN, Corbin WR, Brownell KD. Preliminary validation of the Yale Food Addiction Scale. *Appetite*. 2009;52(2):430-436. https://doi.org/10.1016/j.appet.2008.12.003
14. Eating attitudes test (EAT-26). PsychTools. https://www.psychtools.info/eat-26/. Accessed June 15, 2025.
15. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE. The eating attitudes test: psychometric features and clinical correlates. *Psychol Med*. 1982;12(4):871-878. https://doi.org/10.1017/S0033291700049163
16. Tanzil S, Jamali T. Obesity, an emerging epidemic in Pakistan—a review of evidence. *J Ayub Med Coll Abbottabad*. 2016;28(3):e597.
17. Khan ZN, Assir MZ, Shafiq M, Chaudhary AE, Jabeen A. High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. *Indian J Endocrinol Metab*. 2016;20(2):206-210. https://doi.org/10.4103/2230-8210.176357
18. Şengör G, Gezer C. Food addiction and its relationship with disordered eating behaviors and obesity. *Eat Weight Disord*. 2019;24(6):1031-1039.
19. Striegel-Moore RH, Rosselli F, Perrin N, et al. Gender difference in the prevalence of eating disorder symptoms. *Int J Eat Disord*. 2009;42(5):471-474. https://doi.org/10.1002/eat.20625
20. Yu Z, Indelicato NA, Fuglestad P, Tan M, Bane L, Stice C. Sex differences in disordered eating and food addiction among college students. *Appetite*. 2018;129:12-18. https://doi.org/10.1016/j.appet.2018.06.028
21. Hauck C, Cook B, Ellrott T. Food addiction, eating addiction and eating disorders. *Proc Nutr Soc*. 2020;79(1):103-112. https://doi.org/10.1017/S0029665119001162
22. Button E, Aldridge S, Palmer R. Males assessed by a specialized adult eating disorders service: patterns over time and comparisons with females. *Int J Eat Disord*. 2008;41(8):758-761. https://doi.org/10.1002/eat.20553