Research in Pharmacy and Health Sciences

Research Article

Eating Attitudes of Female Pharmacy students in Pakistan: a Cross-Sectional Psychometric Study

Aqeel Aslam*, Ushna Laraib, Iqra Afzal, Shingraf Zaib, Asma Riaz, Aqsa Ashfaq, Ammara Shamshad, Babar Murtaza, Sajid Bashir

Faculty of Pharmacy, University of Sargodha, Sargodha, Pakistan

ABSTRACT

The prevalence of eating disorders among University students has been on rise throughout the world. The present descriptive cross sectional study was conducted to determine the prevalence of eating disorders among the female students of pharmacy department at University of Sargodha, Pakistan using well established EAT-26 questionnaire. The study included 177 female undergraduate pharmacy students from all five years of Pharm D. An EAT-26 score over 20 was indicator of disturbed eating behavior. Out of the total 177 students who participated the study, 47 (26.6%) students had disturbed eating behavior. The mean EAT-26 score was 14.7. According to BMI calculations, 31.64% of total individuals were underweight, 59.32% normal, 6.78% overweight and 2.26% belonged to obese category. The prevalence of eating disorders was found to be much higher than the studies conducted at developed countries. There is an urgent need of an effort to increase awareness of such disorders among students and general public. Conduction of such study at other institutes and at larger scale is recommended.

Received: 25-11- 2015

Revised: 21-12-2015

Accepted: 04-01-2016

***Correspondence to:**
Dr. Aqeel Aslam
Email:
aqeelaslam01@gmail.com

Funding: Nil

Competing Interests: Nil

Keywords: Eating disorders, EAT-26, BMI, female, pharmacy students

INTRODUCTION

Eating disorders are one of the major causes of mental and physical morbidity in adolescent girls and young adult women.[1] These include Anorexia Nervosa, Bulimia Nervosa, or Atypical eating disorders.[2] High prevalence of self harm behaviors like suicidal attempts have been reported in patients suffering from eating disorders especially in females.[3, 4] Personality disorders have been found to be more common in such patients, which further complicates the situation.[5, 6] The co-morbidity of eating disorders with substance abuse has been frequently reported in literature.[7] Patients suffering from eating disorders have high mortality rates, with the highest rates occurring for Anorexia Nervosa.[8, 9] Situation may get so worse that involuntary treatment has to be implicated to save the life of patient but it is always controversial.[10] As the peak age of suffering is from late child hood to early adult hood, there is a major setback to the education and career of the patient.[11] The symptoms are so complicated that they get unnoticed most of the times. Combination of primary prevention, early recognition and treatment helps to reduce morbidity and mortality.[12]

Pakistan is a developing country and youth constitutes the major portion of population.[13] There has been a sharp increase in the number of university students, especially the females during the recent years.[14] More and more young boys and girls use internet and “perfectionism” has been on a rise. Situation gets alarming when they start thinking more about their body shapes rather than overall health. Exposure to western culture and dissatisfaction with body shape has been proposed to be a strong predictor of eating disorders.[15] In a study conducted at Karachi among medical students, it was found that a significant number of students were at high risk of developing eating disorders and females were more prone than males.[16] Similar results were also obtained during a study conducted among medical and nursing students at a private university hospital.[17] To our knowledge, no such study has been conducted so far among the Pharmacy students in Pakistan.

As the earlier studies suggest that the prevalence of eating disorders is on a rise in Pakistan, it was thought worthwhile to conduct a study examining the number of students at a school of Pharmacy which could have been suffering from eating disorders. For this purpose, Eating Attitude Test (EAT-26) which is probably the most widely used standardized self report measure of symptoms of eating disorders was used. Various studies have shown the reliability of this test as a screening tool.[18-22] Individuals who score more than a cutoff score of 20 are then further investigated for positive or specific diagnosis of eating disorders.

METHODOLOGY

A descriptive cross sectional design was used. The study was conducted during the month of September at the Faculty of Pharmacy, University of Sargodha, Sargodha, Pakistan. All the procedure were reviewed and approved by the Ethical Review Board, University of Sargodha. Sample size was calculated and 200 questionnaires were distributed among the students. To avoid any difficulty for students in understanding the questions, validated Urdu translation of the questions was

also included in the questionnaire form. It comprised mainly of three sections namely A, and B. Section A related to demographic information while Section B included 26 questions which were used for scoring of information relating to eating attitude. A cutoff score of 20 was used as criteria for screening of individuals suffering from eating disorders. All the participants were first informed about the study and a verbal consent was taken. No data related to identification of any individual was collected and maintained. An effort was done to maintain the privacy of student while filling the questionnaire to ensure an unbiased opinion. The inclusion criteria of study included female students of all classes of Pharm D while the exclusion criteria were male students and pregnant women. Body mass index was also calculated through the measure of height and weight of individuals. An individual's BMI below 18.5 kg/m^2 was considered to be underweight, normal weight from 18.5 to 24.9 kg/m^2, overweight from 25-29.9 kg/m^2 and BMI of 30 kg/m^2 of or above was considered as obese.[23]

ANALYSIS OF DATA

Data was entered into SPSS software version 16. Simple descriptive statistics was used for the analysis of data. Results were expressed as Frequencies and Percentages.

RESULTS

Out of the 200 questionnaires distributed, 180 were returned. Three questionnaires were incomplete so they were not considered for further investigation. Of the 177 female students, 137 (77.4%) were residing in the University hostel and 40 (22.6%) were residing at their homes. The overall mean age was found to be 21.06 years and the mean BMI was 20.33 kg/m^2. The mean EAT-26 score was 14.7. Of the total 177 students sampled, 47 (26.6%) students had disturbed eating behavior. The mean age in the group with disturbed eating behavior was 22 year. The mean EAT-26 score was 28.64 while the mean BMI was 21.01 kg/m^2. Result indicated that 29.52% (n = 31/105) of total individuals with BMI within the range 18.5-24.9 kg/m^2 were probably suffering from eating disorders. It was also shown that 25% (04/16) of the overweight and obese individuals while 21.4% (12/56) of the underweight individuals were likely to have eating disorders.

All the responses of questions of EAT-26 as given by positive and negative respondents have been shown in Table 1. The proportion of disordered behavior among these students was 14.89%, 12.77%, 17.02%, 8.51% and 46.80% in first, second, third, fourth and fifth year of Pharm D respectively. The summary of responses against each question has been shown in Table 1. On the basis of high scoring in the high risk group, we identified the top six questions from the EAT-26 questionnaire, as has been shown in Table 2.

Table 1: Summary of Responses of High Risk and Low Risk individuals to EAT-26 (n=177).

Questions of dieting scale from EAT-26	**Frequency of high risk (positive) individuals (YES/NO)**	**Frequency of low risk (negative) individual (YES/NO)**
Am terrified about being overweight	34/13	58/72
Aware of the calorie content of foods that I eat	29/18	34/96
Particularly avoid foods with a high carbohydrate content i.e. bread, rice, potatoes etc	33/14	17/113
Feel extremely guilty after eating	12/35	6/124
Am preoccupied with a desire to be thinner	36/11	15/115
Think about burning up calories when I exercise	33/14	28/102
Am preoccupied with a thought of having fat on my body	32/15	28/102
Avoid foods with sugar in them	28/19	26/104
Eat diet foods	18/29	10/120
Feel uncomfortable after eating sweets	21/26	16/114
Engage in dieting behavior	14/33	7/123
Like my stomach to be empty	16/31	6/124
Enjoy trying new rich foods	15/32	11/119
Questions of bulimia & food pre occupation scale of EAT-26	**Frequency of high risk (positive) individuals (YES/NO)**	**Frequency of low risk (negative) individuals (YES/NO)**
Find myself preoccupied with food	26/21	35/95
Have gone on eating binges where I feel that I may not be able to stop	14/33	24/106
Vomit after I have eaten	9/38	2/128
Feel that food controls my life	14/35	26/104
Give too much time and thought to food	13/34	17/113
Have the impulse to vomit after meals	13/34	1/129
Questions of oral control scale from EAT-26	**Frequency of high risk (positive) individuals**	**Frequency of low risk (negative) individuals**

	(YES/NO)	(YES/NO)
Avoid eating when I am hungry	15/32	3/127
Cut my food into small pieces	32/15	28/102
Feel that others would prefer if I ate more	18/29	21/109
Other people think that I am too thin	24/23	38/92
Take longer than others to eat my meals	25/22	38/92
Display self control around food	27/20	52/78
Feel that others pressure me to eat	22/25	34/96

Table 2: Questions with maximum positive response in individuals with eating disorders (n=177).

Question	Response Rate (%)
Question# 1	Am preoccupied with the desire to be thinner (76.59%)
Question# 2	Am terrified about being overweight (72.34%)
Question# 3	Think of burning calories when I exercise (70.21%)
Question# 4	Particularly avoid foods with a high carbohydrate content i.e. bread, rice (72.2%)
Question# 5	Am preoccupied with the thought of having fat on my body (68.08%)
Question# 6	Cut my food into small pieces (68.01%)

DISCUSSION

This study was used for screening of female students who may be suffering from eating disorders using EAT-26 questionnaire. A total of 180 students participated the study but 177 questionnaires were found to be complete. It has been demonstrated by the results that a large number of female students i.e. 47 (26.6%) were probably suffering from eating disorders. This roughly implies that 1 out of every 4 female students was probably suffering. According to a study, the prevalence of eating disorders was found to be <8% in western and < 4% in non western countries.[24] Another study conducted in Turkey also showed much less prevalence of eating disorders among university students and it was found to be similar to western countries.[25] The prevalence of eating disorders at a business school at Karachi was 23.3% while the results of study conducted among female medical and nursing students at a private university hospital showed that 21.1% students were probably suffering from eating disorders.[17, 26] As the results of our study are comparable with the results of earlier studies conducted in Pakistan, we hypothesize that the prevalence of eating disorders among female students in Pakistan is constantly high or increasing.

A striking finding during the study was that out of all the female students that were found to be at risks of developing eating disorders, nearly half (46.80%) were from the final year of Pharm D. The prevalence of eating disorders seemed to be decreasing in 2nd year, increasing in third year, decreasing again in fourth year followed by a very significant and alarming rise in fifth year female students. It appeared as if urge to look thinner increased dramatically as the female students came closer to completing their education. In our opinion, the answer to this puzzle may lie in the socioeconomic situation of the country. Pakistan has basically a male dominant conservative society where working ladies are not much encouraged. General perception about a female living on her own and doing some job is not positive. Most of the female students are supposed to be getting married during or immediately after completing their studies as a result of family pressure. An adverse effect of social media has been that while selecting their life partner, most of the males has an idealistic image of females in their mind. More a female gets herself closer to that image that has been portrayed through television, social media and other means; more are her chances of getting married earlier and with a person of sound background. Any effort to educate the population on the whole can be helpful to overcome this problem.

Another significant finding was that when the questions with maximum positive responses in female students were compared with the results of similar study conducted among the female medical and dental students of a private university hospital at Karachi, 4 out of 6 questions with maximum response were common.[17] These questions related to feeling preoccupied with desire to be thinner, terrified about being overweight, thinking of burning calories while doing exercise and being preoccupied with the thought of having fat on body. If we have a look at map of Pakistan, it is obvious that Karachi is far away from our place of study. It looked that Pakistani youth was being effected by common factors at both the places. This also implies that the main idea which was controlling the eating attitude of the students at both places was to get the desired or idealistic body shape rather than an acceptable health status. They were perhaps thinking at all the times that they should try to get the ideal body shape. This finding is however consistent with the results of other studies in which negative body image has been suggested as a risk factor for having eating disorders.[27, 28]

Results of BMI showed that similar proportions of individuals who were over or underweight, were probably suffering from eating disorders. Most of the female students having possible eating disorder had normal BMI values. This was probably due to the reason that such disorders were at their initial stages or they had not yet progressed beyond a critical level. It was found difficult to draw any correlation between BMI and probability of having eating disorder.

This study was obviously with few limitations because of time and budget constraints. Male students were not included in this study while it was conducted only among Pharmacy students at University of Sargodha. Hence, the results may not represent the response of whole population. Another thing was that EAT-26 questionnaire can be used only as a screening tool. Medical diagnosis of individual suffering from eating disorder can only be confirmed by an experienced medical practitioner.

CONCLUSION

Disturbances in eating behavior might be a sign of future complications. Efforts are required to identify the causes that eventually result in eating disorders. Regular screening exercises along with an effort to increase awareness about eating disorders among the population are highly desirable and strongly recommended.

REFERENCES

1.Mangweth-Matzek B, Hoek HW, Rupp CI, Lackner-Seifert K, Frey N, Whitworth AB, et al. Prevalence of eating disorders in middle-aged women. International Journal of Eating Disorders. 2014;47(3):320-4.

2. Fairburn CG, Harrison PJ. Eating disorders. The Lancet. 2003;361(9355):407-16.

3. Sansone RA, Levitt JL. Self-harm behaviors among those with eating disorders: An overview. Eating Disorders. 2002;10(3):205-13.

4. Paul T, Schroeter K, Dahme B, Nutzinger DO. Self-injurious behavior in women with eating disorders. American Journal of Psychiatry. 2014.

5. Sansone RA, Levitt JL, Sansone LA. The prevalence of personality disorders among those with eating disorders. Eating Disorders. 2004;13(1):7-21.

6. Kaye WH, Bulik CM, Thornton L, Barbarich N, Masters K, Group PFC. Comorbidity of anxiety disorders with anorexia and bulimia nervosa. American Journal of Psychiatry. 2014.

7. Holderness CC, Brooks-Gunn J, Warren MP. Co-morbidity of eating disorders and substance abuse review of the literature. International Journal of Eating Disorders. 1994;16(1):1-34.

8. Arcelus J, Mitchell AJ, Wales J, Nielsen S. Mortality rates in patients with anorexia nervosa and other eating disorders: a meta-analysis of 36 studies. Archives of general psychiatry. 2011;68(7):724-31.

9. Franko DL, Keshaviah A, Eddy KT, Krishna M, Davis MC, Keel PK, et al. Do Mortality Rates in Eating Disorders Change over Time? A Longitudinal Look at Anorexia Nervosa and Bulimia Nervosa. The American journal of psychiatry. 2013;170(8):917.

10. Watson TL, Bowers WA, Andersen AE. Involuntary treatment of eating disorders. American Journal of Psychiatry. 2014.

11. Herpertz S, Hagenah U, Vocks S, von Wietersheim J, Cuntz U, Zeeck A. The diagnosis and treatment of eating disorders. Deutsches Ärzteblatt International. 2011;108(40):678.

12. Rome ES, Ammerman S, Rosen DS, Keller RJ, Lock J, Mammel KA, et al. Children and adolescents with eating disorders: the state of the art. Pediatrics. 2003;111(1):e98-e108.

13. Arif GM, Chaudhry N. Demographic transition and youth employment in Pakistan. The Pakistan Development Review. 2008:27-70.

14. Halai N. Quality of private universities in Pakistan: An analysis of higher education commission rankings 2012. Int J Edu Management. 2013;27(7):775-86.

15. Suhail K. Prevalence of eating disorders in Pakistan: relationship with depression and body shape. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity. 2002;7(2):131-8.

16. Memon AA, Adil SE, Siddiqui EU, Naeem SS, Ali SA, Mehmood K. Eating disorders in medical students of Karachi, Pakistan-a cross-sectional study. BMC research notes. 2012;5(1):84.

17. Israr S. Anorexic behaviour and attitudes among female medical and nursing students at a private university hospital. 2002.

18. Dotti A, Lazzari R. Validation and reliability of the Italian EAT-26. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity. 1998;3(4):188-94.

19. Rivas T, Bersabé R, Jiménez M, Berrocal C. The eating attitudes test (EAT-26): reliability and validity in Spanish female samples. The Spanish journal of psychology. 2010;13(02):1044-56.

20. Brausch AM, Decker KM. Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. Journal of abnormal child psychology. 2014;42(5):779-89.

21. Koslowsky M, Scheinberg Z, Bleich A, Mark M, Apter A, Danon Y, et al. The factor structure and criterion validity of the short form of the Eating Attitudes Test. Journal of personality assessment. 1992;58(1):27-35.

22. Sjostedt JP, Schumaker JF, Nathawat S. Eating disorders among Indian and Australian university students. The Journal of social psychology. 1998;138(3):351-7.

23. Garrouste-Orgeas M, Troché G, Azoulay E, Caubel A, de Lassence A, Cheval C, et al. Body mass index. Intensive care medicine. 2004;30(3):437-43.

24. Makino M, Tsuboi K, Dennerstein L. Prevalence of eating disorders: a comparison of Western and non-Western countries. Medscape General Medicine. 2004;6(3).

25. Kugu N, Akyuz G, Dogan O, Ersan E, Izgic F. The prevalence of eating disorders among university students and the relationship with some individual characteristics. Australian and New Zealand Journal of Psychiatry. 2006;40(2):129-35.

26. Mahmood A, Bibi Z. Eating Disorders among MBA Students in a Business School of Karachi. Journal of Nutrition & Food Sciences. 2014;4(6):1.

27. Smolak L, Levine MP. Body image, disordered eating, and eating disorders: Connections and disconnects. The Wiley Handbook of Eating Disorders. 2015:1.

28. Derenne JL, Beresin EV. Body image, media, and eating disorders. Academic Psychiatry. 2006;30(3):257-61.

APPENDIX 1: Modified form of EAT-26 for assessment of eating behavior

INSTRUCTIONS: This is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of an eating disorder or take the place of a professional consultation. Please fill out the below form as accurately, honestly and completely as possible. There is no right or wrong answers. All of your responses are confidential.

Part A: Complete the following questions.
Age: _____ years Weight: _____Kg Height: _____feet _____inches

Part B: Check a response for each of the following statement.	**Always**	**Usually**	**Often**	**Sometimes**	**Rarely**	**Never**
1. Am terrified about being overweight مجھے موٹا ہونے سے ڈر لگتا ہے.						
2. Aware of the calorie content of food that I eat جو کھانا میں کھاتی ہوں مجھے اس میں موجود کیلوریز کے بارے میں معلوم ہوتا ہے۔						
3. Particularly avoid food with high carbohydrate content (i.e. bread, rice, potatoes etc.) میں خصوصاً نشاستہ والی خوراک سے پرہیز کرتی ہوں، مثلاً ڈبل روٹی، چاول، آلو وغیرہ						
4. Feel extremely guilty after eating. کھانے کے بعد بہت زیادہ شرمندگی محسوس کرتی ہوں						
5. Am preoccupied with a desire to be thinner. دبلی ہونے کی خواہش میری سوچ پر حاوی رہتی ہے						
6. Think about burning up calories when I exercise. جب میں ورزش کرتی ہوں تو کیلوریز کم کرنے کے بارے میں سوچتی ہوں						
7. Am preoccupied with the thought of having fat on my body مجھے اپنے جسم پر چربی کے ہونے کا احساس ہر وقت رہتا ہے						
8. Avoid foods with sugar in them میٹھے کھانوں سے پرہیز کرتی ہوں۔						
9. Eat diet foods. پرہیز والی غذا کھاتی ہوں						
10. Feel uncomfortable after eating sweets. میٹھا کھانے کے بعد آرام دہ محسوس نہیں کرتی۔						
11. Engage in dieting behavior. ڈائیٹنگ کرتی ہوں۔						
12. Like my stomach to be empty. میں چاہتی ہوں کہ میرا معدہ خالی رہے۔						
13. Enjoy trying new rich foods مجھے نت نئے بھرپور کھانے کھانا پسند ہیں						
14. Find myself preoccupied with food. میں کھانے کی سوچ میں محو رہتی ہوں						
15. Have gone on eating binges where I feel that I may not be able to stop.* تھوڑے وقت میں بہت زیادہ کھاتی ہوں۔ جہاں مجھے لگتا ہے شاید میں خود کو روک نہیں سکوں گی						
16. Vomit after I have eaten. کھانے کے بعد میں قے کر دیتی ہوں						
17. Feel that food controls my life. مجھے محسوس ہوتا ہے کہ کھانا میری زندگی کنٹرول کرتا ہے						
18. Give too much time and thought to food. کھانے کو بہت زیادہ وقت دیتی ہوں اور اس کے بارے میں سوچتی ہوں						
19. Have the impulse to vomit after meals. کھانا کھانے کے بعد قے کرنے کی خواہش ہوتی ہے						
20. Avoid eating when I am hungry. جب مجھے بھوک لگتی ہے تو کھانے سے پرہیز کرتی ہوں						
21.Cut my food into small pieces. اپنے کھانے کو چھوٹے حصوں میں تقسیم کر کے کھاتی ہوں۔						
22. Feel that others would prefer if I ate more.						

مجھے محسوس ہوتا ہے کہ دوسرے ترجیح دیتے ہیں اگر میں زیادہ کھاؤں						
23. Other people think that I am too thin. دوسروں کو لگتا ہے کہ میں بہت زیادہ دبلی ہوں						
24. Take longer than others to eat my meals. میں کھانا کھانے میں دوسروں سے زیادہ وقت لیتی ہوں						
25. Display self-control around food. میں کھانے کے متعلق خود پر قابو دکھاتی ہوں						
26. Feel that others pressure me to eat. مجھے لگتا ہے کہ دوسرے مجھ پر کھانا کھانے کے لیے دباؤ ڈالتے ہیں						

Source: www.eat-26.com

Cite this article as: Aslam A, Laraib U, Afzal I, Zaib S, Riaz A, Ashfaq A, Shamshad A, Murtaza B, Bashir S. Eating Attitudes of Female Pharmacy students in Pakistan: a Cross-Sectional Psychometric Study. Res Pharm Healt Sci. 2016;2(1):79-84.