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Risk of eating disorders and its relationship with body mass index and self-esteem among medical student

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Abstract
Introduction: Binge eating disorder, bulimia nervosa and anorexia nervosa are considered to be the most common forms of eating disorders. An eating disorder is a cause of concern for medical students, since it may indicate the presence of psychological illness, with consequent implications for health and work performance. Early detection of such factors is important at an early stage, and resolve it to improve efficiency for future physicians.
Aim & Objectives: To evaluate the state of the body mass index (BMI), self-esteem and eating disorders risk among medical students.
Materials and Methods: This cross-sectional study consisted of 100 undergraduate, intern and post graduate medical students. Participants were administered with a semi structured proforma consisting of sociodemographic information, self-reported height, and weight to calculate BMI, Rosenberg Self-esteem Scale (RSES) and eating disorder examination-questionnaire short (EDE-QS).
Results: We found male students to be at slightly more risk than female students for developing eating disorders. Male students also had significantly higher BMI. Eating disorders risk was associated with elevated BMI. However, there was no significant correlation between eating disorders risk and self-esteem.
Conclusions: The study points out the fact that elevated BMI increases the risk of developing eating disorders in medical students especially male students.

Keywords: Eating disorder, body mass index, self esteem, medical students

Introduction
Eating disorders refer to a group of conditions characterized by abnormal eating habits. They involve either insufficient or excessive food intake that is harmful to an individual's physical and emotional health. Binge eating disorder, bulimia nervosa and anorexia nervosa are considered to be the most common forms of eating disorders [1]. They are among the potentially lethal psychiatric illnesses and are predominantly represented by a mental effect of preoccupation with body weight, shape, and diet. In addition, eating disorders are associated with other psychiatric disorders such as depression, substance abuse, and anxiety disorders.
Individuals with anorexia have an extreme fear of gaining weight, which drives them to maintain a weight far less than normal. Bulimia is characterized by a cycle of binge eating, followed by attempts to remove food and unwanted calories. Individuals with binge eating disorder eat an uncontrollable large amount of food during the binges. An eating disorder is a cause of concern for medical students, since it may indicate the presence of psychological illness, with consequent implications for health and work performance.
The exact cause of eating disorders is unknown. However, it is believed to be due to a combination of biological, psychological, or environmental abnormalities. Development of eating disorders is the social pressure resulting from the standards of beauty imposed by modern industrial society or Western culture [2].
Medical students are associated with high levels of stress [3] which can be a reason for eating disorders. Early detection of such factors is important at an early stage and resolve it to improve efficiency for future physicians. Studies have been conducted in western scenarios to assess eating disorders in medical students.

A study from the USA showed that 15% of female medical students had a history of eating disorders [4]. While eating disorders are characterized as a mental health condition, they have the potential to lead to other serious physical health problems. Keeping such threatening medical consequences in view, it is naturally alarming that the future physicians who are prone to such stressful conditions might be at significantly high risk of contracting eating disorders. The earlier these disorders are diagnosed and assessed, the better the chances are for enhanced treatment and better recovery.

In recent years, eating disorders have been a cause for concern especially due to their increasing prevalence in all racial, ethnic, and socioeconomic groups. Traditionally, eating disorders were considered to be restricted to the population of industrial and developed western countries.

Aims and Objectives

1. To evaluate the state of the body mass index (BMI), self-esteem and eating disorders risk among medical students.
2. To evaluate association of body mass index (BMI) and self-esteem with eating disorders risk.
3. To evaluate association of sociodemographic factors with eating disorders risk.

Materials and Methods

The present study was conducted in Mamata medical college, Khammam India. A cross sectional analytical study was done in undergraduate (M.B.B.S.), interns and postgraduate (M.D./M.S.) medical students at the college. Online study sample was drawn from these students. Informed consent was obtained from each participant and all of them were assured that the information given by them would be anonymous and confidential to avoid reporting bias.

Participants were administered with a semi structured proforma consisting of sociodemographic information, self-reported height and weight to calculate BMI, Rosenberg Self-esteem Scale (RSES) to assess self-esteem and eating disorder examination-questionnaire short version (EDE-QS) to assess eating disorder risk. The scales used for the study are described below.

BMI

BMI was calculated by dividing weight (in kilogram) by the square of height (in meter). BMI less than 18.5 was considered under-weight, 18.5 to 24.9 was considered normal, 25 to 29.9 was overweight and 30 or above obese.

Rosenberg self-esteem Scale (RSES) [5]

It is a 10-item self-reported scale widely used to assess global self-esteem scored on Likert scale 0 to 3, the possible score range being 0 to 30. The score below 15 is considered as indicative of low self-esteem while scores of 15 and above are considered Normal.

Eating disorder examination-questionnaire (EDE-QS) [6]

The Eating Disorder Examination – Questionnaire Short (EDE-QS) was developed as a 12-item version of the Eating Disorder Examination Questionnaire (EDE-Q) with a 4point response scale that assesses eating disorder (ED) symptoms over the preceding 7 days. Scores of items are summed, ranging from 0 to 36 and higher scores indicate greater ED symptoms. A score more than 15 indicates the presence of risk of an eating disorder.

Chi square test was applied to analyze qualitative variables and one-way ANOVA test was applied to analyze quantitative variables. Forward linear regression analysis was used to find out predictive value of sociodemographic factors, BMI, self-esteem for eating disorder risk as a dependent variable. A p value of <0.05 was considered as significant for all statistical correlations. Statistical analysis of data was done using Jamovi software.

Results

In the present study, a total of 100 students completed the questionnaire. The sociodemographic and other characteristics of the students depending on BMI, RSES score and EDE-QS score are depicted in Table 1. Out of 100 students, 28 were males and 72 were females. The mean age of the study sample was 24.31 years. Male students were slightly more in their mean age (24.9) as compared to female students (24.1). In these students, undergraduate (MBBS) students were 30 (7 males, 23 females), interns were 33 (11 males, 22 females) and postgraduate (MD/ MS) students were 37 (10 males, 27 females).

Table 1: The sociodemographic and other general characteristics of the students depending on BMI, RSES score and EDE-QS score and their correlation with gender

Variables	Male	Females	Total	P value
Number of students	28	72	100	
Age [mean (SD)]	24.9(3.30)	24.1(2.66)	24.31(2.85)	0.234
Undergraduate	7(25%)	23(31.94%)	30(30%)	
Intern	11(39.29%)	22(30.56%)	33(33%)	0.66
Postgraduate	10(35.71%)	27(37.50%)	37(37%)	
BMI [mean (SD)]	26.3(4.55)	23.4 (4.62)	24.2(4.8)	<0.005
Underweight	06(8.33%)	6(6%)		
Normal	12(42.86%)	42(58.33%)	54(54%)	<0.01
Overweight	10(35.71%)	21(29.17%)	31(31%)	
Obese	6(21.43%)	3(4.17%)	9(9%)	
RSES score [mean (SD)]	15.8(2.22)	15.7(1.78)	15.72(1.90)	0.831
Low Self esteem	8(28.5%)	19(26.3%)	27(27%)	0.825
Normal self esteem	20(71.4%)	53(73.6%)	73(73%)	
EDE-QS [mean (SD)]	13.8(9.06)	11(8.52)	11.78(8.72)	0.15

The average BMI of the study sample was 24.2 kg/m2. When divided according to BMI, 6% students were under weight, 54% students were normal, 31% students were overweight, and 9% students were obese. Male students had

significantly higher BMI as compared to female students (p<0.005). High numbers of male students (57.14%) were overweight and obese compared to female students (33.33%).

The mean RSES score was 15.72. There was no significant gender difference between the mean scores. A total of 27% students had low self-esteem while 73% students were normal regarding their self-esteem. However, when compared for the gender differences a significantly higher proportion of male students (28.57%) had low self-esteem compared to females (26.38%). 40.74% of students with low self-esteem were either underweight, overweight or obese.

Self Esteem Interpretation
BMI interpretation Low self esteem Normal self esteem Total

Table 2: Comparison between BMI and Self Esteem interpretation

Normal	16	38	54
Obese	3	6	9
Overweight	7	24	31
Underweight	1	5	6
Total	27	73	100

Eating disorder risk was observed in 35% of students. It was 46.67% in undergraduates, 36.36% in interns and 24.32% in postgraduates. The gender difference comparison showed that 46.43% males had risk of eating disorders and 30.56% females had risk of eating disorders. 31.43% of students who had a risk of eating disorder had low self esteem.

Forward linear regression analysis taking sociodemographic factors, BMI, self-esteem (RSES score) as predictor variables and eating disorder risk (EDE-QS) as an outcome variable showed that there was no significant statistical correlation between gender and eating disorder risk. (p=0.153) and moderate positive correlation with BMI (Pearson Correlation Coefficient=0.14, p value=0.004). There was no correlation of eating disorder risk with other sociodemographic factors and self-esteem. [Table 3]

Table 3: Forward linear regression analysis of sociodemographic factors, BMI, and self-esteem (RSES score) with eating disorder risk (EDE-QS score)

Variables	Standard Error	Pearson Coefficient	P value	95% confidence interval	Lower Upper
Gender	1.93	0.144	0.153	-0.342	0.0542
BMI	0.177	0.285	0.004	0.092	0.477
RSES	0.462	0.065	0.519	-0.265	0.135

Discussion

We had some important findings from our study. Our study reports that a significant proportion of medical students are at high eating disorder risk. One of the important findings showed that male students were at slightly more risk of developing eating disorders than female students. Chaudhari B, *et al.* had similar findings in his study, which showed that restraint score, shape concern score, weight concern score and the eating concern score were significantly higher in males compared to females [7]. This is contrary to the historical belief among health professionals that eating disorders are associated with only women. Most of the studies done in the past showed female preponderance in eating disorder patients [8]. However, in recent studies, the prevalence of eating disorders in males has shown that these disorders have been under reported, underdiagnosed, and underestimated [9]. There is a drastic increase in cases of eating disorders in males. However, very few men get diagnosed or take treatment for their eating disorders. Most of the patients are missed as there is a lack of awareness in the society. There is also lack of understanding of the fact that eating disorders in males may present clinically in a different way than in female by the health care professionals which leads to under diagnosis and under treatment of eating disorders in me [8]. They may not show similar weight related and dieting symptoms as females. Males with eating disorders often experience depression. Hidden depression leads to most of the problems we think of as typically male, like alcohol and drug abuse, domestic violence, failures in intimacy, self-sabotage in careers or studies [10].

Our findings also suggested higher proportion of overweight and obese male students based on BMI calculations which was relevant with the findings in other studies in student population [7].

In our study we could see that eating disorder risk was associated with elevated BMI. Chang *et al.* who studied medical students in China also had similar findings. (11) This shows the possible link between being overweight and disturbed eating attitudes. The disparity between actual body weight and desired ideal “thin” body as in western culture drives students to have changes in their eating attitudes. It has been shown that weight control strategies used by overweight people are often ineffective and actually results in weight gain and eating disturbances such as binge eating which further increases risk of obesity. This indicates that elevated BMI and disturbed eating attitudes are linked to each other [12].

Self-esteem is one of the most important and primary needs of humans. It is an expression of approval or disapproval of the person about himself. In our study it was observed that self-esteem was much lower in males than in females, 40.74% of students who were either underweight, overweight, or obese had low self-esteem. This shows that the appearance of the student or their BMI directly affects their self-esteem which can lead to many psychological problems, and this might lead to low or decreased academic performance of the students or the future doctors. It has been proven time and again that people with low self-esteem have more probability to suffer from academic failure, depression, addiction and anxiety rather than people with high self- esteem [13].

Limitations

There are some limitations in the present study. Firstly, the sample size was small. Secondly, data was collected through self-reported questionnaires which might cause reporting bias of the information given.

Conclusion

The present study underlines the fact that elevated or very low BMI is related to increased risk for developing eating disorders in medical students. We need to prevent or detect eating pathologies as early as possible by identifying students at risk. There is a necessity to realize the magnitude of eating disorder risk in male population. The above study brought out the vulnerability of male students for obesity, and risk of development of eating disorders. Increasing awareness of these facts in students, especially male students, may help them seek appropriate medical help. It is

important for health care professionals also to be aware of these facts so that assessment of eating pathology can be done in all persons at risk.

References

1. Hudson JI, Hiripi E, Pope Jr HG, Kessler RC. The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. Biological psychiatry. 2007 Feb 1;61(3):348-58.
2. Kiriike N, Nagata T, Tanaka M, Nishiwaki S, Takeuchi N, Kawakita Y *et al*. Prevalence of binge-eating and bulimia among adolescent women in Japan. Psychiatry Research. 1988 Nov 1;26(2):163-9.
3. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: A cross sectional study. Medical education. 2005 Jun;39(6):594-604.
4. Herzog DB, Pepose M, Norman DK, Rigotti NA. Eating disorders and social maladjustment in female medical students. Journal of Nervous and Mental Disease, 1985.
5. Rosenberg M. Society and the adolescent self-image. Princeton University, Princeton, 1965.
6. Prnjak K, Mitchison D, Griffiths S, Mond J, Gideon N, Serpell L *et al*. Further development of the 12-item EDE-QS: identifying a cut-off for screening purposes. BMC psychiatry. 2020 Dec;20:1-7.
7. Chaudhari B, Tewari A, Vanka J, Kumar S, Saldanha D. The relationship of eating disorders risk with body mass index, body image and self-esteem among medical students. Annals of Medical and Health Sciences Research, 2017, 7(3).
8. Greenberg ST, Schoen EG. Males and eating disorders: Gender-based therapy for eating disorder recovery. Professional Psychology: Research and Practice. 2008 Aug;39(4):464.
9. Strother E, Lemberg R, Stanford SC, Turberville D. Eating disorders in men: underdiagnosed, undertreated, and misunderstood. Eating disorders. 2012 Oct 1;20(5):346-55.
10. Real T. I don't want to talk about it: Overcoming the secret legacy of male depression. Simon and Schuster, 1998.
11. Chang WW, Nie M, Kang YW, He LP, Jin YL, Yao YS *et al*. Subclinical eating disorders in female medical students in Anhui, China: a cross-sectional study. Nutr Hosp. 2015; 31:1771-1777.
12. Jones JM, Bennett S, Olmsted MP, Lawson ML, Rodin G. Disordered eating attitudes and behaviours in teenaged girls: a school-based study. Cmaj. 2001 Sep;165(5):547-52.
13. Hadinezhad P, Masoudzadeh A. A study of the relationship between self-esteem and academic achievement in medical students of Sari Medical College. Life. 2018 Apr;50:1.