

## EATING DISORDERS AND ITS ASSOCIATION WITH BODY IMAGE PERCEPTION AND STRESS AMONG MEDICAL STUDENTS OF A TERTIARY CARE CENTRE IN NORTH KERALA

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### Abstract

**Background:** Medical profession itself can be regarded as a best profession but it is also a profession with great responsibility along with abundant stress. Each medical student face a stage of stress, depression and anxiety atleast once in their college life. These problems can reflect in different ways, among which eating disorder is a commonest issue. **Materials and Methods:** A cross sectional study was conducted among 270 medical students. A Google form was prepared which include semi structured questionnaire and circulated among the study population through online platform in the class and after taking informed consent. The obtained data was entered in Excel and was analysed using (IBM) SPSS version 20 software. Quantitative data were expressed as mean and standard deviation. Qualitative data was expressed as frequency and percentage. **Result:** Out of 270 students in our study ,237 (87.8%) students had (Eating Attitude Test-26) EAT -26 score <20 and 33 (12.2%) students had EAT-26 score ≥20. Among the 33 students with EAT score ≥20, 24 were females and 9 were males. 22(8.1%) students were markedly concerned with their shape, out of them 16 were girls. **Conclusion:** The present study depicted that on Fischer's exact test, there was a significant association between eating attitude with body image perception and stress among the students with a p value of 0.000 and 0.035 respectively. Though eating attitude is influenced psychological, behavioural, cultural and socio-environmental factors, preventive efforts at individual, family and community level should be implemented.

## INTRODUCTION

Eating disorders are behavioural conditions characterized by severe and persistent disturbance in eating behaviours and associated distressing thoughts and emotions. They can lead to serious conditions affecting physical, psychological and social function.<sup>[1]</sup> The three types of eating disorders are: Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorder Not Otherwise Specified (EDNOS).<sup>[2]</sup> Eating disorders affect up to 5% of the population and more than 75% of the cases begin during adolescence.<sup>[1,3]</sup>

Eating disorders are associated with the highest morbidity and mortality rates among psychiatric disorders. Mortality ranges from 7-10%, most frequently related to cardiovascular changes

secondary to starvation, gastric hemorrhage, and suicide.<sup>[4]</sup> Eating disturbance is related to biological developmental, psychological, and socio-cultural factors.<sup>[5]</sup> A study in Kerala found that the prevalence of risk of eating disorders among medical students was 19.1%.<sup>[6]</sup>

The Multi-Service Eating Disorders Association (MEDA) revealed that nearly 15% of women in the age group of 17 to 24 have eating disorders of any type.<sup>[5]</sup> Psychiatric comorbidities like depression, substance use disorders, deliberate self-harm, and physical consequences, including cardiac and musculoskeletal complications, can lead to significant morbidity and mortality among medical students and poor work-related functioning and absenteeism.<sup>[6]</sup> Medical students have high academic workloads, long working hours and many other

factors that cause a tendency to develop unhealthy eating habits.<sup>[7]</sup> The concept of westernized body image standards and fear of fatness superadded by peer pressure has influenced the eating attitudes of modern youth, making them vulnerable to eating disorders.<sup>[8]</sup> Eating disorders are associated with depression in 45% of cases and anxiety in 65%.<sup>[9]</sup> The present study was undertaken to find out the prevalence of eating disorders among Medical students and its association with body image perception and stress as well as to assess the behavioural patterns of study subjects related to eating disorders. of a tertiary care centre in North Kerala.

## MATERIALS AND METHODS

**Study Design:** Cross sectional study

**Study Setting:** Malabar Medical College Hospital and Research Centre (MMCH&RC), Ulliyeri, Calicut, Kerala.

**Study Population:** All Undergraduate Medical students from first year to final year of MMCH&RC willing to give consent and participate in the study.

**Study Period:** October 2023

**Sampling Method:** Convenient Sampling

**Sample Size:** The sample size was determined using the following formula,  $n = (Z\alpha^2 pq) / d^2$ , where,  $Z\alpha = 1.96$  (Z value for 95% level of significance),  $p = 19.1\%$  (based on the study, Risk of eating disorders and its association with body image concerns, depression, anxiety and stress among medical students in a college in Kerala [6],  $q = 80.9\%$  (100-P), and  $d = 5\%$  and it is found to be 247. Considering a non-response rate of 10%, a total of 270 participants were included in this study.

**Study tool:** A pretested semi structured questionnaire consisting of questions including socio-demographic details and validated questionnaires of EAT26 (Eating attitude test) [10], BSQ 8C (Body shape questionnaire) [11] and PSS 10 (Perceived stress scale) [12] was used.

**Eating attitude test 26 (eat - 26) scoring:** EAT SCORE  $\geq 20$  indicates need for further investigation by a qualified professional.

EAT SCORE  $< 20$  can still be consistent with serious eating problems, as denial of symptoms can be problem with eating disorders.

**Body Shape Questionnaire 8c (BSQ- 8c) Scoring**  
BSQ Score  $< 19$  – no concern with shape, 19-25 – mild concern with shape, 26-33 – moderate concern with shape, Over 33 – marked concern shape

**Perceived Stress Scale 10 (PSS 10):** Scores ranging from 0-13 was considered low stress, scores from 14-26 as moderate stress, and scores ranging from 27-40 was considered as high perceived stress.

**Method of data collection:** A Google form was prepared including questions from above mentioned

questionnaires and circulated among the study population through online platform and after taking informed consent. The study population was asked to complete the self administered questionnaire. Care was also taken to ensure privacy and confidentiality of the study subjects.

**Data Analysis:** The obtained data was entered in excel and was analysed using (IBM) SPSS version 20 software. Quantitative data were expressed as Mean and Standard deviation. Qualitative data was expressed as frequency and percentage.

**Ethical Consideration:** Permission from the Institutional Ethics Committee was obtained for the study. Confidentiality was maintained and involvement of the students was voluntary.

## RESULTS

[Table 1] depicts that in our study, 212 (78.5%) students were females and 58 (21.5%) students were male. The mean age of the participants was  $20.93 \pm 1.37$ . Maximum responses 122 (45.2%) were given by 2022 batch students. Most of the students 240 (88.9%) were hostliers.

In our study, 237 (87.8%) students had EAT score  $< 20$  and 33 (12.2%) students had EAT score  $\geq 20$ . [Table 2]

[Table 3] showed that out of 237 students with EAT score  $< 20$ , 188 (79.3%) were females and 49 (20.7%) were males. And out of 33 students with EAT score  $\geq 20$ , 24 (72.7%) were females and 9 (27.3%) were males. Students with EAT score  $\geq 20$ , 30 (90.9%) were  $\geq 20$  years of age.

[Table 4] depicts out of 270 study subjects 144 (53.3%) students were not concerned about their shape and 22 (8.1%) students were markedly concerned with their shape. Out of 22 students who were markedly concerned about their shape, 16 of them were females and 6 of them were males.

[Table 5] depicts that out of 270 study subjects, 7 (2.6%) were found to have high perceived stress and 215 (79.6%) were found to have moderate stress.

[Table 6] represents that in a study population of 270, 37 students had moderate concern with shape out of which 11 (29.73%) had an EAT SCORE  $\geq 20$ . A total of 22 students had marked concern with shape and 11 (50%) out of them had EAT score  $\geq 20$ . On Fischer's exact test, P is 0.000 which depicts that there is a significant association between eating attitude and body image perception.

[Table 7] showed that from a study population of 270, 215 students had moderate level of stress out of which 27 (12.55%) had EAT-26 score  $\geq 20$ . Out of 7 students with high perceived stress, 3 (42.85%) had EAT score  $\geq 20$ . On Fischers exact test there is significant association between eating attitude and level of stress with p value of 0.035.

**Table 1: Sociodemographic profile of the study subjects [N=270]**

Sociodemographic	Frequency	Percentage
Gender		
Male	58	21.5%
Female	212	78.5%
Age of participants		
<20 years of age	237	87.8%
≥20 years of age	33	12.2%
Mean age of the study participants= 20.93±1.371		
Batch		
2018	9	3.3%
2019	12	4.4%
2020	85	31.5%
2021	42	15.6%
2022	122	45.2%
Accommodation		
Hostel	240	88.9%
Home	25	9.3%
Outside the campus	5	1.9%

**Table 2: Distribution of study subjects according to EAT 26 score (N=270)**

EAT -26 Score	Frequency	Percentage
<20	237	87.8%
≥20	33	12.2%
Total	270	100

**Table 3: Distribution of EAT -26 score in study subjects according to gender and age (N=270)**

Variables	EAT-26 Score <20	EAT -26 score ≥20
Gender		
Male	49 (20.7 %)	24 (72.7%)
Female	188 (79.3%)	9 (27.3%)
Total	237	33
Age		
<20 years	39 (16.4%)	3(9.1%)
≥20 years	198 (83.6%)	30 (90.9%)
Total	237	33

**Table 4: Distribution of study subjects according to body image perception on basis of BSQ-8C score (N=270)**

Body image perception(score)	No. of students	Percentage
No concern with shape (<19)	144	53.3%
Mild concern with shape (19 – 25)	67	24.8%
Moderate concern with shape (26 – 33)	37	13.7%
Marked concern with shape (>33)	22	8.1%
Total	270	100

**Table 5: Distribution of study subjects according to Perceived Stress Scale (PSS) score (N=270)**

PSS Score	No. of students	Percentage
Low stress	48	17.8%
Moderate stress	215	79.6%
High perceived stress	7	2.6%
Total	270	100

**Table 6: Association between Eating Attitude and Body Image Perception among study subjects (N=270)**

Body image perception	EAT -26 Score<20	EAT -26 Score ≥20	Total	Fisher's exact test = 46.757 (p=0.000) Degree of freedom (df) = 3
No concern with shape	141(97.9%)	3(2.08%)	144	
Mild concern with shape	59(88.06%)	8(11.94%)	67	
Moderate concern with shape	26(70.27%)	11(29.73%)	37	
Marked concern with shape	11(50%)	11(50%)	22	
Total	237	33	270	

**Table 7: Association between Eating attitude and stress among the study subjects (n=270)**

Perceived stress scale	EAT -26 Score <20	EAT -26 Score ≥20	Total	Fisher's exact test =6.390 (p value= 0.035) Degree of freedom (df=2)
Low stress	45(93.75%)	3(6.25%)	48	
Moderate stress	188(87.44%)	27(12.55%)	215	
High perceived stress	4(57.14%)	3(42.85%)	7	
Total	237	33	270	

## DISCUSSION

The objective of this study was to estimate the prevalence of eating disorders among the undergraduate students of a medical college in North Kerala and its association with body image perception and stress.

In a study conducted by Chitra Tomy et al,<sup>[6]</sup> it depicted that one-fifth of the study population comprising medical students had a risk of eating disorders. These individuals were found to have higher levels of depression, anxiety and stress. Out of the total 270 study subjects in our study, 33(12.2%) were found to be at risk for eating disorders, having an EAT-26 score of  $\geq 20$ . This is comparable with the results obtained in studies done among medical students by Nivedita et al. and Ramaiah et al. in which the prevalence of eating disorders were 13.68% and 16.9% respectively.<sup>[14,15]</sup> In the present study, the mean BSQ-8C score was 19.01 ( $\pm 9.24$ ). This score is comparable with that obtained in the study by Chitra Tomy et al,<sup>[6]</sup> [18.13 ( $\pm 9.15$ )], as both the studies were done among medical students and both used BSQ-8C questionnaires. Our study found a significant association between the EAT-26 score and BSQ-8C score which means, higher the concern about body image among the study subjects, more the risk of developing eating disorders. A study by Brechan et al. in Norway found that body image perception had a significant positive direct effect on disordered eating.<sup>[13]</sup> Our study findings are in concordance with study conducted by Mythri JP et al,<sup>[4]</sup> which showed a high prevalence of abnormal body image perception and disordered eating attitudes in medical students.

## CONCLUSION

In our study, 33 (12.2%) students had EAT score  $\geq 20$ . Among these 33 students, 24 were females and 9 were males. In relation to body image perception, 144(53.3%) students were not concerned about their shape and 22(8.1%) students were markedly concerned with their shape, out of them 16 were girls. On Fischer's exact test, there was a significant association between eating attitude with body image perception and stress with a p value of 0.000 and 0.035 respectively. Students who are markedly concerned about their shape should have classes on improving self confidence and educate them so that they will be able to accept, appreciate and respect their body and hence they tend to have a positive perception towards their body image. Our study signifies that stressed students have a tendency to adopt unhealthy food habits leading to eating

disorders. Hence early interventions like regular physical activity or other extra curricular activities which help to reduce the stress levels should be promoted.

**Limitations:** The present study was a cross-sectional study done in only one medical college, hence the obtained findings cannot be generalized to other settings.

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