



BODY IMAGE CONCERNS AND DISORDERED EATING BEHAVIORS AMONGST FEMALE UNDERGRADUATES OF GOVT. MEDICAL COLLEGE AND HOSPITAL, NAGPUR.

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ABSTRACT

AIM: Purpose of this study was to evaluate the prevalence of body image concern and disordered eating behaviors amongst female undergraduates of GMC, Nagpur, India.

METHODOLOGY: A total of 154 subjects registered for 1st and 2nd MBBS in GMC, Nagpur consented for the study. Data was collected by using predesigned and pretested questionnaire based on BSQ-8C and EAT-26. Results were analyzed by EPI INFO 7.3.5.

RESULTS: Body Image Concerns and disordered eating behaviors were found in 75(48.71%) and 45(29.23%) subjects respectively and were more prevalent in subjects whose BMI deviated from normal ($p < 0.001$). Association between BMI and disordered eating behavior was found to be highly significant ($p = 0.0001$ and $OR = 14.88$).

CONCLUSIONS: Strong association between body shape concerns & disordered eating behaviors are reported that are probably important for DEB diagnosis and treatment in the normal population.

KEYWORDS : Body image, Eating disorder, BMI.

INTRODUCTION:

While so much focus is placed on the increasing rates of obesity in both child and adult population, eating disorders are also a cause for growing concern in society today.¹ Along with those who overindulge in food and thus suffer a plethora of resultant health consequences are those who restrict dietary intake and practice unhealthy habits such as bingeing and purging.

The reason behind the restriction of food intake is found to be the dissatisfaction for their body image.² Being thin is highly valued within the society, particularly among women, for whom thinness is often equated with being attractive. Therefore, some women see their body shape and weight as a sort of "measuring stick" of social value.³

Body image concern is a multidimensional construct, frequently defined as the degree of satisfaction about oneself in terms of size, shape and general appearance.^{4,5}

There's often a vicious circle: the more a person focuses on his body, the worse he tends to feel about how he looks – obsession breeds discontent. This increased preoccupation with body shape leads to body dissatisfaction. People experiencing body dissatisfaction can become fixated on trying to change their body shape.⁶ There comes the turning of the language of feelings into the language of food, creating a situation in which people start to begin to think that they have a "problem" with food. Unhealthy practices like food restriction and exercise compulsion are practiced and they don't actually achieve the desired outcome (physically and emotionally) and can result in intense feelings of disappointment, shame and guilt and ultimately increase the risk of developing an eating disorder.⁷

With the changes in life style and socio economic status, the prevalence of eating disorders have been found to be increasing in non – western countries like India. Despite the apparent increase of eating disorders in India there has been relatively little research published on eating disorders across cultures.⁸ With this back ground, the present study will be carried out in central India to

1. study body image concerns in female undergraduate students of Govt. Medical College and Hospital, Nagpur.
2. study pattern of body image concerns according to their BMI.
3. estimate the proportion of students with disordered eating behaviors using EAT – 26 scale.
4. study the correlation between body image concerns and disordered eating behaviors.

MATERIAL AND METHODS:-

Present cross sectional study was carried out in Govt. Medical

College, Nagpur among female undergraduates. Among 400 students who were registered for 1st and 2nd MBBS, 184 were females out of which 154 consented to participate and thus constituted the study subjects. Study duration was of two months. Data was collected using two predesigned and pretested questionnaires based on Body Shape Questionnaire-8C scale and Eating Attitude Test-26 scale. Approval from Ethics Committee was obtained and informed consent was taken after apprising them of the purpose of the study.

Height and weight were measured using standard techniques and BMI was calculated. Information regarding Socio demographic factors like age, religion, residence, education etc. was asked and noted. Socio economic status of families was calculated using modified kuppuswamy scale (urban) and Prasad's scale (rural). Body Shape Questionnaire (BSQ – 8C) measures the concerns related to one's body shape that consists of 8 items with final score range of 8 to 48 which are further classified under : a) No BIC (<19 points) b) Mild BIC (19-25) c) Moderate BIC (26-33) d) Marked BIC (>33). The score of >19 indicates the concern for shape.

Eating Attitudes Test (EAT – 26) is the most widely used screening tool to assess "eating disorder risk" in high school and college students. The questionnaire consists of 26 items with a final score range of 0 to 78 which are further classified under 3 categories: a) no risk (<20) b) some risk (20-29) c) at risk (≥ 30). The score >20 indicates the risk for EDs and the need for counseling for EDs from a qualified healthcare professional.

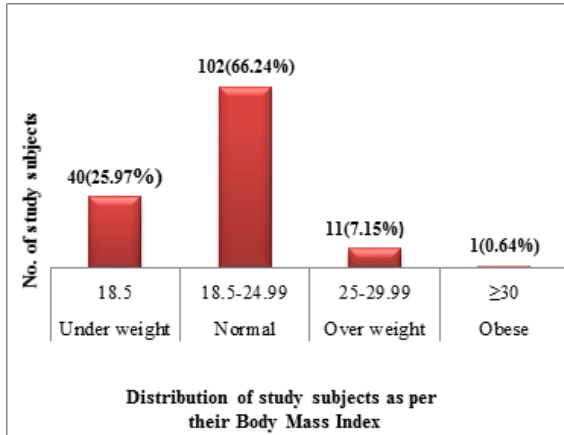
RESULTS:

TAB – 1: Demographic data of study subjects:

Demographic Category	Category	No. of study subjects	
		No.	%
Age	17-19 years	112	72.7
	20-22 years	42	27.3
Religion	Hindu	133	86.4
	Others	21	13.6
Residence	Urban	131	85.1
	Rural	23	14.9
Education of Parents	Graduate & Above	103	66.8
	Below Graduate	51	33.2
Socio economic Status	Upper & Upper middle	136	88.2
	Lower middle & Below	18	11.8

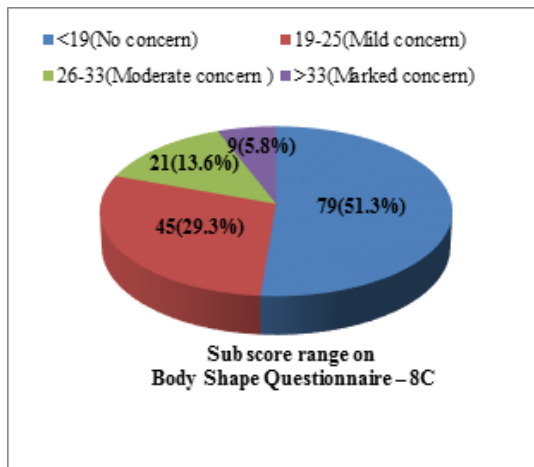
Total 154 students were enrolled in the study. Table-1 shows the demographic data of study subjects. The age of study subjects varied between 17-22 years, the mean age being 19 ± 1.1 years. 112 [72.7%] subjects were of ≤ 19 years of age. Majority of them 133 [86.4%] were Hindu by religion. Many of them 131 [85.1%] were from urban area. Parents of 103 [66.8%] subjects were graduate and above in their educational level and 136 [88.2%] were belonged to upper and upper middle class of socio economic status.

FIG-1: Nutritional status of study subjects by Body Mass Index:



Considering body mass index as an indicator of nutritional status, 102 (66.24%) subjects were Normal, 40 (25.97%) were Under weight and only 12 (7.14%) were Overweight or obese.

FIG-2: Distribution of subjects by BSQ categories:



Most of them 79 (51.29%) were found to have No Body image concern [BIC], 45 (29.23%) had mild BIC, 21 (13.64%) had Moderate BIC, 9 (5.85%) had marked body image concern.

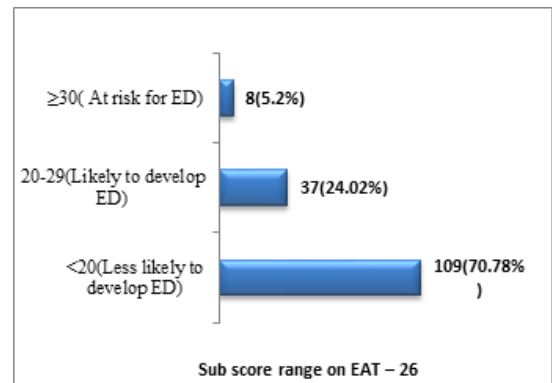
TAB-2: Pattern of body image concerns according to nutritional status assessed as per BMI:

BMI	Body Image Concern				Total	
	Concern for shape		No concern for shape			
Overweight & obese	No.	%	No.	%	No.	%
	10	83.33	2	16.67	12	100
Others	65	45.77	77	54.23	142	100

$\chi^2 = 6.247$, and **OR (95% CI = 1.335-2.482) and P = 0.007.**

Out of 12 subjects who were overweight and obese, majority 10 (83.33%) had concern for their body shape. However, only 65 (45.77%) among normal and underweight BMI subjects were concerned for their body shape showing the significant association between the two with $p = 0.007$ and odd's ratio 6.247.

FIG-3: Distribution of Study subjects EAT – 26 categories:



Total 37 (24.02%) subjects were likely to develop and 8 (5.2%) subjects were found to be at risk for developing an eating disorder.

TAB-3: Relation between eating behavior and deviated BMI:

	Risk of developing eating disorder					
	At risk		No risk		Total	
BMI	No.	%	No.	%	No.	%
Normal	12	11.53	92	88.47	104	100
Others	33	66	17	34	50	100
Total	45	29.23	109	70.77	154	100

$\chi^2 = 48.424$ and **OR (95% CI = 6.429-34.445) and P = 0.0001.**

Among 50 subjects whose BMI deviated from normal, 33 (66%) subjects were at risk of developing an eating disorder. However, 12 (11.53%) subjects whose BMI was normal, were also at risk of developing eating disorder showing the strong association between disordered eating behavior and deviated BMI ($p < 0.0001$).

TAB-4: Relation between body image concerns and disordered eating behaviors:

	Risk of developing an Eating Disorder					
	At risk		No risk		Total	
Body Image Concern	No.	%	No.	%	No.	%
Concern for body shape	34	75.56	41	24.44	75	100
No concern for body shape	11	37.62	68	62.38	79	100

P = 0.0018, $\chi^2 = 18.352$ and OR (95% CI = 2.343-11.21).

Out of 75 subjects who were concerned for body shape, majority 34 (75.56%) were found to be at risk for developing an eating disorder. However, 11 (37.62%) subjects who had no concern for body shape were also found to have the risk showing the strong association between the two with $p = 0.0018$ and odd's ratio 18.352.

DISCUSSION:

Present study amongst female undergraduates of GMC, Nagpur examined the prevalence of body image concern and disordered eating behaviors and how they varied according to their BMI.

Considerable existence of body shape concerns was reported. 75 (48.71%) subjects were concerned for their body shape [Fig-2]. Similar results were obtained in studies conducted by Garousi S and Thomas who reported that 65% and 74.8% of the surveyed subjects were concerned with body shape respectively.^{9, 10} This is in accordance with the common notion that body image concern and desire for thinness are more prevalent among younger women.^{11,12}

Among 12 subjects who were overweight and obese, 10 (83.33%) of overweight and obese were concerned for body shape were concerned for their body shape [Tab-2]. It is in accordance with the results of studies conducted by Friedman K and Xanthopoulos M et.al. who found that body image concern was more prevalent among women who were overweight and obese.^{13,14,15} And also, in a society in which thinness is so highly valued, it is perhaps not

surprising that BMI is described as one of the most consistent characteristics related to body image.¹⁶ However, Sarwe D et al, in his study on obese women, did not find this association to be significant.¹⁷

With respect to risk of developing eating disorder, most studies with adolescents have reported lower risk than that found in the present study 45(29.22%), with proportions of subjects with risk ranging from 7.1% to 17.9%. [18,19,20,21] However, the present results were similar to those reported by Sampie C.A and Martin C.R. which found prevalence rates of 26.7% and 27.6%, respectively [22,23]. In Jordan, a study conducted with adolescents girls aged between 10 and 16 years showed that 40.5% presented risk factors for developing an eating disorder [24].

It should be emphasized that the EAT-26 scale is unable to diagnose the presence of eating disorders and only identifies individuals who are at risk of developing these disorders. In this respect, the results obtained are a matter of concern since symptoms of eating disorders can progress to clinical cases. This fact highlights the importance of implementing preventive measures that are able to increase the awareness of the damage to health caused by inappropriate weight loss practices while promoting adherence to healthy behaviors such as adequate eating and regular physical activity.

Association between BMI and disordered eating behavior was found to be highly significant with $p=0.0001$ and $OR= 14.88$ [Tab-3]. It is supported by findings of Goltz F et al.²⁵ Hence, the more the BMI deviates from normal, the higher the probability of developing some form of disordered eating behavior.²⁶

Body shape concern and disordered eating behavior were found to be strongly associated with $p=0.00018$ and $OR=5.126$ [Tab-4]. Eapen V et al. reported similar association between body shape concern and disordered eating behavior with $p<0.01$.²⁷

This association has also been demonstrated in other cross-sectional studies^{18,24} confirming the role of body shape concerns as a predictor of abnormal eating behaviors. In this respect, it is presumed that the drive to reach certain social standards of thinness and beauty can lead to the adoption of inadequate eating habits which, if maintained, could progress to clinical cases of eating disorders with serious health consequences.²⁸ Therefore, eating disorder prevention programs would primarily need to address body image concerns, for example by promoting discussions and reflections about the current cultural pressure to achieve ultra slender body shapes and weights in order to increase body satisfaction and reduce body-related concerns among adolescents.

CONCLUSIONS:

This study found a considerable prevalence of body image concerns in female undergraduates of GMC, Nagpur. Overweight and obese subjects were more concerned for their body shape. Additionally it identified the risk behaviors for anorexia and bulimia as significant correlates of body image concerns in this specific population. Focus on the relation between body shape concerns, BMI and eating behaviors revealed the interesting behavioral schemes that are probably important for DEB diagnosis and treatment in the normal population.

Therefore, having screening procedures and developing effective interventions to improve body image and thus reduce overpreoccupation with appearance, are extremely relevant. Ultimately, success in intervening on body image perception will far more likely contribute to the prevention of eating disorders in the adolescent population.

LIMITATIONS:

1) The cross-sectional design of the study does not permit to establish a cause-effect relationship between the studied variables and only allows for analysis of a general overview of the situation.

- 2) Only adolescents from state graduation college were studied, possibly comprising the representation of higher socioeconomic classes.
- 3) Most of the data was obtained via questionnaire, which being a subjective form of assessment, can-not guarantee the accuracy of the provided answers.

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