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Research Paper

Is body image dissatisfaction a potential factor for causing poor nutritional status in medical students?

Medical Science

KEYWORDS : Body image dissatisfaction, Perceived body image, Body Mass Index, Body Fat Percentage, Waist Hip Ratio, Peer pressure.

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ABSTRACT

Perceived body image is said to determine the nutritional status of an individual. More young girls perceive to be thin. This leads to body image dissatisfaction.

100 female medical students were included in the study and divided into two group based on their perception of body image. Body composition parameters were compared in the two groups.

35% of girls reported body dissatisfaction. 90% of the girls desired to be"neither too thin nor too fat". Peer pressure (46%) was the most influential factor.

The prevalence of body dissatisfaction is less in medical students. The p value, being statistically insignificant showed that the girls who were dissatisfied with their body image were unnecessarily concerned as the mean values of the body composition parameters were nearly close to each other in the two groups.

***Summary:** In this study, we found that body image dissatisfaction only partially determines the nutritional status of an individual.*

INTRODUCTION

Body image is an individual's mental representation of his/her body. It is a multidimensional structure. It includes two components: perceptual body image and attitudinal body image (Friedman , Reichmann, Costanzo and Musante in 2002).

Perceived body image is an important criterion for determining the nutritional status of an individual. More young girls perceive to be thin. The lack of connection between the real and the ideal perception of one's own body leads to body dissatisfaction (Dixit, Agarwal, Singh, Kant and Singh in 2011). Body dissatisfaction can lead to body size overestimation, anorexia and bulimia and nervosa.

Medical, physical and social factors must be considered to understand the causes and consequences of body dissatisfaction among female medical students (Priya, Prasanna, Sucharitha, and Vaz in 2010).

Recent study like that of Smalley, Knerr, Kendrick, Colliver and Owen (1990) have shown that determination of Body Fat percentage (BF%) is a better way to determine an individual's nutritional status than Body Mass Index (BMI) .

Bioelectrical impedance analysis (BIA) is a practical, easy and inexpensive method of measuring body composition (Wells and Fewtrell in 2006).

Studies have shown that obese individuals do not differ from their non-obese counterparts in psychological symptoms, psychopathology, or personality overall (Stunkard and Sobal in 1995)

There are very few studies of perceived body image in Indian women like that of Dixit et al (2011) and Priya et al (2010). Hence we endeavoured to study the prevalence and association of body dissatisfaction and body composition in female medical students of Nagpur.

AIMS AND OBJECTIVES:

- To assess body dissatisfaction in medical students by questionnaire.
- To assess body composition of the medical students by **Quadscan 4000**.
- To compare body dissatisfaction percentage with actually measured parameters of body composition.

MATERIAL AND METHODS:

The study was conducted in the Department of Physiology over two month's duration (July and August). The Institutional Ethics Committee approval was obtained for the study.

The sample consisted of 100 MBBS students of age group 19-23 years residing in the Ladies Hostel of Indira Gandhi Government Medical College, Nagpur.

The girls were selected after applying necessary exclusion criteria and were asked to report for study between 6th to 10th day of their menstrual cycle. Written informed consent was obtained from each subject Information about their age, perceived body image and desired body image and what lead them to develop this desired body image was collected with the help a predesigned questionnaire. Then a Case Report Form was prepared for each subject on the basis of her personal history (including the menstrual history), general and systemic examination.

Anthropometric parameters:

Body weight (in kg) was measured using **Krup's weighing machine.** Height (in cm) was measured using a scale impregnated on the wall. Waist size and hip size (both in cm) was measured using a measuring tape.

Body composition was measured using **Bodystat® Quadscan 4000**, Bioelectric Impedance Analyzer (Sr. No.: 410476; Company Name: Sun Medical Systems, Mumbai).The BIA testing guidelines by Heyward (1991) was employed in order to keep the prediction error of the BIA method at no more than 4 % (Smalley et al. in 1990).

The parameters assessed for the study were:

- Body Mass Index (in Kg per meter^2)
- Body fat percentage
- Waist/Hip Ratio

For statistical analysis, the data was entered into Microsoft Excel. The data was divided into two group – one of those who were satisfied and the other who were not with their body image. p value was calculated using Student's T-Test. Mean and standard deviation was assessed out for BMI, BF%, Lean Body Mass, Waist/Hip Ratio and Fat Free Mass Index. $p<0.05$ was taken as level of significance.

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OBSERVATIONS AND RESULTS:

Table 1: Prevalence of body dissatisfaction among medical students.

What do you think about yourself?	No. of girls	Image perception
Too fat	4	NOT SATISFIED *(n=35)*
Little Fat	20	
Too thin	11	
About right	52	SATISFIED *(n=65)*
Perfect	13	
Total =	100	

Table 2: Prevalence of desired body image.

What is your desired body image?	No. of girls
Too thin	0
Thin	4
Neither too thin nor too fat	90
A little more fat	6
Total	100

Table 3: Factors influencing perception of desired body image.

Why do you have such perception of your body image?	No. of girls
Television and movies	35
Peers	46
Social networking	19
total	100

TABLE 4: Comparison of Body Mass Index, Body Fat Percentage and Waist Hip Ratio in satisfied and non-satisfied girls.

BMI	IMAGE PERCEPTION			
	Satisfied (n=65)	Not Satisfied (n=35)	total	
Undernourished	13 (20%)	10 (28.57%)	23	
Normal BMI	41 (63.07%)	13 (37.14%)	54	
Overweight	11 (16.92%)	12 (34.28%)	23	

BODY FAT PERCENTAGE	IMAGE PERCEPTION		
	Satisfied (n=65)	Not Satisfied (n=35)	Total
BF% is less than normal	2 (3.07%)	2 (5.71%)	4
BF% is Normal	27 (41.54%)	16 (45.71%)	43
BF% is more than Normal	36 (55.38%)	17 (48.57%)	53

WAIST/HIP RATIO	IMAGE PERCEPTION		
	Satisfied (n=65)	Not Satisfied (n=35)	total
WHR is Normal (less than 0.80)	38 (58.46%)	19 (54.29%)	57
WHR is Not Normal (0.80 or more)	27 (41.54%)	16 (45.71%)	43

Table 5: Comparison of BMI, BF% and WHR in satisfied and non-satisfied groups using Mean±S.D. and *p* value.

Parameters	Image perception		*p* value
	Satisfied	Non-satisfied	
Body Mass Index	21.17±3.99	20.46±2.51	0.345545*
Body Fat %	15.46±2.04	14.86±1.50	0.131365 *
Waist Hip Ratio	0.79±0.05	0.78±0.05	0.346213*

* shows that *p* value is statistically NOT significant.

DISCUSSION:

There were four major findings: (1) More girls were satisfied with their body image. (2) A large number of girls wanted to be fit (neither too thin nor too fat) instead of being fat or thin. (3) Peer pressure was the most dominating factor that influenced their desired body image. (4)Mean BMI, Mean BF% and Mean WHR did not show statistically significant difference between satisfied and non- satisfied girls.

In our study, 65% of the girls were satisfied with their image (Table 1). This was in consistent with the study of Priya et al (2010) where 66.7% were satisfied with their image. This could be due to the fact that both the studies had similar age group and the subjects were female medical students.

In contrast, the study conducted on adolescents by Wasylkiw & Williamson(2012) and another study on women by Darani, Daniali, and Azadbakht(2013) showed that more number of subjects i.e 65.7% and 75% respectively were dissatisfied with their body image. This difference could be due to difference in participant characteristics like age, number of participants or difference in educational qualifications.

Many studies (Darani et al in 2013 and Petroski, Pelegrini, Glaner in 2012) have shown that more girls perceive to be thin. But in our study, a very large number of girls wanted to be "neither too thin nor too fat" (Table 2). This is not consistent with their findings. This could be because medical students are aware of the ill-effects of improper dieting and severe exercise regime on health. Such type of awareness should be spread among people.

Peers have a greater influence on body dissatisfaction (Table 3). This was in agreement to the study conducted by Ferguson (2013) and Goodman (2005). Study by Moore, McAvay, & Rodin (1986) have also shown that during college years, the influence of family members seems to subside, whereas the influence of peers remains steady. The influence of peers may be equivalent or stronger than that of family members **(**Park in 2005).

On comparison (Table 5), we found that the mean BMI, BF% and WHR of those who were dissatisfied with their body image was found nearly same as of those who were satisfied with their body image. The difference was found to be statistically insignificant. This made it very clear that it was unnecessary for the girls who considered themselves as fat or thin to be dissatisfied with their body image.

CONCLUSION:

There is less number of medical students who are dissatisfied with their body image. They desire for healthy body instead of lean image. The most influential factor for such desire is the peer pressure.

The p value, being statistically insignificant was an important finding. It showed that the girls who were dissatisfied with their body image were unnecessarily concerned as the mean values of BMI, BF% and WHR was near close to each other in satisfied and dissatisfied population.

Hence, we conclude that body image dissatisfaction only partially determines the nutritional status of an individual.

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