

Original Research Article

Body image perception, eating attitude and influence of media among undergraduate students of medical college in Delhi: a cross sectional study

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ABSTRACT

Background: Body image perception is being shaped by unrealistic ideals portrayed in the media. Body dissatisfaction is one of the most consistent and robust risk factors for eating disorders, low self-esteem, depression, and obesity. Therefore, the objective of the current study is to ascertain the body image perception, abnormal eating attitudes and the role of media among undergraduate students of a medical college in Delhi, India.

Methods: Cross-sectional study on 370 undergraduate medical students of Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, India selected using stratified random sampling. India. Students completed a self-administered questionnaire which consist of demographic information, perceived body image, Eating Attitudes test (EAT-26) to assess eating attitudes, Socio Cultural Attitude Towards Appearance Questionnaire 3(SATAQ-3) scale for the role of media on body image perception. Data was analyzed using SPSS v21.

Results: A total of 370 students (57.6% males and 42.4% females) aged 17-30 years, mean age of 20.30 years±2.02(SD). Abnormal body image perception was seen in 35.4%, 21.1% had abnormal eating attitude (EAT-26≥20), 36.5%, 40.5% agreed to be influenced by models and athletic figures in media respectively, 42.2% accepted that media was their source of information regarding standards of attractiveness, 27.6% felt pressured to be attractive according to SATAQ-3. Males more than females had disordered eating attitudes and felt media pressure to achieve an ideal body image. Significant association was observed between age and perceived body image (p=0.033), gender and EAT-26 score (p=0.039), EAT 26 and perceived body image (p=0.006), general internalization of media and perceived body image (p=0.003), internalization-general, internalization-athlete, media as source of information and EAT-26 score (<0.001, 0.001, 0.003 respectively).

Conclusions: The media should take more responsibility to not represent unrealistic ideals of body image concerning both males and females. Educational and preventive efforts at institutional levels should be made to promote a healthy body image and eating behaviours.

Keywords: Body image perception, Eating attitudes, Eating attitudes test-26, Socio cultural attitude towards appearance questionnaire 3, Medical students, Role of media

INTRODUCTION

Body image has been defined as “the mental picture we have of this body’s measures, contours and shape; and this feelings related to these characteristics and to this

body parts” by Gardner.¹ Various factors play a role in building body image perception, such as psychological elements, socio-cultural influences, age, gender friends and family members.²

Today, media has become an integral part of everyday life. Body image perception is being shaped by unrealistic ideals portrayed in the media. Media influences people to follow and accept what it depicts as a mythic concept in their daily life. It often over-represents models and actors who are thin and under-represents overweight or obese characters.³ Therefore, it has become important to understand the specific role that the media plays, to realize the steps that can be taken to reduce the damaging effects.

Women are being portrayed unrealistically thin and men absurdly muscular. Media exposure has been shown to increase men's concern about muscularity and make them feel pressured to become more muscular.⁴ Internalization means accepting or agreeing with social standards of beauty, which can sometimes happen without realizing it. Sociocultural ideals are most influential when they are internalized.⁵

Grabe et al, said body dissatisfaction is “one of the most consistent and robust risk factors for Eating Disorders (EDS) and as a significant predictor of low self-esteem, depression, and obesity”.³ Therefore, it becomes important to identify disordered eating behaviors before they lead to pathological eating disorders, as the treatment is more effective and fast if detected early. Disordered eating behaviors are unhealthy eating habits that may include skipping meals, restrictive dieting, and compulsive overeating as well as intuitive eating, more prevalent among males and male athletes.⁶⁻⁸ Between the ages of 18 years and 25 years, students transition from adolescence to adulthood, undergo several physical changes, which some find difficult to accept. According to Dahlin et al, (2005) health science students (medical and nursing) are under high levels of stress which is a causative factor of eating disorders, which in turn is intrinsically linked to body image perception and influenced by media.⁹ In India, research on body image perception, eating disorder and the role of media on body perception is mainly focused on adolescents and females. There is dearth literature on these topics among males and also medical students. Therefore, the objective of the current study is to ascertain the body image perception, abnormal eating attitudes and the role of media among undergraduate students of a medical college in Delhi, India.

METHODS

A cross-sectional study was conducted from May 2017 to June 2017 among undergraduate medical students of 1st, 2nd, 3rd and 4th professional years of Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi which is an apex government institute in Delhi.

Study design

The sample size was calculated taking the minimum expected prevalence of eating disorder as 31.09% in

Indian students.¹⁰ Using the formula $4pq/l^2$, where $p=31.09$, $q=(1-p)$, absolute error (l) as 5%, and adding a 10% non-response rate, the sample size came out as 377, rounded to 380.

Students were selected using stratified random sampling from 1st, 2nd, 3rd and 4th year. There were 150 students enrolled each year and 95 students were randomly selected from each professional year using the random number table.

Inclusion criteria

- Students who gave consent to participate in the study

Exclusion criteria

- Students who were not present to fill the questionnaire were excluded from the study.

Informed written consent was taken from all students. Sufficient time was given to fill the questionnaire, Data was discarded from 10 students as the questionnaires were not filled properly. The final analysis was done on 370 students. Ethical clearance was taken from the institutional ethical committee of Vardhman Mahavir Medical College and Safdarjung Hospital before starting the study.

Study tools

A predesigned pretested self-administered questionnaire in English was used to collect the baseline demographic information (age, gender, religion, total family income, socioeconomic status) and the self-perceived body image. Socio-economic status was according to the modified BG Prasad Scale.¹¹ Eating attitude and role of media on body image was assessed using the EAT-26 (Eating Attitude Test-26) scale and SATAQ-3 (Social-Cultural Attitudes Toward Appearance Questionnaire) respectively. For assessing self-perceived body image, there were 3 response categories, “too thin”, “Normal”, “too fat”. “Too thin” and “Too fat” were taken as abnormal body image perception.

EAT-26 Scale (Eating Attitude Test-26)

The Eating Attitudes Test (EAT-26) has been used in research as a reliable measure of identifying the presence of symptoms that are consistent with either a possible eating disorder or disordered eating behavior. Individuals who score 20 or greater ($EAT-26 \geq 20$) are considered to be at risk of having an eating disorder. The scale has 26 questions assessing four dimensions, which include dieting, bulimia, food preoccupation, and oral control. Each item was rated on a scale of 0-3 as follows: never= 0, rarely= 0, sometimes= 0, often= 1, usually= 2, and always= 3.¹²

Social Cultural Attitudes Toward Appearance Questionnaire (SATAQ-3)

SATAQ-3 is a measure of agreement (internalization) with societal appearance standards with 3 subscales (30 questions) that have exhibited excellent convergent validity with measures of body image and eating disturbance. The questionnaire assesses four aspects of media influence on individuals using four subscales: (1) Internalization-General (the support and acceptance of media messages concerning unrealistic aesthetic ideals such as models); (2) Internalization-Athlete (approval and acceptance of an athletic body ideal); (3) Pressure (apparent pressure from various media to strive for ideals of attractiveness); and (4) Information (the level to which various media are reflected as a significant source of information about appearance). The subscales of the SATAQ-3 have been considerably associated with appearance disorder. It is a five-point Likert scale and responses are graded as 5= definitely agree, 4= mostly agree, 3= neither agree nor disagree, 2= mostly disagree, 1= definitely disagree. Higher scores on the SATAQ-3 indicate that there are higher levels of involvement in social-cultural attitudes toward appearance.¹³

Data analysis

Data was analyzed using licensed Statistical Package for Social Sciences (SPSS) package v.21.0. The data were summarized and presented in the form of tables and appropriate diagrams. The qualitative data were summarized as proportions and quantitative data as mean (standard deviation). Categorical variables were analyzed using the Chi-square test. Associations with p-value <0.05 at 95% CI were considered to be statistically significant.

RESULTS

Out of the 370 students who participated in the study, 213(57.6%) were males and 157(42.4%) were females. The age of the students ranged from 17-30 years with a mean age ±SD of 20.30 years ±2.02. The socio-demographic profile of the students is shown in (Table 1).

More than one-third of the students had (131, 35.4%) had an abnormal perceived self-body image. According to the EAT-20 scale, 78(21.1%) of the students had an abnormal eating attitude /affinity to develop an eating disorder. (Figure 1 and 2).

Using the SATA-Q questionnaire to study the role of media on perception about oneself, more than 1/3rd of the study students were influenced by models/actresses (36.5%) and athletic/sports figures in media (40.5%).

It is important to note that 156(42.2%) accepted that media was their source of information regarding standards of attractiveness and almost 1/4th of the

students (27.6%) agreed to have felt the pressure to adhere to popular appearance ideals. (Figure 3)

Table 1: Sociodemographic characteristics of students (n=370).

Socio-demographic characteristics	Number (%)	
Age	17-19	134(36.2)
	20-22	192(51.9)
	Above 23	44(11.9)
Gender	Male	213(57.6)
	Female	157(42.4)
Religion	Hindu	289(78.1)
	Muslim	43(11.6)
	Sikh	24(6.5)
	Christian	9(2.4)
	Others	5(1.4)
Total family income (Rs./month)	>80,000	189(51.1)
	≤80,000	181(48.9)
Socio-Economic status	Upper class	299(80.8)
	Upper Middle	19(5.1)
	Middle	9(2.4)
	Lower Middle	2(0.5)
	Lower class	2(0.5)

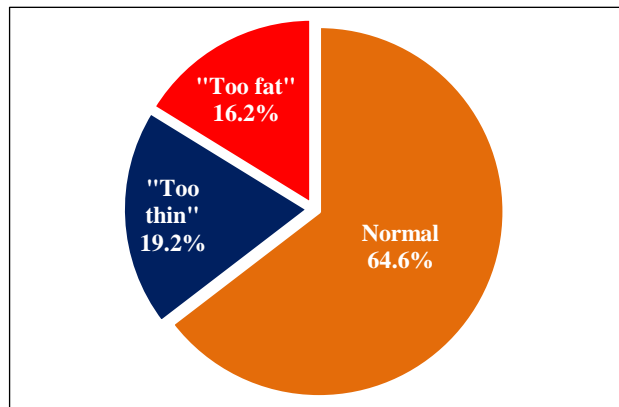


Figure 1: Perceived body image by the students.

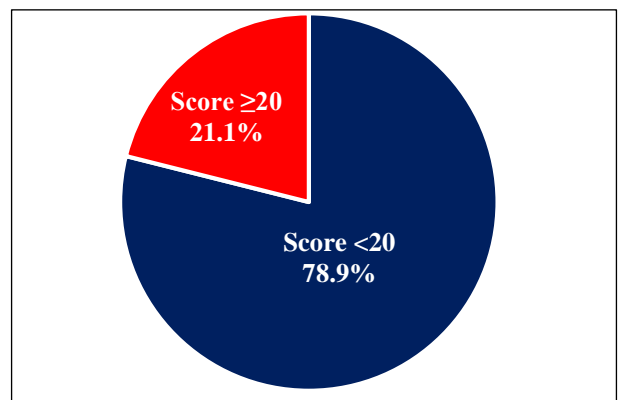


Figure 2: EAT- 26 score of students (N=370) (Score ≥20: Presence of an abnormal eating attitude).

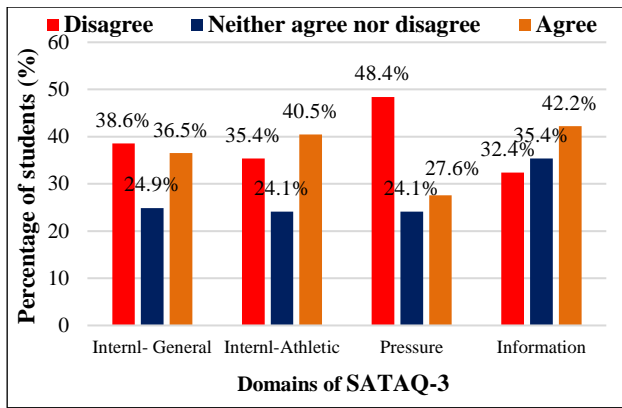


Figure 3: Influence of media on body image perception among students measured using the SATAQ-3 questionnaire (N=370).

On analysis of the factors, abnormal body image perception was seen in 39.4% of the students who were ≥ 20 years compared to 28.4% of the students who were <20 years and the association was significant ($p=0.033$).

Another significant association was also observed between gender and pressure to attain an ideal body image ($p=0.039$), where a higher number of males reported feeling the media pressure to attain an ideal body compared to females (31% males' vs 22.9% females).

Males (23.5%) also had a higher tendency to develop an eating disorder (abnormal eating attitude) than females (17.8%), however, this association was not significant (Table 2).

Table 2: Association of age and gender with perceived body image, EAT-26 score and pressure to attain an ideal body image (N=370).

Perceived body image		Normal n(%)	Abnormal (%)	p-value ^q	
Age (in years)	<20	96(71.6)	38(28.4)	0.033*	
	≥ 20	143(60.6)	93(39.4)		
Gender	Male	96(71.6)	38(28.4)	0.596	
	Female	143(60.6)	93(39.4)		
EAT-26 score		<20 n (%)	≥ 20 n (%)		
Age (in years)	<20	103(76.9)	31(23.1)	0.466	
	≥ 20	189(80.1)	47(19.9)		
Gender	Male	163(76.5)	50(23.5)	0.189	
	Female	129(82.2)	28(17.8)		
Pressure to attain an ideal body		Agree n(%)	Neither agree nor disagree n(%)	Disagree n(%)	
Age (in years)	<20	38(28.4)	39(29.1)	57 (42.5)	0.153
	≥ 20	64(27.1)	50(21.2)	122 (51.7)	
Gender	Male	66(31.0)	56(26.3)	91 (42.7)	0.039*
	Female	36(22.9)	33(21.0)	88 (56.1)	

q= Chi-square test ; EAT26 score ≥ 20 suggests presence of an abnormal eating attitude/affinity to develop an eating disorder.

Table 3: Association between perceived body image and EAT-26 score (N=370).

Perceived body image	EAT-26 score	p-value ^q	
		<20 n (%)	≥ 20 n (%)
Normal		199(83.3)	40(16.7)
Abnormal		93(71.0)	38(29.0)

q= Chi-square test

Abnormal eating attitude or tendency to develop an eating disorder was seen in 29% of the students who abnormal body image perception, compared to 16.7% who perceived their body as normal, and the association was statistically significant ($p=0.006$) (Table 3). Abnormal eating attitude (eat ≥ 20) was observed in 23.7%, 32.6%, 11.2% of students who agreed, neither agreed nor disagreed and disagreed being influenced by aesthetic or thin ideals shown in media respectively ($p<0.001$).

A significant association was also seen between Internalisation-athlete i.e. students who agreed to be influenced by athletic figures in media and EAT-26 score ($p=0.001$), where the abnormal eating attitude was seen in 28.7% of students who agreed vs 10.7% who disagreed. Similarly, the tendency to develop an eating disorder (abnormal eating attitude) was seen in 27.6% vs 10.8% of students who agreed and disagreed that media was their source for setting body image ideals respectively and the association was significant ($p=0.003$) (Table 4).

Table 4: Association between domains of SATAQ-3 with perceived body image and EAT-26 score (N=370).

		Perceived body image		p-value	Eat- 26 score		p-value
		Normal n (%)	Abnormal n (%)		<20 n (%)	≥ 20 n (%)	
Internalization general	Agree	95(70.4)	40(29.6)	0.003*	103(76.3)	32(23.7)	<0.001*
	Neither agree nor disagree	46(50.0)	46(50.0)				
	Disagree	98(68.5)	45(31.5)				
Internalization athlete	Agree	100(66.7)	50(33.3)	0.741	107(71.3)	43(28.7)	0.001*
	Neither agree nor disagree	55(61.8)	34(38.2)				
	Disagree	84(64.1)	47(35.9)				
Information	Agree	98(62.8)	58(37.2)	0.418	113(72.4)	43(27.6)	0.003*
	Neither agree nor disagree	66(70.2)	28(29.8)				
	Disagree	75(62.5)	45(37.5)				
Pressure	Agree	70(68.8)	32(31.4)	0.253	82(80.4)	20(19.6)	0.173
	Neither agree nor disagree	61(68.5)	28(31.5)				
	Disagree	108(60.3)	71(39.7)				

Chi-square test

DISCUSSION

The current study was taken up to find body image perception and risk of development of an eating disorder/presence of abnormal eating attitudes among medical and to assess the influence of media. To the best of this knowledge, this study is one of the few which included both males and females.

In the present study, almost 1/3rd of the study participants (35.4%) had abnormal body image perception. Distorted body image perception/dissatisfaction found on literature review in India varied from 10.9% in Delhi (13-18-year-old students) to 20%, 13.54%, 33.3% in female medical students in Karnataka.¹⁴⁻¹⁷ Body image dissatisfaction reported internationally ranged from 43.9% (using Figure Rating scale) in Moroccan students, 75.49% in Brazil to 81% in UAE (58.2% and 41.8% in males and females respectively) students.¹⁸⁻²⁰ The difference in prevalence can be due to the use of different scales/methods to assess body image perception. The difference in demographic characteristics between different regions of India and developed countries can also contribute to the wide array of results.

In this study, abnormal eating attitude was seen in 21.1% of the students. Comparing this results to other studies in India, which reported a prevalence of abnormal eating attitude as 16.9%, 29.2%, 26.67%.²¹⁻²³ There was a wide variation in prevalence found in other countries, e.g. China: 4.5%, Spain: 7.8%, Singapore: 10.5%, Brazil: 13.3%, South Africa: 21.2%, US: 22-26%, Japan: 35%, Turkey: 45.2%.²⁴

The variable prevalence might be explained by the difference in methodology of the study, the composition

of the participants (most studies focused on females only) and also the cultural and economic backgrounds of the study population.

Approximately (36.5-40%) students agreed to be influenced by the appearance of personalities such as models and athletes depicted in the media in the current study. In India, a study on adolescents revealed that 15% felt pressured to attain the media ideals of attractiveness. This means that approximately one in every third college student is prone to the artificial standards set by the media on how to look.¹⁰

Abnormal body image perception was seen more in students who were older than 20 years (p=0.033), however, a higher proportion of younger students reported abnormal eating attitude and felt pressured by the media, group, though the results were not statistically significant for the latter two. Upadhyah et al, Rashmi et al in India found that older age groups to be more susceptible to disturbed body image perception and eating attitudes.^{23,25} However, Alvarenga et al, (2010) in Brazil reported a contrasting result. They said that older students were less likely to be influenced by media, therefore less likely to have a poor body image perception.²⁶ Unlike developed countries where the pressure to look good starts as early as middle school, in India, this transition happens in college, which may explain the older age group being affected more in India.

In the present study, abnormal body image perception was similar in both the genders, slightly favoring females though the finding was not statistically significant. Previous studies on abnormal body image perception have also mostly concluded that it is seen more in females.²⁰⁻²⁸ However, Boutahar K did not find any gender difference in body image perception in Moroccan

university students.¹⁸ But an interesting finding to note in the present study was that males more than females had an abnormal eating attitude and felt the media pressure to attain an ideal body, the latter being statistically significant ($p=0.039$). This is interesting as it points to the changing trend. Body image, eating disorder and media influence are talked only in the context of females even today but author need to realize males are equally prone to these afflictions if not more. However, in Gujrat, India studies reported body dissatisfaction and an abnormal eating attitude present more in females.^{28,29} Abnormal EAT-26 score was seen in 5.3% female and 4% male Chinese university students.²³ In a study by Turel et al, at a Midwestern university in the USA, 65.2% of males and 68.6% of females had body dissatisfaction. Among the body dissatisfied participants, the abnormal eating attitude was seen in 13.4% males and 21.3% females. The study also concluded that females more than males felt pressure to attain an ideal body.³⁰ Russello et al, in the USA found a statistically significant difference between male and female participants on sociocultural internalization scores as measured by the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ), where women reported higher levels of internalization than men.³¹

In an interesting study, in a rural community in Western Fiji, the impact of the introduction of TV was studied. They reported that prior to the advent of TV, “thin” people were considered to be sickly, incompetent, but TV led to discontent with being “fat” in adolescent girls.³²

In the present study, abnormal body image perception was seen in 29.6% and 50% students who agreed and neither agreed nor disagreed respectively to internalize thin or beauty ideals set by the media ($p=0.003$). Similar results were reported by Ganesan S et al, in adolescent college girls in Tamil Nadu, India, where sociocultural pressure to be thin was significantly associated with body dissatisfaction.³³ Various international studies have also found that exposure to physical ideal images lowers body satisfaction in both men and women.^{34,35} author have to note in the current study, 50% of the students who were not sure if media influenced them and 31.5% who said it did not, had an abnormal body image perception. This should raise the question about the other factors that play a role here? It can be peer pressure, family pressure or the question of whether the younger generation is inherently prone to not feeling good about themselves. These questions need to be answered as the consequences of not addressing the issue may be catastrophic.

In this study, a significant association was found between Internalization-general, Internalization-Athletic and information components of SATAQ3 and EAT-26 score ($p<0.001$, 0.001, 0.003 respectively). In all the three, a higher proportion of students who agreed to the influence of media on body image had an abnormal eating attitude (EAT 26 score >20). Similar results were reported in a study conducted by Turel et al., where they found that

males who scored higher on the socio-cultural scale, had an increased risk of acquiring an eating disorder.³⁰ Studies in the UK found that eating discord occurred only when socio-cultural ideals of attractiveness were internalized. For men, it was an athletic figure and for women it was thinness.^{36,37} Upadhyah et al found mood susceptibility, perfectionism to be a factor in the development of eating disorder.²³

In the present study, 29% vs 16.7 % of those who perceived an abnormal and normal body image respectively, had an affinity to develop an eating disorder (abnormal eating attitude) ($p=0.006$). A few Indian studies have tried to explore similar associations. A positive correlation between body shape dissatisfaction and eating attitude was found in Indian medical students and female nursing students.^{15,21} In another study on medical students a high score on BSQ (body shape questionnaire) scale was found to be a significant predictor of eating (disorder) morbidity.²⁹ In the US, one longitudinal study, found a strong and consistent relationship between body dissatisfaction and unhealthy weight control behaviours such as dieting, pills, laxatives in 2516 males and female adolescents.³⁸ Similarly, another prospective study, reported, body dissatisfaction was the most consistent predictor of future eating pathology, increased the likelihood of developing an eating disorder by 68% among adolescent girls.³⁹

This study was limited by a few factors. The cross-sectional nature of the study prevents us from making causal inferences. As the participants were taken from one medical college who have a similar socio-economic environment and cultural upbringing, hence the study may not be generalizable to medical students all over the country. Anonymous self-administered questionnaires can lead to biased answers and results. Factors associated with distorted body image, disordered eating disorder and influence of media have not been studied

Despite the limitations, this study was one of the very few studies on the topic in India on medical students and involving both genders rather than focusing on only females. The three interlinked behaviors studied together i.e. body image, eating disorder and media influence, giving us a better understanding of the relationship.

CONCLUSION

The findings of this study give us a deeper understanding of the problem and an insight into the changing trends when it comes to body image, eating disorder and the influence of media on young minds. It also provides important information which can give direction to clinicians and institutions. There was a high prevalence of abnormal body image perception, disordered eating behaviors in medical students and up to 40% agreed to the influence of media on self-perception. We also found that males more than females had disordered eating attitudes and felt media pressure to achieve body image

ideals, which indicates the changing trend among males than reported in earlier studies. It was one of the important inferences from the study. The study also reported a significant association between age and perceived body image, gender and EAT-26 score and influence of media and perceived body image as well as with EAT-26 score.

The media should take more responsibility to not represent unrealistic ideals of body image concerning both males and females. Preventive efforts at institutional levels should be made to promote a healthy body image and eating behaviors. Effort towards screening of students for eating attitude/disorders can be made by the educational institution. A more comprehensive study of longitudinal nature is needed to understand the true nature of the problem involving both the genders.

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