

# Prevalence, patterns, and determinants of body image dissatisfaction among female undergraduate students of University of Delhi

Abhilasha Kapoor, Madhu Kumari Upadhyay, Narinder Kumar Saini

Department of Community Medicine, University College of Medical Sciences and GTB Hospital, Delhi, India

## ABSTRACT

**Background:** Body image is an essential aspect of young girls' self-definition and individual identity and is influenced by multitude of factors including cultural, social, cognitive, affective, and biological. In recent times, excessive concern about the body image has been reported and the prevalence of body image dissatisfaction (BID) has increased among adolescent and young girls. **Objectives:** The objective of this study was to estimate the prevalence of BID, its pattern and the factors associated with it among female undergraduate students and also to assess the level of concern about their body image. **Methods:** This cross-sectional study was conducted among 180 female undergraduate students using a contour drawing rating scale and a body shape questionnaire to assess BID and its pattern, and the level of concern about body image, respectively. Binary logistic regression was applied to identify the factors determining body image perception. **Results:** The prevalence of body image dissatisfaction was 76.7% with overweight and obesity, and media influences being significantly associated with it. Nutritional status, mother's educational status, and media influences were the determinants. Body shape concerns were found among 30.6% of the participants out of which 7.3% reported marked to moderate concerns. **Conclusions:** Our findings highlighted a higher prevalence of perceived dissatisfaction with the body image and also that it is not simply the outcome of sociocultural pressure to conform to a certain body type but is the result of a complex interaction between individual differences in actual body mass and preference for a thin body ideal.

**Keywords:** Body image dissatisfaction, body image perception, body shape concerns

## Introduction

Body image is defined as the perceptions that one has of their own anthropometric measurements, shapes and contours of the body, and feelings related to these factors that influence the satisfaction with the body shape or specific parts of the body.<sup>[1,2]</sup> In recent decades, excessive concern about the body image has been reported, and the prevalence of body image dissatisfaction (BID) has increased among adolescent and young

girls.<sup>[3]</sup> Higher prevalence of BID has been seen among females as compared to the males.<sup>[4]</sup>

Earlier it was believed that body image distortion and related consequences were western societal phenomenon. However, due to epidemiological shift, developing countries like India are facing simultaneous presentation of double burden of communicable and noncommunicable diseases.<sup>[5]</sup> Weight concerns and BID are common as most adults and a significant proportion of children and adolescents are overweight and attempting to lose weight.<sup>[6]</sup> Body mass index (BMI) is often used as an indicator of nutritional status for assessing the body image self-perception and to know the determinants of body weight-related behaviours.<sup>[7]</sup>

**Address for correspondence:** Dr. Abhilasha Kapoor, Department of Community Medicine, University College of Medical Sciences and GTB Hospital, Dilshad Garden, Delhi, India.  
E-mail: kapoor.abhilasha3643@gmail.com

Received: 13-09-2021

Revised: 05-12-2021

Accepted: 15-12-2021

Published: 14-05-2022

### Access this article online

#### Quick Response Code:



Website:  
www.jfmpc.com

DOI:  
10.4103/jfmpc.jfmpc\_1851\_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Kapoor A, Upadhyay MK, Saini NK. Prevalence, patterns, and determinants of body image dissatisfaction among female undergraduate students of University of Delhi. J Family Med Prim Care 2022;11:2002-7.

Body image is influenced by multitude of factors including cultural, social, cognitive, affective and biological.<sup>[8]</sup> Several factors have been identified to be associated with body image perception which includes socioeconomic status, weight, age, sex, weight-control behaviour and pressure from family members and peers.<sup>[9]</sup>

There is paucity of studies in India and gaps remain in our understanding of the factors responsible for the development of behaviours related to body weight and appearance among young girls; hence, a comprehensive assessment using standardized tools is required to fill these gaps. It is also known that cultural and environmental influences play significant roles in the development of BID; local studies will be of significant importance to know the prevalence of BID. Many researches have been done on the psychosocial impact of COVID-19. However, increased social media usage and decreased involvement in the physical activity during lockdown has further raised the concerns of body image perception which are not much discussed.<sup>[10]</sup> The current study was carried out with the objective to estimate the prevalence of BID, its pattern and the factors associated with it among female undergraduate students and also to assess the level of concern about their body image.

## Methods

A cross-sectional study was conducted in four randomly selected colleges of North Campus of Delhi University from November 2018 to April 2020. A total of 180 female college students aged 18 years and above were randomly selected after obtaining permission from the Head of the Institution of each of the selected colleges. After explaining nature and purpose of the study and assuring confidentiality, a written informed consent was obtained from all the participants. Those who did not give consent and who could not be contacted after two visits were excluded from the study and a second randomisation without replacement was done. Each study participant was contacted personally by the investigator at a suitable place and time during the college hours and within the college premises to ensure adequate privacy. Clearance was obtained from the Institutional Ethics Committee – Human Research of UCMS.

### Data was collected using the following tools

**A semistructured, self-prepared questionnaire** was used for sociodemographic details and questions related to peer and family influences and physical activity.

**Anthropometric measurements:** Height (in cm) was measured by using a portable stadiometre and weight (in kg) by using digital weighing machine and BMI was calculated. Nutritional status based on BMI was classified as underweight ( $<18.5 \text{ Kg/m}^2$ ), normal weight ( $18.5\text{--}22.9 \text{ Kg/m}^2$ ), overweight ( $23.0\text{--}24.99 \text{ Kg/m}^2$ ), and obese ( $>25.0 \text{ Kg/m}^2$ ).<sup>[11]</sup>

**Contour Drawing Rating Scale (CDRS)** was used to find out the pattern of BID. It examines nine body shapes, from 1 for the thinnest to 9 for the largest. Participants chose their current body

shape and ideal body shape desired by them. Any discrepancy between the current and ideal body shape shows dissatisfaction with body image. A positive score indicates the dissatisfaction due to being overweight and a negative score indicates dissatisfaction from being underweight.

**Body Shape Questionnaire (BSQ) 34:** It is a self-assessment questionnaire to find out the level of concern about the body shape. BSQ is a 34-item questionnaire. Each item is scored from 1 to 6 with 1 implying “never” and 6 implying “always,” and the overall score is the total of 34 items ranging from 34 to 204.

Both English and Hindi versions of the questionnaires were made available to the participants, and based on their language preference one was finally administered.

**Statistical analysis:** Data was analysed with SPSS software version 20.0. Mean and standard deviation were calculated for quantitative variables and frequency and percentages for qualitative variables. The prevalence of BID was computed using CDRS. The Shapiro–Wilk test was used to determine the normality of distribution of the variables. To find out the association of BID and shape concerns, tests like Chi-square test, Mann–Whitney *U* test and Spearman correlation coefficient were used. Binary logistic regression was applied to identify the determinants of dichotomous dependent variable, body image perception (satisfied or dissatisfied with body image) with sociodemographic and other independent variables having a *P* value  $<0.25$  on univariate analysis. All the assumptions for binary logistic regression were satisfied. The variables were selected by backward stepwise elimination method to create the final logistic model and the best fitting model based on Hosmer–Lemeshow test was selected. Associations with *P* value  $< 0.05$  at 95% confidence level were taken as statistically significant.

## Results

The participants included in the study had a mean age of 18.96 years (SD = 0.93) with their age ranging from 18 to 22 years. Sociodemographic, academic details and other factors are shown in Tables 1 and 2. Mean BMI was  $21.46 \text{ Kg/m}^2$  (SD = 3.37). The prevalence of overweight or obesity in our study was 27.8% and one-fifth of the participants were underweight. The majority of the participants belonged to nuclear families. Nearly one-third of the mothers of the study participants were graduate and about one-fourth had professional or a postgraduate qualification. Only 13.9% of the study participants were in a relationship with a male partner, while the rest were single.

Nearly three-fourths of the study participants were pursuing Bachelor of Arts course while 21% of them were pursuing Bachelor of Science (BSc) and another 6%, Bachelor of Commerce courses. Most of them were from first academic year (52.2%) of graduation course, whereas 29.4% were second year students and 18.4% were third year students.

**Table 1: Distribution of sociodemographic factors among the study participants**

Factors	Frequency (n=180)	Proportion (%)
Socio-demographic details		
Nutritional status (BMI)		
Normal weight	94	52.2
Underweight	36	20
Overweight	20	11.1
Obese	30	16.7
Place of permanent residence		
Delhi	116	64
Outside Delhi	64	36
Place of current residence		
Home	102	57
Hostel	25	14
PG accommodation	53	29
Type of family		
Nuclear	122	67.8
Joint	58	32.2
Mother's education*		
Illiterate	3	1.9
Up to high school	46	29.7
Above high school	106	68.4
Relationship status		
Single	155	86.1
In a relationship	25	13.9

\*Out of total 180 participants, 25 did not report their mother's educational status (n=155)

Nearly one-fourth of the study participants reported that they felt the pressure of being compared with their siblings by their family members, 40.6% reported that they compared their own body with that of an actress and nearly half of the participants reported that they were being compared by their peers with other friends or batch mates. About half of the participants reported that they were involved in some kind of moderate or vigorous physical activity for at least 30 min daily for 5 days a week, whereas only one-fifth of the participants had participated in any competitive sports team.

Body shape concerns were found among 30.6% of the study participants out of which 7.3% had marked to moderate concerns. The prevalence of BID among female students was 76.7%. Among these participants, 62% perceived themselves as fat and desired a thinner body, whereas 14.5% perceived themselves as thin and desired to become fatter [Figure 1]. A positive correlation was observed between degree of BID (participants rating own figure "two or more sizes smaller than ideal," "one size smaller than ideal," "similar to ideal," "one size larger than ideal," and "two or more size larger than ideal") and level of body shape concerns (no concern, mild concern, moderate concern, and marked concern), and it was found to be statistically significant ( $P = 0.454$ ;  $P < 0.001$ ).

Body shape concerns and dissatisfaction among the study participants were associated with nutritional status ( $P \leq 0.001$  and  $P = 0.001$ , respectively) and media influences such as comparing or desiring own body to be like an actress ( $P = <0.001$  and

**Table 2: Distribution of academic and other factors among study participants**

Factors	Frequency (n=180)	Proportion (%)
Academic details		
Type of college		
Co-ed colleges	90	50
Only for women	90	50
Type of course		
BA/BCom	142	78.9
BSc	38	21.1
Academic year		
1 <sup>st</sup> year	94	52.2
2 <sup>nd</sup> year	53	29.4
3 <sup>rd</sup> year	33	18.4
Type of schooling		
Government school	74	41
Private school	106	59
Family and peer influences		
Pressure of being compared with siblings		
Yes	44	24.4
No	136	75.6
Compared own body with an actress		
Yes	73	40.6
No	107	59.4
Members of friend circle comparing with other friends		
Yes	86	47.8
No	94	52.2
Moderate or vigorous activity		
Yes	87	48.3
No	93	51.7
Physical activity		
Participation in competitive sports team		
Yes	36	20
No	144	80

$P = 0.004$ , respectively). The participants who were overweight or obese and those who compared or desired their body to be like that of an actress were more likely to show body shape concerns and dissatisfaction with own body image. An increasing trend between BMI and the proportion of participants having BID and body shape concerns was observed in our study. Other factors like sociodemographic (age, type of family, mother's education, father's education, current and permanent place of residence), academic (type of college, course, academic year, schooling), peer and family influences, and physical activity were not associated with body shape concerns and dissatisfaction with own body image.

Nutritional status of the study participants, mother's educational status, and comparing or desiring own body to be like that of an actress were found to be significantly determining the BID. The participants who had abnormal BMI, that is either underweight or overweight/obese, whose mothers were illiterate or educated up to high school and those who compared or desired own body to be like that of an actress were at higher risk of having BID. These factors correctly classified 77.7% of the cases and 17.8%

of BID could be explained by these factors based on Nagelkerke  $R^2$  value of 0.178 [Table 3].

## Discussion

The prevalence of obesity and overweight is showing a rising trend among the adolescents and the young adults which not only is a high-risk factor for many medical conditions but also has an impact on one's mental health and eating behaviour. Primary health care physicians are the first contact with the community and may be the ones to deal with the mental health issues and eating behaviour even among adolescents and young adults, and hence they need to be sensitised with the concept of body image perception and/or dissatisfaction. The aim of this study was to find out the patterns and determinants of body image perception, which is mostly not much explored in Indian settings.

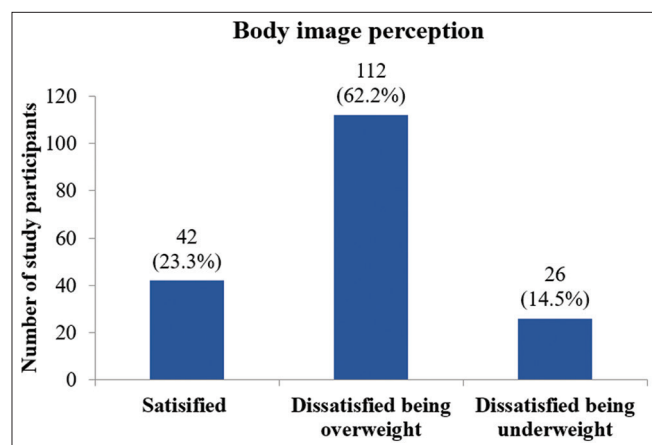
The study included female college students aged 18–22 years, pursuing regular undergraduate courses in various colleges of

University of Delhi. The female college students were selected as the study participants since the problem of BID has been found to be greater among adolescent and young adult females compared to older age group and males.

The prevalence of overweight or obesity was 27.8% among the participants in the study while that of underweight was 20% based on revised Asian Indian cut off for BMI. These findings are consistent with the prevalence of overweight or obesity among young females in the study done by Anand *et al.*, Ramaiah *et al.* and Jalai-Farahani *et al.*<sup>[12-14]</sup> Similar high prevalence of overweight and obesity in different countries and across varied cultural settings highlights the global burden of this morbidity, which is now not just limited to the developed world. Moreover, globalization of the risk factors for obesity like changing lifestyle and eating habits, easy availability of junk food could also explain for higher prevalence of overweight and obesity in these studies.

A significant proportion of participants (30.6%) in this study showed body shape concerns. The findings of the study were comparative with results of previous studies conducted across India as well as in western countries. Ramaiah *et al.*,<sup>[14]</sup> Balhara *et al.*,<sup>[15]</sup> Fortes *et al.*<sup>[16]</sup> and Aparicio-Martinez *et al.*<sup>[17]</sup> reported the prevalence of body shape concerns ranging from 19 to 51.3%. Consistent findings of these studies could be most likely due to similar age group of the participants, participants being college students and most importantly use of same tool for assessing body shape concerns.

Based on CDRS, very high prevalence of BID (76.7%) was observed. Also, the findings of this study are similar to the studies done in the past. Radwan H *et al.*,<sup>[18]</sup> Silva *et al.*,<sup>[19]</sup> De Araujo *et al.*,<sup>[20]</sup> As-Sa'Edi *et al.*<sup>[21]</sup> also reported a higher prevalence of BID ranging from 58.2 to 77.5%. Comparative findings of these studies were probably due to use of similar tools and lends credence to the high prevalence of BID among young females.



**Figure 1:** Distribution of Pattern of body image perception among the study participants ( $n = 180$ )

**Table 3: Factors determining body image dissatisfaction based on binary logistic regression analysis**

Predictors	B	SE	Adjusted odds ratio (95% CI)	P
Nutritional status (Ref. normal weight)				
Normal weight				
Others (Underweight/Overweight/Obese)	0.926	0.397	2.524 (1.160-5.493)	0.020
Mother's educational status (Ref. above high school)				
Above high school				
illiterate/educated up to high school	1.411	0.710	4.099 (1.020-16.475)	0.047
Comparing or desiring own body to be like that of an actress (Ref. did not compare)				
Did not compare				
Compared/Desired	1.264	0.430	3.541 (1.525-8.224)	0.003
Relationship status (Ref. single)				
Single				
In a relationship	1.125	0.680	3.081 (0.812-11.688)	0.098
Final Model				
Chi-square (df=4)			22.462	
P			<0.001	
Hosmer-Lemeshow test			0.906	
Nagelkerke $R^2$			0.178	

However, the prevalence of BID reported by Rashmi *et al.*, Goswami *et al.* and Priya *et al.* was in the range of 13.4–34% based on visual analogous scale which was much lower as compared to our study.<sup>[22-24]</sup> The difference could be due to different tools used by these studies.

The higher prevalence of BID and concerns amongst the participants in this study could be explained in the context of changing sociocultural milieu and thin body idealization. Widespread media exposure to the western ideals for body shape has led to unrealistic expectations regarding western standards of beauty in South Asian regions as well.<sup>[11]</sup>

Age of the study participants was not associated with body shape concerns as well as BID, which was similar to the study done by Soohinda *et al.* and de Araujo *et al.*<sup>[20,25]</sup> As these studies included a sample of more or less homogenous group of undergraduate college students with their ages varying within a narrow range, the difference in BID according to age may not have been obvious. Another possibility in these studies could be that BID is already well established in adolescence itself in females and these studies included young adult females as participants.

Mother's educational status plays an important role in the development of one's own body image, and its association has been observed in previous studies done by Rashmi BM *et al.* and Goswami *et al.*<sup>[22,23]</sup> However, in the current study, BID and body shape concerns were not affected by the mother's educational status as majority of our participants' mothers were at least educated up to high school. The inconsistent findings between this study and the previous ones could have resulted from the fact that a more educated mother would probably help her child adjust to her body shape and size better, may not compare her body with other siblings and may be in a better position to suggest scientifically proven methods for weight management.

In this study, family influences and peer pressure were not associated with BID and concerns probably because these were assessed by a single question and a denial on the part of the study participants could not be completely ruled out. However, Rashmi *et al.* and As-Sa'Edi *et al.* reported a significant association between BID and relative's and peer group's opinions about the body shape among female college students.<sup>[21,23]</sup>

Active involvement in physical activity was not associated with dissatisfaction with body image as well as concerns. The study findings were supported by the studies done by Rashmi *et al.* and de Araujo *et al.* among female college students.<sup>[20,23]</sup> Previous studies have shown that a positive body image is more likely to be associated with engagement of the individuals in physical activity.<sup>[26]</sup> Different sociocultural environments and inclusion of only female students in the study could be the possible reasons for no association between the two.

An increasing trend between BMI and the proportion of participants having BID and body shape concerns was observed

in the study. Similar associations were also seen in the studies conducted in the past. Higher BMI was significantly associated with BID in the study by Rashmi BM *et al.* and de Araujo *et al.*<sup>[20,23]</sup> Corroborative findings of these studies certainly suggest that higher BMI is an important marker of both body image concerns and dissatisfaction. Moreover, poor body image could even negatively influence people's lifestyle choices, thus determining a higher risk of obesity and overweight, as well as more difficulties in changing their behaviours.<sup>[27]</sup>

Higher BMI levels: mothers who were graduate or postgraduate and influence from media such as desiring own body to be like that of an actress were determinants of dissatisfaction with own body image amongst the study participants. BMI and media influences were found the significant predictors of BID in studies done by Ganesan *et al.*<sup>[28]</sup> and Singh *et al.*,<sup>[29]</sup> which supports the findings of this study.

The strengths of the study included the non-hospital-based sample which allowed for better generalization of the findings than participants recruited from clinical settings. A randomly selected sample of female college students of North Campus of University of Delhi allowed our results to be generalized to all the female college students of North Campus of University of Delhi. The use of the standardized tool for the assessment of BID adds further evidence to the limited but growing literature on the pervasiveness of BID and concerns in the Southeast Asian and Indian contexts. Limitations of the study were only female college students were included, but the earlier belief that body image concerns were gender-specific affecting, mostly the females are now changing with emerging evidence that body image concerns are common among the males as well, although the parameters may not essentially be the same as females. Some of the tools in the study were self-administered; hence, there could be a possibility of self-reporting bias. Some of the items in the questionnaire may not completely be culturally relevant in the Indian context as the tool was developed in western countries and there was a possibility that the tool may not have been able to fully capture the Indian perspective around body image perception.

## Conclusion

Prevalence of body image dissatisfaction as well as body shape concerns was quite high among female college students. Factors that were determining BID included nutritional status (underweight, overweight/obese), mother's educational status (illiterate or educated up to high school) and media influences such as comparing or desiring own body to be like that of an actress. A larger multicentric study or nationwide research including participants from different settings is recommended so that the findings could be generalised and to get an overview of the actual prevalence of BID in young Indian women. Furthermore, any discussion on causality could only be tentative from a cross sectional design. Hence, to determine the causal relations between the explored variables, that is, BID

and associated factors, a longitudinal or a prospective study must be conducted. An evaluation of the impact of COVID-19 on body image perception is recommended. Study findings recommend that health education programmes for adolescents and young adults must emphasize the need to consult a medical professional, a dietician or a professional counsellor for weight management rather than indulging in self-prescription.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

- Grogan S. *Body Image: Understanding Body Dissatisfaction in men, Women and Children*. 2<sup>nd</sup> ed. Routledge; 2007.
- Markey CH, August KJ, Dunaev JL. Understanding body image among adults in mid-late life: Considering romantic partners and depressive symptoms in the context of diabetes. *J Health Psychol* 2020;25:1707-16.
- Pinheiro AP, Giugliani ERJ. Body dissatisfaction in Brazilian school children: Prevalence and associated factors. *Rev Saude Publica* 2006;40:489-96.
- Lawler M, Nixon E. Body dissatisfaction among adolescent boys and girls: The effects of body mass, peer appearance culture and internalization of appearance ideals. *J Youth Adolesc* 2011;40:59-71.
- Malik VS, Willett WC, Hu FB. Global obesity: Trends, risk factors and policy implications. *Nat Rev Endocrinol* 2013;9:13-27.
- Bhatt-Poulose K, James K, Reid M, Harrison A, Asnani M. Increased rates of body dissatisfaction, depressive symptoms, and suicide attempts in Jamaican teens with sickle cell disease. *Pediatr Blood Cancer* 2016;63:2159-66.
- Muth JL, Cash TF. Body image attitudes: What difference does gender make? *J Appl Soc Psychol* 1997;27:1438-52.
- Slade PD. What is body image? *Behav Res Ther* 1994;32:497-502.
- Pon LW Jr, Kandiah M, Mohd Nasir MT. Body image perception, dietary practices and physical activity of overweight and normal weight Malaysian female adolescents. *Malays J Nutr* 2004;10:131-47.
- Ahuja KK, Banerjee D. A psychosocial exploration of body dissatisfaction: A narrative review with a focus on India during COVID-19. *Front. Glob. Womens Health* 2021;2:669013.
- WHO Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet* 2004;363:157-63.
- Jalai-Farahani S, Abbasi B, Daniali M. Weight associated factors in relation to health-related quality of life (HRQoL) in Iranian adolescents. *Health Qual. Life Outcomes* 2019;17:3.
- Anand T, Grover S, Tanwar S, Kumar R, Meena GS, Ingle GK. Accuracy of body weight perceptions among students in a medical school in Central Delhi, India. *Educ Health* 2015;28:96-100.
- Ramaiah R. Eating disorders among medical students of a rural teaching hospital: A cross-sectional study. *Int J Community Med Public Heal* 2015;2:25-8.
- Balhara YPS, Mathur S, Kataria DK. Body shape and eating attitudes among female nursing students in India. *East Asian Arch Psychiatry* 2012;22:70-4.
- Fortes LS, Cipriani FM, Coelho FD, Paes ST, Ferreira MEC. Does self-esteem affect body dissatisfaction levels in female adolescents? *Rev Paul Pediatr* 2014;32:236-40.
- Aparicio-Martinez P, Perea-Moreno AJ, Martinez-Jimenez MP, Redel-Macias MD, Pagliari C, Vaquero-Abellan M. Social media, thin-ideal, body dissatisfaction and disordered eating attitudes: An exploratory analysis. *Int J Environ Res Public Health* 2019;16:4177.
- Radwan H, Hasan HA, Ismat H, Hakim H, Khalid H, Al-Fityani L, *et al.* Body mass index perception, body image dissatisfaction and their relations with weight-related behaviours among University students. *Int J Environ Res Public Health*. 2019;16:1541.
- Silva LPR, Tucan AR, Rodrigues EL, Del Re PV, Sanches PM, Bresan D. Dissatisfaction about body image and associated factors: A study of young undergraduate students. *Einstein (Sao Paulo)* 2019;17:eA04642.
- de Araujo TS, Barbosa Filho VC, Gubert FDA, de Almeida PC, Martins MC, Carvalho QGDS, *et al.* Factors associated with body image perception among Brazilian students from low human development index areas. *J Sch Nurs* 2018;34:449-57.
- As-Sa'Edi E, Sheerah S, Al-Ayoubi R, Al-Jehani A, Tajaddin W, Habeeb H. Body image dissatisfaction: Prevalence and relation to body mass index among female medical students in Taibah University, 2011. *J Taibah Univ Med Sci* 2013;8:126-33.
- Goswami S, Sachdeva S, Sachdeva R. Body image satisfaction among female college students. *Ind Psychiatry J* 2012;21:168-72.
- Rashmi BM, Patil SS, Angadi MM, Pattankar TP. A cross-sectional study of the pattern of body image perception among female students of BBM college in Vijayapur, North Karnataka. *J Clin Diagn Res* 2016;10:LC05-9.
- Priya D, Prasanna KS, Sucharitha S, Vaz NC. Body image perception and attempts to change weight among female medical students at Mangalore. *J Community Med* 2010;35:316-20.
- Soohinda G, Mishra D, Sampath H, Dutta S. Body dissatisfaction and its relation to big five personality factors and self-esteem in young adult college women in India. *Indian J Psychiatry* 2019;61:400-4.
- Kirkcaldy BD, Shephard RJ, Siefen RG. The relationship between physical activity and self-image and problem behavior among adolescents. *Soc Psychiatry Psychiatr Epidemiol* 2002;37:290-6.
- Meriaux B, Berg M, Hellstrom AL. Everyday experiences of life, body and well-being in children with overweight. *Scand J Caring Sci* 2010;24:14-23.
- Ganesan S, Ravishankar SL, Ramalingam S. Are body image issues affecting our adolescents? A cross-sectional study among college going adolescent girls. *Indian J Community Med* 2018;43(Suppl 1):S42-6.
- Singh S, Gadiraju P. Prevalence and correlates of body dissatisfaction and disordered eating patterns in Indian youth: The role of media. *Indian J Psychiatry* 2020;62:509-16.