



SELF-BODY IMAGE PERCEPTION AND ITS RELATION WITH NUTRITIONAL STATUS IN ADOLESCENT GIRLS –A STUDY FROM AMRAVATI DISTRICT

Community Medicine

Dr. Priya A. Warbhe*	Assistant Professor, Department of Community Medicine, Dr. PDMMC, Amravati, Maharashtra, India. *Corresponding Author
Dr. Ajay K. Jawarkar	Professor and Head, Department of Community Medicine, Dr. PDMMC, Amravati, Maharashtra, India.
Ms. Pravina V. Kale	Under-graduate student, Dr. PDMMC, Amravati.

ABSTRACT

Background: Body image is the way a person perceives or thinks about his/her body and how it looks to others. Body image is an essential aspect of young girls' self-definition and individual identity which gets influenced by various biological, psychological and social factors. Excessive concern about body image, body image misconceptions are leading to dissatisfaction, disturbed eating patterns, affecting the nutritional status and also leading to depression and anxiety disorders. This concept of body image has been less explored in Indian context, especially among adolescent girls.^{1,2,3,4} **Research questions:** Is there distortion and dissatisfaction in body image perception, also what is its relation with nutritional status among adolescent girls from Private, Public (Government) and Ashram schools of Amravati District? **Methods:** Descriptive cross sectional, and comparative study was carried out on 450 Mid-Adolescent girls (9th & 10th grades) from private, government and ashram schools of Amravati District. Research tool questionnaire included questions regarding their current, expected perception of body image and image satisfaction-dissatisfaction. Current and expected image perception was measured using contour drawing scale. Anthropometric examination was done to calculate BMI. **Results:** Majority of girls from government schools perceived themselves as having normal body image as against private and ashram school girls who perceived themselves as thin. Majority of girls had BMI in Underweight category. Overweight and obesity was found in 8.22% participants. Overall, 58.44% participants were underweight. Total 38.7% participants wrongly estimated their body images. Overall, 76.6% participants were dissatisfied with their weight, 43.5% for being thin, 33.1% for being heavy. **Conclusions:** There is distorted perception of body image among adolescent girls. There is dissatisfaction seen with body image in adolescent girls. Clinical assessment also found majority of girls as underweight and few girls as overweight/obese. Regular school health education programs to encourage concept of positive body image and its health benefits is needed.

KEYWORDS

Body Image, Nutritional status, Perception, Adolescent girls

INTRODUCTION

Adolescence represents a pivotal stage in the development of positive or negative body image. It is one of the most apprehensive stages in which the adolescent is trying to adjust to various physical, emotional and psychological changes. Adolescent girls constitute about 1/5th total female population in the world. Adolescence in girls has been recognized as a special period which signifies the transition from girlhood to womanhood. Many influences exist during the teen years including transitions (e.g. puberty) that affect one's body shape, weight status, and appearance.^{1,2,3,4} Salient influences on body image include the media, which target adolescents, and peers who help shape beliefs about the perceived body ideal. Pressures to conform to these socially prescribed body ideals help to explain associations between weight status and body image. The concepts of fat talk and weight-related bullying during adolescence greatly contribute to an overemphasis on body weight and appearance as well as the development of negative body perceptions and dissatisfaction surrounding body parts. Excessive concern about body and image misconceptions are leading to dissatisfaction, disturbed eating patterns, affecting the nutritional status and also leading to depression and anxiety disorders.^{5,6,7} Exploring an individual's perception of his/her weight status and relating this perception to his/her real weight can help in determining the unrealistic body images views. Body image consciousness and attempts to change weight are being witnessed more among adolescents in urban India than in rural India. It has been observed that Indian female adolescents are more consciousness to control their weight by restricting diet rather than doing physical exercise. The available literature on body image issues in India has been mainly related to eating disorders like anorexia nervosa and bulimia. Very few studies have explored the body image perception, body image satisfaction and weight changing patterns among young girls in less urbanized cities of India.⁸

Hence a comparative study to assess the relationship between body image and adolescent weight status, and the comparison of having a negative body image during adolescence in Indian setting between urban rural and tribal adolescent girls was done.

OBJECTIVES

- To find out the perception (current and expected) of body image amongst adolescent girls
- To assess nutritional status of adolescent girls by BMI (Asian standards) method
- To evaluate the association between body image perception and nutritional status

MATERIALS AND METHOD

Study design: Descriptive cross sectional, and comparative study.

Study population/setting: Mid-Adolescent girls (9th & 10th grades) from each school cluster (Private, Government and Ashram Schools) from Amravati District

Study duration: Study was carried out from July to December 2019 after taking due permission from school principals and parents of participants.

Sampling Method and Sample Size: Cluster random sampling to select 2 schools randomly from each Government, Private and Ashram schools. With open epi version 3 and taking dissatisfaction with body size⁹ as 65%, CL at 80%, sample size in each cluster=150. Final sample size 450.

Selection of Participants: Mid-Adolescent girls (9th & 10th grades).

Research tool

Participants were interviewed based on pretested, validated questionnaire in language best understood by them. The questionnaire included questions regarding their perception of body image, body image satisfaction-dissatisfaction. Over and under estimation of body images were based on BMI and current body image perceptions. Current and expected image perception was measured using Contour drawing scale.¹⁰ The scale has nine silhouettes of females, first three are lean, next three are normal, and the last three are overweight. Height was measured by stadiometer to the nearest to 0.1 cm and weight was measured using digital weighing machine to the nearest to 0.1 kg and body mass index levels were calculated.

Ethical consideration and confidentiality

Institutional ethics committee approval was taken before commencing the study. Data was collected after permission and consent from parents along with willingness of participation in study. Data collected was kept confidential. After study was conducted study participants were sensitized to positive body image, its health benefits and importance of not yielding to harmful practices

STATISTICAL ANALYSIS

Data was entered into MS excel and analysis was done using Statistical Package for the Social Sciences software for Windows version 20.0 (SPSS Inc., Chicago, IL, USA). Percentages were calculated and Chi-square analysis was done for qualitative data. P value of <0.05 was termed as significant, value of <0.001 was termed as highly significant and value <0.0001 was termed as very highly significant, Fischer's Exact test was calculated when expected count in a cell was less than 5.

Operational definitions

Adolescence - A transitional stage of physical and psychological development that generally occurs during the period from puberty to adulthood.

Body Image- As per Gardener's definition, body image is "the mental picture we have of our body's measures, contours and shape; and our feelings related to these characteristics and to our body parts"^{11,12} (*Complexion, facial features, hair was not taken into consideration in body image perception for current study*)

Body mass index (BMI) [body weight (kg)/height² (m)], is the most common measure used in population-based studies for primarily categorizing nutritional status. Body mass index levels was calculated according to the revised guidelines for Asians (especially South East Asian adults including Indians) {Underweight: BMI < 18.5; Normal Weight: BMI 18.5-22.9; Overweight: BMI 23.0 – 27.5; Obese: BMI > 27.5}

The contour drawings scale is a highly effective instrument for assessing people's level of dissatisfaction with their body weight and body size while evaluating the perceptual component of body image. Dissatisfaction with body image (BID) was identified from subtracting the values of the current and desired silhouettes. Positive values indicated dissatisfaction with excess weight. Negative values indicated dissatisfaction with leanness. Values equal to zero indicated satisfaction.^{13,14}

RESULTS

Total 450 mid-adolescent girls from selected government, private and ashram schools of Amravati district were interviewed. The mean age in years of adolescent girls from government, private and ashram schools was 14.25, 14.09 and 14.73 years respectively.

Table 1: Mean age in years of study participants

	Adolescents girls		
	Government Schools	Private Schools	Ashram Schools
No. of Participants	150	150	150
Mean Age (Years)	14.25	14.09	14.73
S.D.	0.677	0.433	1.588

Table 2: Distribution of variables in study participants

Variables	Number (n=450)	Adolescent girls		
		Government Schools	Private Schools	Ashram Schools
Current body image perception	Thinness	50 (33.3)	78 (52)	104 (69.3)
	Normal	100 (66.7)	68 (45.3)	46 (30.7)
	Heaviness	0 (0)	04 (2.7)	0 (0)
Body Mass Index	Underweight	89(59.3)	88(58.7)	86(57.3)
	Normal	55(36.7)	53(35.3)	42(28)
	Overweight & Obese	6(4)	09(6.0)	22(14.7)
Body image conception	Overestimated	47(31.3)	26(17.3)	18(12)
	Proper	89(59.3)	103(68.7)	84(56)
	Underestimated	14(9.3)	21(14)	48(32)
BID (Body image Dissatisfaction)	Thinness	49(32.7)	32(21.3)	115(76.7)
	Satisfied	54(36)	44(29.3)	7(4.7)
	Heaviness	47(31.3)	74(49.3)	28(18.7)

Figures in parenthesis indicates percentages

Majority (67%) of girls from government schools perceived themselves as having normal body image as against private (52%) and ashram school girls (69%) who perceived themselves as thin. Majority of girls (58%) had BMI in underweight category. Overall overweight and obesity was found in 8.22% participants (more in private and ashram school girls as compared to government school girls). In our study 20.2% participants overestimated their body image perception, 18.4% underestimated their body image. Total 38.7% participants wrongly estimated their body images. In our study 76.6% participants were dissatisfied with their weight, 43.5% for being thin, 33.1% for being heavy.

Table 3: Association of variables with BMI in study participants

Variables	Number (n=450)	BMI			Chi-square/Exact value	P value
		Under weight	Normal	Overweight / Obese		
Current Body image perception	Thinness	64(82.1)	13(16.7)	1(1.3)	48.715	P=0.001
	Normal	24(35.3)	38(55.9)	6(8.8)		
	Heaviness	0(0)	2(50)	2(50)		
Satisfaction - Dissatisfaction	Dissatisfied with leanness	73(63.5)	32(27.8)	10(8.7)	19.629	P<0.001
	Satisfied	3(42.9)	4(57.1)	0(0)		
	Dissatisfied with Heaviness	10(35.7)	6(21.4)	12(42.9)		

Figures in parenthesis indicates percentages

Table 3 depicts association of variables with BMI. Current body image current and satisfied- dissatisfied with body image was significantly associated with BMI categories.

DISCUSSION

Current study showed majority of girls from government schools perceived themselves as having normal body image as against private and ashram school girls who perceived themselves as thin. Avita R. et. al. (2015) study from Ramnagara, Karnataka found that 48.6% participants perceived image as normal.⁹ Rashmi M. et. al. (2016) study from North Karnataka, found that 76.2% participants perceived their image as normal.¹⁵

In our study overweight and obesity was found in 8.22% participants, 58.44% participants were underweight. Avita R. et. al. (2015) study from Ramnagara, Karnataka found 32% were under-weight and 5% were overweight and obese.⁹ Ramya V. et. al.(2017) study from Chitradurga found 53.06% of the adolescent girls as undernourished and only 0.41% as obese.¹²

Current study found that 38.7% participants wrongly estimated their body images. Dixit S. et.al. (2011) study from Uttarpradesh found 32.8% of girls had overestimated their weight, while only 4.9% of girls had underestimated their body weight.⁸ Ramya V. et. al.(2017) study from Chitradurga found 56.04% of the girls over estimated their own body weight and only 10.99% of girls underestimated.¹²

In our study 76.6% participants were dissatisfied with their weight, 43.5% for being thin, 33.1% for being heavy. Dixit S. et.al. (2011) study from Uttarpradesh found 26.6% girls were dissatisfied with their body image.⁸ Avita R. et. al. (2015) study from Ramnagara, Karnataka found 78.8% of the adolescents were dissatisfied with their body size.⁹ In our study current body image perception and BMI had very significant association which was similar to Priya D. et. al., study (p=0.0001).¹¹ Also association of BMI and Satisfaction-Dissatisfaction with body image was found to be significant in our study which was similar to Ramya V. et. al., study (p = 0.024).¹² Limitations - The influence of mass media and fast food outlets on body image perception and weight changing patterns was not explored.

CONCLUSIONS

There is distorted perception of body image among adolescent girls. There is dissatisfaction seen with body image in adolescent girls. Clinical assessment also found majority of girls as underweight and few girls as overweight/obese. Clinical assessment of nutritional status by BMI is significantly associated with body image perception of girls and satisfaction- dissatisfaction of body images perceived by girls.

Recommendations

Our study assessed that there is distorted body image perception by girls which is supported by clinical assessment. Girls are also dissatisfied with their body image. This perception if not corrected by regular health education programs at schools and lifestyle modification activities will lead to psychological changes, cultivation of eating disorders to achieve slender body which will have detrimental effect on physical growth and development. It is worth mentioning that positive body image perception is important to individuals' self-esteem. The concept of positive body image, its health benefits and importance of not yielding to harmful practices or using unscientific methods to attain perceived ideal body weight needs to be emphasized. The role of balanced diet, physical exercise and positive thinking through school health education will help in attaining above goal.

Table No.	Title
1	Mean age in years of study participants
2	Distribution of variables in study participants
3	Association of variables with BMI in study participants

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