

TO STUDY THE BODY IMAGE AMONG THE ADOLESCENT AGE GROUP AND ITS CORRELATION WITH BODY MASS INDEXKeziah Joseph¹, Gurmeet Kaur², Jugesh Chhatwal³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Body image or satisfaction with physical appearance has been established as an important aspect of self-worth and mental health across lifespan. Given the fact that physical appearance is a multifaceted structural concept that depends not only on inner biological, but also psychological and socio-cultural components, body image is conceived as one's attitudinal dispositions toward the physical self. The purpose of this study is to evaluate the body image satisfaction-dissatisfaction among adolescent age group, to correlate the components of body image with body mass index and the influence of parents, peers and mass media on body image.

KEYWORDS: Body image, satisfaction, dissatisfaction, 'Multidimensional Body Self-relations Questionnaire', Appearance Scale, peer pressure, Parental influence, mass media.

INTRODUCTION: Modern society encourages the search for the perfect body. Previously aesthetic ideal was a thin-body, and now superimposed on this is the need to be physically fit. This drive for fitness is mainly prevalent in adolescents and young adults; a high proportion of adolescents are trying to lose or gain weight or change their body proportion.⁽¹⁾

Body image has been established as an important aspect of self-worth and mental health across life span.⁽²⁾ During the past two decades, there has been wide research concerning body image in children and adolescence. This research has been fueled both by concern about the effects of poor body image in children and adolescents themselves and by the assumption that body dissatisfaction during childhood and adolescence creates a risk for the development of eating disturbances as well as depression in adulthood.⁽³⁾

Body image is the dynamic perception of one's body – how it looks, feels, and moves. It is shaped by perception, emotions, physical sensations, and is not static, but can change in relation to mood, physical experience, and environment.⁽⁴⁾ A two-dimensional model of body image incorporates both perceptual and emotional components.

Causal risk factors for body image dissatisfaction may be considered under two broad categories: social / environmental factors and individual attributes. Likely social / environmental factors include:

- Weight and shape teasing from peers and family.⁽⁵⁾
- Parental concerns about weight and shape.⁽⁶⁾
- Peer concern with weight and shape.⁽⁷⁾
- Exposure to unhealthy and unrealistic thin media body image ideals.⁽⁸⁾
- Specific high risk environments, e. g. ballet schools, gymnastic classes.⁽⁹⁾

Individual attribute factors include:

- Body mass index.⁽⁵⁾

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- Tendency to compare one's body with those of others.⁽⁶⁾
- Internalization of the importance of thin body image ideal.⁽¹⁰⁾
- Self-esteem.⁽¹¹⁾

A study conducted in Delhi showed that concerns about excess weight were prevalent among the adolescent girls, even among those who were normal-weight and underweight. The level of satisfaction with body size decreased with increase in weight, while dieting behavior was reported in a higher number of obese (76.6%) compared with normal-weight (38%) and underweight (14%) girls.⁹

The present study is intended to study the body image concerns among adolescent's school children in Ludhiana.

AIMS AND OBJECTIVES:

1. To study body image satisfaction–dissatisfaction among the adolescent age group of both genders.
2. To correlate body mass index with the above.
3. To study the influence of parents, peers and mass media on body image.

MATERIAL AND METHODS: The present study was conducted among the adolescent age group attending a private school (St. Thomas Senior Secondary School) in Ludhiana. A total of 500 school children of 15–18 years of age group of both the gender were included in the study.

The study was commenced after obtaining permission from the principal of the school.

INCLUSION CRITERION: School children of the adolescent age group (15-18 years) of both the gender were included in the study.

EXCLUSION CRITERIA: Children with known chronic medical disorders like metabolic disorders, nephritic syndrome, neuromuscular disorders, seizure disorders, chronic hemolytic anemia's were excluded from the study.

STUDY DESIGN: A total of 500 children of the age group (15-18 years) of both the gender were enrolled in the study. A general profile of each subject which includes age, sex, and academic performance was taken. A talk regarding the issues on body image was delivered to a group of students to familiarize them with the objectives of the study and queries, if any were clarified.

All adolescents were anthropometrically assessed by using appropriate scales. Height was measured to the nearest 0.5 cm using a stadiometer without shoes. Weight was measured without shoes in light uniform using spring scale to the nearest 0.1 kg. The body mass index was calculated as per the formula and it will be graded using age adjusted standardized BMI percentile distribution CDC charts.⁽¹²⁾

$\text{BMI} = \frac{\text{Weight (in kg)}}{\text{Height (m}^2\text{)}}$

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According to the Centre for Diseases Control (CDC), adolescents will be classified as:

BMI > 95th percentile = overweight.

BMI between 95th and 5th percentile = normal.

BMI < 5th percentile = underweight.

Questionnaires were given to each participant. Each participant completed the questionnaire anonymously. The time period given to complete the questionnaire was approximately 45 minutes.

The 'Multidimensional Body Self-relations Questionnaire – Appearance Scale'⁽¹³⁾ taking into consideration - Appearance evaluation, Appearance orientation, Body areas satisfaction, Overweight preoccupation, Self-classified weight were answered by the individual based on their perception.

Participants will rate their level of agreement with the items on a Likert type scale of one (definitely disagree) to five (definitely agree). The means and standard deviations will be compared against the norms derived from the US National Survey Data.⁽¹³⁾

The 'Socio-cultural Attitudes Towards Appearance Scale'⁽¹⁴⁾ will evaluate the following: Information about awareness about mass medias regarding trends of fashion and "being attractive" and pressure of mass media Internalization of the thin ideal and changing trends of fashion and "being attractive".

The 'Appearance Culture among Peers subscale'⁽¹⁵⁾ will evaluate the following: Appearance conversation with friends, Peer appearance criticism.

The 'Parental Influence Scale'⁽⁵⁾ which has been created for this study, will assess the influence of parents on body image.

The last three scales will have either a positive or a negative response. The data obtained will be tabulated and subjected to multi variant analysis of variance, T-test multiple regression analysis and various other statistical tools.

Also, correlation between body mass index and the variables of body image were be evaluated using multi variant analysis of variance.

RESULTS: The summary of the results are as follows:

The mean age of students included in the study was 16.24+0.84. There were almost equal number of boys and girls. The mean percentage and standard deviation of marks obtained in the previous year of all adolescents was 68.56+11.23. Almost 2/3rds (65.0%) of the adolescents' parents were graduates.

Appearance evaluation subscale reflects the level of physical attractiveness and general body satisfaction. In this subscale, girls had lower mean scores than boys reflecting a lower body appearance evaluation in girls than boys. Also, girls had a greater dislike towards their physique than boys.

Appearance orientation reflects the level of investment in one's appearance. Surprisingly, the mean score for boys was more as compared to girls, although it was not statistically significant.

Body areas dissatisfaction was observed in 38.2% of the adolescents. Significant numbers of girls (43.5%) were dissatisfied with their body image than boys (32.9%). Body areas satisfaction displays the satisfaction with discrete aspects of one's appearance. Girls had lower satisfaction levels in lower torso, height and mid-torso, whereas boys had lower satisfaction levels in mid-torso and weight.

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Overweight pre-occupation reflects fat anxiety, weight vigilance, dieting and eating restraints. Girls (mean score=2.85) were more pre-occupied about their weight than boys (mean score=2.69). Also, significant numbers of girls (23%) than boys (12%) were on weight loss diet and 18% girls have tried to lose weight by fasting or by going on crash diets.

Self-classified weight depicts how one perceives their body weight. Girls had higher scores than boys suggesting that girls have higher weight perception than boys. Significant number of girls (34%) classified themselves as overweight as compared to boys (20%). Also, more number of girls (42%) than boys (23%) felt that they were perceived by others as overweight. Twenty five percent of the normal weight and 30% of the underweight adolescents overestimated their body size.

Of the 500 adolescents included in the study, 88.2% were in normal range of body mass index. The number of underweight subjects in each gender was same (5.3%) and the number of obese adolescents was higher in boys (2.5%) as compared to girls (0.4%).

The overall level of satisfaction with one's appearance, the extent of investment in one's looks and satisfaction with discrete body areas decreases with increase in body mass index whereas overweight preoccupation and the perception of being overweight significantly increases with increase in body mass index among boys. Among girls, again the level of satisfaction with one's appearance and the extent of investment in one's looks and satisfaction with discrete body parts, decreases with increase in body mass index. Unlike boys, girls with normal body mass index had more overweight preoccupation than overweight and obese girls. The perception of being overweight classified as 'self-classified weight' increased with increase in body mass index. Also statistical difference was found in appearance evaluation and overweight preoccupation on correlation with body mass index.

Among boys, TV fashion channels was an important source of information about fashion and being attractive followed by TV stars and magazine but in girls, magazines was an important source of information followed by TV fashion channels and TV stars.

The pressure generated by the media on body image was more on girls (84%) than boys (76.08%). Girls felt pressure to have a perfect body, to look pretty, to diet and to lose weight. In boys (75.9%), there was more pressure to exercise to obtain a muscular body.

Almost 2/3rd of the boys and girls compared their bodies to TV stars and wished to look like them. Also, more number of girls than boys compared their bodies to models in magazines and wished to look like them. Approximately half of the adolescents have appearance conversation with friends and significant proportion of girls (57%) talk how they would want their bodies to look like, and the size and shape of their bodies.

Of the total subjects, 5.31% boys and 3.92% girls were teased or made fun of the size and shape of the body by girls. Also, 8.98% girls and 6.27% boys were teased or made fun of by boys. Thus, boys and girls were more teased and laughed at by boys as compared to girls.

Of the total subjects, 18.2% girls reported that boys say that they should go on a diet. Also, adolescent girls were suggested by 32.5% girls and 23.14% boys that they would look better if they were thinner. Hence, girls were criticized by more girls to look thinner.

Among boys, 14.69% were told by girls to be muscular and were suggested by 36.3% boys and 21.2% girls that they would look better if they were more muscular. Hence, boys were criticized by boys to be more muscular.

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Parents of more than one-fifth of the adolescents tell them to lose weight and to be thin, but > 90% of their parents want them to be physically fit and to take a healthy diet, thus having a positive role on body image which can be attributed to the awareness of educated parents.

TV programmes, TV commercials and music videos were an important source of information about fashion and being attractive (t value 4.362, p <0.001). Magazines and TV stars also had an influence on body image.

Adolescent girls were more influenced by media to lose weight and to have a perfect body whereas adolescent boys were more influenced to exercise for muscular bodies. Overall, the influence of mass media was more on girls than boys.

Appearance conversation with friends regarding how their bodies looked in their clothes, the size and shape of their bodies and how to look their best influenced body image (t value 2.343, p <0.01).

Although peer criticism about general body and shape did have an influence on body image but specific criticism about being muscular in boys and being thinner in girls highly influenced body image.

The parental concern to take a healthy diet and to be physically fit influenced body image. The positive correlation of parents with body image can be attributed to the education of their parents. Parents of adolescents can be judgemental about growing adolescent's weight and body any casual comment about body and to tell their lose weight, gives rise to low self-esteem and negative body image of adolescents. This is truer of mothers of adolescent girls as reflected in our study.

DISCUSSION: In the present study, the 'multi-dimensional body self-relations questionnaire was used which assessed appearance evaluation, appearance orientation, body areas dissatisfaction, overweight preoccupation and self-classified weight. The results obtained were compared to the adult norms derived from the U. S. National Survey data (1985), based on 996 males and 1070 females.

It is apparent that males have significantly more positive body image than females. From all the above reports, it is interesting to note that same results have been obtained in other cultures also. Though it seems that Indian culture differs from western culture in a number of ways, but perhaps the explanation given by many researchers in terms of social construction seem to be equally true for the Indian culture also. Moreover, some feminine theorists have also written that female body is constructed as an object to be looked at which holds true for every culture.

The total mean score for appearance orientation in the present study among boys was higher with value of 3.53+0.43 as compared to girls which was 3.44+0.41, though the difference was not statistically significant. Appearance orientation subscale determined the extent of investment in one's appearance reflecting negative body image. In the adult norms, the total mean score for female.^(3,9) was higher as compared to males.^(3,6) As compared to these adult norms adolescents had lower scores showed lower level of investment in appearance in adolescents.

The lower scores or lower level of investment in one's appearance in Indian girls as compared to the western girls can be attributed to the difference in culture.

External media images have impact on conceptions of self when individuals internalize these cultural appearance standards.⁽¹⁶⁾ The internalized appearance ideals come to represent personal goals and standards against which to judge self and others. The media is one aspect of an appearance

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culture that can potentially shape the development of internalization of appearance ideals and body image during adolescence. Thus, media play an important role as a cultural gatekeeper, framing standards of beauty. The repeated media images of thin females and muscular males make these idealized body shapes seemingly the standard, even though they do not reflect general population norms.

The two aspects of peer experiences that are expected to contribute to internalization and body image are appearance conversation with friends and appearance criticism from peers. Conversations with friends about appearance can be especially influential because of the increased intimacy in friendships during adolescence and the importance of close friendships in shaping the social context of adolescents. Appearance conversations direct attention to appearance related issues, reinforce the value and importance of appearance to close friends, and promote the construction of appearance ideals. These conversations with friends provide the everyday context for attending to, constructing, and interpreting information relevant to appearance concerns.

Peer criticism about appearance is a well-documented reality in the lives of adolescents. The experience of being a target of appearance criticism from peers can reinforce the value of appearance to peers and highlight specific desirable appearance attributes, the absence of which is presumably the basis of the criticism.^(17,18) Thus, peer appearance criticism not only generates a direct and potent experience with negative evaluation of one's own body by another, but it also potentially contributes to internalization by reflecting important features of the appearance culture among peers.

Parents are important agents of socialization who influence their children's body image through modeling, feedback and instruction. It has been suggested that psychic life develops on the stage of somatic reactions, or to put it more precisely in interplay with them place great values on beauty and the importance of appearance. It has been argued that children see their defects as their parents see them, and children internalize messages about their bodies from their parents.

Adolescent girls were more influenced by these media to lose weight and to have a perfect body whereas boys were influenced to exercise for muscular bodies.

The influence of parents had a more positive role on body image. The advice by parents to take a healthy diet and to stay physically fit had a greater influence on body image.⁽¹⁹⁾

CONCLUSION: Body image was studied among the adolescent age group and the correlation of body image with body mass index was determined. Also the influence of mass media, peers and parents on body image was observed.

In the present study, 34.2% of the 500 adolescent boys and girls of 15 to 18 years of age in a convenience sample showed body image dissatisfaction. It was found that more number of girls than boys were dissatisfied with their body image and dissatisfaction was more in overweight and obese adolescents.

Mass media, peer appearance conversations and peer criticisms effected body image perception in almost 60% of the adolescents. As an impact, girls wanted to lose weight and to look pretty and boys exercised more to obtain muscular bodies. Girls were more influenced by the media as compared to boys which is a matter of public health concern. Parental pressure was not much of a concern as more than ninety percent of their parents want them to take a healthy diet and to stay physically fit.

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Age (years)	Total		Boys (n=245)		Girls (n=255)	
	No.	%age	No.	%age	No.	%age
15	117	23.4	46	18.8	71	27.8
16	154	30.8	52	21.2	102	40.0
17	216	43.2	139	56.7	77	30.2
18	13	2.6	8	3.3	5	1.96
Mean+ S. D.	16.25 + 0.84		16.44 + 0.83		16.06 + 0.81	

Table 1: Age and Sex distribution of Subjects

p value = 0.0049.

Statements	Boys (n = 245)	Girls (n = 255)	P value
	Mean + SD	Mean + SD	
My body is sexually appealing	3.5 + 0.99	2.86 + 1.07	0.000474
I like my looks just the way they are	3.87 + 1.10	3.80 + 1.13	0.235206
Most people would consider me good looking	3.60 + 0.99	3.42 + 0.92	0.046512
I like the way I look without my clothes on	2.90 + 1.32	2.25 + 1.25	0.000582
I like the way my clothes fit me	4.14 + 1.13	3.69 + 1.13	0.005796
I dislike my physique	3.63 + 1.18	3.74 + 1.17	0.157662
I am physically unattractive	3.92 + 1.10	3.61 + 1.08	0.008114
TOTAL SCORE	3.21 + 0.41	2.95 + 0.41	0.000464

Table 2: Mean score of multidimensional body self-relations questionnaire among boys and girls regarding Appearance Evaluation

Q. No.	Statements	Boys (n = 245)	Girls (n = 255)	P value
		Mean+SD	Mean+SD	
1	Before going out in public, I always notice how I look	4.26+0.9	4.32+0.77	0.205725
2	I am careful to buy clothes that will make me look my best	4.42+0.83	4.35+0.9	0.181487
3	I check my appearance in a mirror whenever I can	3.91+0.96	3.85+1.09	0.252994
4	Before going out, I usually spend a lot of time getting ready	2.96+1.29	3.0+1.30	0.477928
5	It is important that I always look good	4.02+0.97	3.92+0.98	0.143936

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6	I use very few grooming products	2.9+1.09	2.47+1.31	0.890995
7	I am self-conscious if my grooming isn't right	3.24+1.09	3.08+1.23	0.107341
8	I usually wear whatever is handy without caring how it looks	3.31+1.19	3.55+1.21	0.043845
9	I don't care what people think about my appearance	2.47+1.23	2.56+1.3	0.07669
10	I take special care with my hair grooming	3.61+1.28	3.48+1.26	0.44185
11	I never think about my appearance	3.77+1.11	3.79+1.03	0.89673
12	I am always trying to improve my physical appearance	4.04+1.09	3.61+1.19	0.06130
TOTAL SCORE		3.53+0.43	3.44+0.41	0.040905

Table 3: Mean score of multidimensional body self-relations questionnaire among boys and girls regarding appearance orientation

Q. No.	Statements	Boys (n = 245)	Girls (n = 255)	P value
		Mean + SD	Mean + SD	
1	Face (facial features, complexion)	3.88 + 0.88	3.71 + 0.81	0.138593
2	Hair (colour, thickness, texture)	3.97 + 1.0	3.78 + 1.05	0.047334
3	Lower torso (buttocks, hips, thighs, legs)	3.62 + 0.95	3.35 + 1.11	0.008845
4	Mid torso (waist, stomach)	3.38 + 1.16	3.51 + 1.06	0.126050
5	Upper torso (chest or breasts, shoulders, arms)	3.56 + 1.08	3.54 + 1.08	0.797094
6	Muscle tone	3.55 + 1.08	3.55 + 0.90	0.844188
7	Weight	3.50 + 1.06	3.64 + 1.15	0.116698
8	Height	3.51 + 1.19	3.30 + 1.24	0.085456
9	Overall appearance	3.81 + 0.94	3.73 + 0.85	0.165181
TOTAL SCORE		3.64 + 0.60	3.57 + 0.56	0.122293

Table 4: Mean score of multidimensional body self-relations questionnaire among boys and girls regarding body areas satisfaction

Q. No.	Statements	Boys (n = 245)	Girls (n = 255)	P value
		Mean + SD	Mean + SD	
1	I think I am - Very underweight	3.09 + 0.78	3.21 + 0.	0.91060

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	<ul style="list-style-type: none"> - Somewhat underweight - Normal weight - Somewhat overweight - Very overweight 			
2	From looking at me, most other people would think I am <ul style="list-style-type: none"> - Very underweight - Somewhat underweight - Normal weight - Somewhat overweight - Very overweight 	2.99 + 0.83	3.18 + 0.53	0.249411
	TOTAL SCORE	3.04 + 0.83	3.19 + 0.61	0.18931

Table 5: Mean score of multidimensional body self-relations questionnaire among boys and girls regarding self-classified weight

Self-classified weight	Body Mass Index (BMI)							
	Underweight (n=26)		Normal (n=441)		Overweight (n = 26)		Obese (n = 07)	
	Number	% age	Number	% age	Number	% age	Number	% age
Underweight	11	42.3	2	0.4	0	0	0	0
Somewhat underweight	6	23.0	44	9.9	0	0	0	0
Normal weight	8	30.7	289	65.5	2	7.6	0	0
Somewhat overweight	1	3.8	99	22.4	4	15.4	1	14.3
Very overweight	0	0	7	1.6	20	76.9	6	85.7

Table 6: Correlation of self-classified weight with body mass index

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