



## Self-Concept of Obese and Non-Obese Urban Teenagers

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**ABSTRACT** The present study is based upon a sample consisting of 160 teenager boys and girls in the age group of 13-19 years from ten public schools of Ludhiana city (Punjab). Their height (cm) and weight (kg) were measured and BMI (Body Mass Index) was calculated to categorize them as obese and non-obese teenagers. All subjects belonged to upper and upper-middle-class socio-economic strata. Results revealed that an overwhelming majority of the urban teenagers, both obese as well as non-obese, had above average self-concept in all the six dimensions of self-concept irrespective of age and sex. Contrary to most of the similar studies in other countries, the present study failed to find any negative impact of obesity on the self-concept of the teenagers from Ludhiana, Punjab.

### INTRODUCTION

The term “Obese” and “Overweight” are often used, interchangeably. Technically “Obesity” is the upper end of the “Overweight”. The World Health Organization (WHO 2006) defines “overweight” as a BMI equal to or more than 25, and “obesity” as a BMI equal to or more than 30. Obesity is increasing at an alarming rate throughout the world. It has now become a problem worth attention among both developed and developing countries. Obesity in all stages of life is thought to be the result of both genetic and environmental influences. There are a number of studies which indicate that overweight and obese children are more likely to have low self-concept and that they have higher rates of anxiety disorder, depression and psychopathology (Zametkin et al. 2004). It was also found that children whose self-esteem decreased were more likely to smoke and drink alcohol than children whose self-esteem increased or remained unchanged (Strauss 2000). The present study is an attempt to explore the association of obesity and self-concept among teenagers from an urban setting, Ludhiana, which is considered a hub of industry in the state of Punjab (Northern India).

### METHODOLOGY

**Sample:** The present study is based upon a sample of 160 teenager boys (n: 80) and girls (n: 80) in the age group of 13 to 19 years. The sample was drawn from purposely-selected private schools of Ludhiana city of Punjab (India) so as to control socio-economic status (Upper-middle and Middle) of the sample subjects. The data were collected from July to December, 2005. Each selected subject was measured for height and weight and BMI was calculated. The individuals showing BMI (as per sex and age) range 27.5 to  $\geq 40$  were classified as ‘obese’ and those whose BMI ranged between 18.5-22.9 were considered ‘non-obese’. The boys’ sample of 80 comprised of 40 obese and 40 normal weight (non-obese) teenagers. And similarly girls’ sample of 80 was distributed equally over 40 obese and 40 non-obese teenagers.

**Procedures:** Saraswat’s self-concept scale (1992) was used to measure the self-concept of obese and non-obese teenagers. General information regarding the personal characteristics of the subjects like name, age, their mothers’ and fathers’ qualification, height, weight and BMI was recorded on a self-designed record sheet. Data were statistically processed for analysis of variance, Z-test, percentage, mean of scores and standard deviation.

### RESULTS

Distribution of obese and normal weight teenager boys and girls over four levels (‘High’;

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'Above average'; 'Average'; 'Below average' and 'Low') of self-concept for each of its six dimensions (Physical; Social; Temperamental; Educational; Moral and Intellectual) was observed and statistically compared between and across three age groups (13-15 years; 15-17 years and 17-19 years)\*. No significant differences could be observed between obese and non-obese teenagers of both the sexes for all dimensions of self-concept at all age levels. An overwhelming majority of both obese and normal weight teenagers of both sexes were found either in the 'High' or 'Above average' category, for each dimension of self-concept at all age levels. Therefore, subsequent results are here presented by merging all age groups for obese and normal weight boys and girls, separately.

**Physical Dimension:** It included Individual's view of their body, health, physical appearance and strength. Table 1a shows that most of the teenagers, both obese as well as normal weight fall in the 'above average level' category of the physical dimension of the self-concept. Obese boys, however, were significantly more in proportion (3.6%) in the 'average level' category as compared to non-obese boys.

**Social Dimension:** It refers to an individual's

sense of worth in social interactions. Most of the teenagers showed up in the category of 'above average level' of self-concept for its social dimension, followed by the proportions in the 'high level' category. There was no significant difference between the number of obese and non-obese teenagers in these categories. However, significant difference (in favour of non-obese girls) was found between the number of obese girls and non-obese girls (10%) in the 'average level' category (Table 1a).

**Temperamental Dimension:** It comprises of an individual's view of his/her prevailing emotional state or predominance of a particular kind of emotional reaction. Table 1a shows that most of the teenagers fell in the category of 'above average' for the temperamental dimension, irrespective of their weight status category. No significant difference was found between the number of obese and non-obese teenagers for the remaining categories of different levels for this dimension.

**Educational Dimension:** It relates to an individual's view of his/her in relation to school, teachers and extra-curricular activities. It is evident from Table 1b that majority of the teenagers, obese as well as non-obese, of both the sexes belonged to the 'above average'

**Table 1a: Distribution of obese and normal weight teenagers (boys and girls) irrespective of age for physical, social and temperament dimensions across different levels of self-concept**

Dimensions (score range of the given level of self-concept)	Obese boys (n=40)	Normal boys (n=40)	Z value	Obese girls (n=40)	Normal girls (n=40)	Z value
<i>Physical</i>						
High self-concept (33-40)	11(27.5%)	9(22.5%)	0.52	6(15.0%)	13(32.5%)	1.84
Above average self-concept (25-32)	23(57.5%)	31(77.5%)	1.91	27(67.5%)	24(60.0%)	0.70
Average self-concept (17-24)	5 (3.6%)	0	2.31*	6(15.0%)	3 (7.5%)	1.06
Below average self-concept (9-16)	1 (2.5%)	0	1.01	1 (2.5%)	0	1.01
Low self-concept (upto 8)	0	0	0.00	0	0	0.00
<i>Social</i>						
High self-concept (33-40)	10(25.0%)	11(27.5%)	0.25	11(27.5%)	5(12.5%)	1.68
Above average self-concept (25-32)	25(62.5%)	27(67.5%)	0.47	29(72.5%)	31(77.5%)	0.52
Average self-concept (17-24)	5(12.5%)	2 (5.0%)	1.19	0	4(10.0%)	2.05*
Below average self-concept (9-16)	0	0	0.00	0	0	0.00
Low self-concept (upto 8)	0	0	0.00	0	0	0.00
<i>Temperament</i>						
High self-concept (33-40)	12(30.0%)	6(15.0%)	1.61	11(27.5%)	7(17.5%)	1.07
Above average self-concept (25-32)	27(67.5%)	33(82.5%)	1.55	28(70.0%)	29(72.5%)	0.25
Average self-concept (17-24)	1 (2.5%)	1 (2.5%)	0.00	1 (2.5%)	4(10.0%)	1.39
Below average self-concept (9-16)	0	0	0.00	0	0	0.00
Low self-concept (upto 8)	0	0	0.00	0	0	0.00

\* Differences significant at 5% level.

**Table 1b: Distribution of obese and normal weight teenagers irrespective of age for educational, moral and intellectual dimensions across different levels of self-concept**

<i>Dimensions (score range of the given level of self-concept)</i>	<i>Obese boys (n=40)</i>	<i>Normal boys (n=40)</i>	<i>Z value</i>	<i>Obese girls (n=40)</i>	<i>Normal girls (n=40)</i>	<i>Z value</i>
<i>Educational</i>						
High self-concept (33-40)	15(37.5%)	15(37.5%)	0.00	15(37.5%)	17(42.5%)	0.46
Above average self-concept (25-32)	20(50.0%)	19(47.5%)	0.22	23(57.5%)	21(52.5%)	0.45
Average self-concept (17-24)	5(12.5%)	6(15.0%)	0.33	2 (5.0%)	2 (5.0%)	0.00
Below average self-concept (9-16)	0	0	0.00	0	0	0.00
Low self-concept (upto 8)	0	0	0.00	0	0	0.00
<i>Moral</i>						
High self-concept (33-40)	21(52.5%)	19(47.5%)	0.45	20(50.0%)	22(55.0%)	0.45
Above average self-concept (25-32)	17(42.5%)	18(45.0%)	0.23	19(47.5%)	15(37.5%)	0.91
Average self-concept (17-24)	2 (5.0%)	3 (7.5%)	0.46	1 (2.5%)	3 (7.5%)	1.03
Below average self-concept (9-16)	0	0	0.00	0	0	0.00
Low self-concept (upto 8)	0	0	0.00	0	0	0.00
<i>Intellectual</i>						
High self-concept (33-40)	5(12.5%)	4(10.0%)	0.35	3 (7.5%)	9(22.5%)	1.88
Above average self-concept (25-32)	34(85.0%)	30(75.0%)	1.12	34(85.0%)	26(65.0%)	2.07*
Average self-concept (17-24)	1 (2.5%)	6(15.0%)	1.98*	3 (7.5%)	5(12.5%)	0.75
Below average self-concept (9-16)	0	0	0.00	0	0	0.00
Low self-concept (upto 8)	0	0	0.00	0	0	0.00

\* Differences significant at 5% level

category of self-concept on the educational dimension. None of them had below average self-concept. No significant difference was found in the proportions of the obese and non-obese teenagers for various levels of self-concept for the educational dimension.

**Moral Dimension:** It assesses an individual's estimation of his/her moral worth; right and wrong activities. It is clear from Table 1b that both obese and non-obese teenagers were mostly placed either in the 'above average' or 'high level' of self-concept on moral dimension. None among the obese and normal-weight teenagers, had neither 'below average' nor 'low' self-concept for this dimension (Table 1b).

**Intellectual Dimension:** It refers to an individual's awareness of his/her intelligence and capacity of problem solving and judgments. Most of the teenagers from both the obese as well as non-obese groups were in the 'above average level' of self-concept level for this dimension. However, significantly greater proportions of non-obese boys than their obese counterparts were seen in the 'average' level category of self-concept. Significantly more number of obese girls than the non-obese girls were found in the 'above average' level category of self-concept for its intellectual dimension.

The above results clearly indicate that obese and non-obese teenagers did not differ significantly in their distribution along various levels for all given dimensions of self-concept. This was found true for both the sexes. Therefore, the subsequent results shall be focusing on the overall (inclusive of all the six dimensions) self-concept among obese and non-obese teenagers of two sexes separately.

### Overall Self-concept (Inclusive of all the Six Dimensions)

Table 2 shows that most of the teenagers, both obese as well as normal weight, showed 'above average' level of self-concept. No significant difference was found between obese and non-obese teenagers of either sex for all levels of overall self-concept.

### Mean Scores and Analysis of Variance

Tables 3 and 4 show the mean scores of obese and normal weight boys and girls for various dimensions of self-concept. The scores when compared across for the obese and non-obese teenage boys and girls for each dimension of self-concept showed non-significant differences.

**Table 2: Distribution of obese and normal weight teenagers on the basis of overall self-concept levels**

S. No.	Category/ score	Obese Boys (n=40)	Normal Boys (n=40)	Z value	Obese Girl (n=40)	Normal Girl (n=40)	Z value
1.	High self-concept (193-240)	11(27.5%)	8(20.0%)	0.79	7(17.5%)	8(20.0%)	0.29
2.	Above average self-concept (145-192)	29(72.5%)	31(77.5%)	0.52	33(82.5%)	32(80.0%)	0.29
3.	Average self-concept (97-144)	0	1 (2.5%)	1.01	0	0	0.00
4.	Below average self-concept (49-96)	0	0	0.00	0	0	0.00
5.	Low self-concept (1-48)	0	0	0.00	0	0	0.00

Table 3 also presents results of analysis of variance for scores for various dimensions of self-concept of teenage obese and non-obese girls. Results reveal significant differences (at 5% level) for the mean scores of all the dimensions of self-concept of obese as well as the non-obese teenage girls. Both obese (mean score: 32.28) and non-obese (mean score: 31.93) teenage girls scored highest mean scores for the moral dimension. The lowest mean score was observed for the intellectual dimension in case of obese teenage girls while non-obese girls showed lowest and equal scores for the social and temperamental dimensions of self-concept.

Analysis of variance for scores obtained for various dimensions of self-concept by obese and non-obese teenage boys is given in Table 4. Significant (at 5% level) differences were observed between scores of various self-concept

dimensions for both obese and non-obese teenage boys. Obese teenage boys scored highest scores for the moral dimension (mean score: 32.10) whereas lowest score (mean score: 29.00) was observed for the intellectual dimension of the self-concept. Similarly, non-obese teenage boys also obtained the highest scores for the moral dimension and the lowest scores for the intellectual dimension of the self-concept. The overall self-concept scores (Table 5) when compared across the two sexes and their weight status categories showed no significant differences.

## DISCUSSION

Majority of the teenagers in the present study reported 'above average' level of self-concept irrespective of age, sex and BMI status. Similar

**Table 3: Mean scores and Analysis of variance of various dimensions of self-concept of obese and normal weight teenage girls**

Obese girls	Dimensions of self concept	Mean score	±SD	Normal girls	Dimensions of self concept	Mean score	±SD
	Physical	28.10	4.38		Physical	30.30	3.96
	Social	30.73	2.94		Social	29.30	3.61
	Temperamental	30.75	3.54		Temperamental	29.30	4.31
	Educational	31.45	4.76		Educational	31.13	4.62
	Moral	32.28	3.78		Moral	31.93	4.51
	Intellectual	27.98	3.30		Intellectual	29.33	3.92
MD1-2 =2.63*				CD	MD1-2 =1.00		CD
MD1-3 =2.65*				(5%)	MD1-3 =1.00		(5%)
MD1-4 =3.35*				=	MD1-4 =0.83		=
MD1-5 =4.18*				1.701	MD1-5 =1.63		1.851
MD1-6 =0.12				df =	MD1-6 =0.97		df =
MD 2-3 =0.02				5,234	MD2-3 =0.00		5,234
MD2-4 =0.72				F	MD2-4 =1.83		F
MD2-5 =1.55				ratio	MD2-5 =2.63*		ratio
MD2-6 =2.75*				=	MD2-6 =0.03		=
MD3-4 =0.70				8.61*	MD3-4 =1.83		2.47*
MD3-5 =1.53					MD3-5 =2.63*		
MD3-6 =2.77*					MD3-6 =0.03		
MD4-5 =0.83					MD4-5 =0.80		
MD4-6 =3.47*					MD4-6 =1.80		
MD5-6 =4.30*					MD5-6 =2.60*		

Note: \*

Significant at 5% level

**Table 4: Mean scores and Analysis of variance of various dimensions of self-concept of obese and normal weight teenage boys**

<i>Obese boys</i>	<i>Dimensions of self concept</i>	<i>Mean score</i>	<i>±SD</i>	<i>Normal boys</i>	<i>Dimensions of self concept</i>	<i>Mean score</i>	<i>±SD</i>
	Physical	29.33	4.72		1. Physical	30.88	2.95
	Social	29.88	4.03		2. Social	31.05	4.25
	Temperamental	30.90	3.74		3. Temperamental	29.60	3.42
	Educational	31.13	5.00		4. Educational	30.40	4.97
	Moral	32.10	4.27		5. Moral	31.30	4.18
	Intellectual	29.00	3.49		6. Intellectual	28.73	3.73
MD1-2 =0.54				CD MD1-2 =0.19			
MD1-3 =1.57				(5%) MD1-3 =1.26			CD (5%)
MD1-4 =1.80				= MD1-4 =0.46			=
MD1-5 =2.70*				1.882 MD1-5 =0.44			1.762
MD1-6 =0.33				df = MD1-6 =0.13			df =
MD2-3 =1.03				5,234 MD 2-3 =1.45			5,234
MD2-4 =1.26				F MD2-4 =0.65			F
MD2-5 =2.23*				ratio MD2-5 =0.25			ratio
MD2-6 =0.87				= MD2-6 =2.32*			=
MD3-4 =0.23				3.14* MD3-4 =0.80			2.86*
MD3-5 =1.20				MD3-5 =1.70			
MD3-6 =1.90*				MD3-6 =0.87			
MD4-5 =0.97				MD4-5 =0.90			
MD4-6 =2.13*				MD4-6 =1.67			
MD5-6 =3.10*				MD5-6 =2.57*			

Note: \* = Significant at 5% level

**Table 5: Analysis of variance of overall self-concept of obese and non obese teenagers**

<i>S. No.</i>	<i>Variables</i>	<i>Mean score</i>	<i>df</i>	<i>F ratio</i>
1.	Obese boys	182.33		
2.	Normal boys	181.95		
3.	Obese girls	181.27	3,156	0.50NS
4.	Normal girls	181.27		

Note: NS = Non Significant

results were reported by Cornette (2008). Majority of obese and non-obese teenagers of the present study perceived their body, health, physical appearance and strength as ‘above average’. These findings are supported by Marsh et al.(2004) who reported that physical self-concept and ideal body image were somewhat higher in obese and non-obese teenagers. Similarly, the study by Sabia (2007) supported the present findings that no significant difference could be found in the proportions of the obese and non-obese teenagers for various levels of self-concept with reference to educational dimension of self concept. The results of the present study for the temperamental dimension of self-concept lend support to the findings of an earlier study by Hau et al. (2002) that obesity has no effect on this dimension of self-concept.

Studies based predominantly on Western research have shown that obesity in childhood

and adolescence has adverse effects on self-concept development. According to a new study based on data from the national population health survey , adolescent girls tend to have a lower self-concept than boys (Park 2004). Obese children were found to be more prone to having low self-esteem as reported by Johnson (2002). On the other hand, the results of the present study conclude that no significant differences could be observed for all the dimensions of self-concept across age, sex and weight status of teenagers from Ludhiana, Punjab (India). The comparable preponderance of obese and non-obese teenage boys and girls in ‘High’ and ‘Above average’ levels for all dimensions of self-concept across all the three age groups is indicative of acceptability of teenage obesity by the significant people in their lives and people at large in the society. Maybe even now parents apparently believe that obese children are healthier and obesity reflects their love for their children. In other words, weight status of teenagers in the present study does not impact their self-concept negatively and thus obese and non-obese teenagers are at par with their self esteem and confidence. These findings are supported by Gordon (2001) who reported that obese adolescents had significantly lower level of physical activity but had above average self

concept. There are other research reports which were reviewed by Davison and Birch (2001) showing that girls with higher weight status reported lower body esteem and lower perceived cognitive ability than girls with lower weight status. It is also reporting higher paternal concern about child overweight was associated with lower perceived physical ability among girls, higher maternal concern about child overweight was associated with lower perceived physical and cognitive ability among girls. Since in the present study weight status was not found to influence the self-concept negatively, it could be assumed that there is no discrimination against on the basis of weight in the setting of the present study and hence the associated stigmatization is non-existent.

Every aspect of being is liable to change with time and more so when the world is shrinking to become an interactive global village. The attitudes and beliefs towards obesity may not continue to remain as tolerant as are now. Therefore, the era of 'discrimination against on the basis of weight' may enter the developing world as well. In that case obesity including overweight will have negative impact on the self-concept leading to low self-esteem and confidence so essential to success in life. In this context the results of the present study may seem to be optimistic as obesity has not touched self-

concept of our teenagers, however, health implications of the obesity cannot be ignored.

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