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RELATIONSHIP BETWEEN BODY MASS INDEX (BMI) AND SOCIAL ADJUSTMENT OF SECONDARY STUDENT

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Abstract

India is a land consists of different culture and regions where people deal differently in different situations for cooperating each other sympathetically. Those who live in urban area were handling many social problems. Social maturity makes a man social adjusted in various situations. Every human being wants to adjust oneself to various situations. Researchers considered the objective of the study was to find out the relationship between Body Mass Index (BMI) and social adjustment among overweight, normal weight and underweight students. Body Mass Index (BMI) and social adjustment were considered as the variable of the study. The researchers selected two hundred twenty six (226) students of class IX & X from the district of North 24 Parganas, West Bengal as sample for the study. Researcher developed a questionnaire to measure the social adjustment. The questionnaire finalized by expert consisted of 25 questions of statement on various psychological and sociological aspects. Body Mass Index was calculated from height and weight of the students by Stadiometer and Weighing machine respectively. On the basis of the statistical analysis and interpretation it was found that, BMI and social adjustment in most of the cases are not significantly correlated.

Key words:

Body Mass Index

Social Adjustment

Obesity.

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1. INTRODUCTION:

India is a land consists of different culture and regions where people deal differently in different situations for cooperating each other sympathetically. Those who live in urban area were handling many social problems. They greatly need social adjustment to rural people who had limited scope for many social contacts. Social maturity makes a man social adjusted in various situations. Every human being seeks adjustment to various situations. He or she constantly tries to make efforts to adjust himself or herself to the surroundings because adjustment is essential for leading happy life and gaining satisfaction.

Now a day's overweight and underweight are two major problems in West Bengal as well as in national scenario. Since 2005-2006 the number of overweight people has almost doubled. City dwellers fare worse than villages. The urban woman is growing fatter at a faster rate than the urban man. Childhood obesity is associated with increased risk of health problems and social discrimination. In west Bengal ten years ago 11.4 percent of women were found to be overweight. That has gone up to 19.9 percent now, from which 30.6 percent for urban areas and 15 percent rural areas, which means urban women are putting on weight at twice the rate of rural women. Men are a little better off, but not much. Now 14.2 percent male are overweight in West Bengal(National Family Health Survey 4, 2015-2016).

A large number of people in 15 Indian states are either overweight or underweight and are suffering from different diseases like anemia, according to the latest release of the National Family and Health Survey (NFHS 4, 2015-2016). These states make up about 44% of the country's population. Generally abnormal weight is calculated by working out the body mass index (BMI) which is a measure of how much a person weighs relative to his or her height. A BMI less than 18.5 kg per square meter makes one underweight, and over 25 means the person is overweight. Underweight and overweight are caused by bad nutrition which results in bad health parameters. There are some studies where researchers want to relate BMI and social adjustment or related issues. Banis et al. (1988) in their study on 'Psychological and social adjustment of obese children and their families' found that the obese children were less socially competent. They had more behaviour problems, and had poorer self-perceptions than the non-obese samples. In the study 'A Comparative Study on Adjustment between Obese and Non Obese Children'

,Sen, &Sikdar (2016) revealed that there exists a significant difference between obese and non obese children with respect to their emotional, social and educational adjustment. The mean values of the mentioned aspects of non obese children are higher than that of obese children. The correlation value indicates a significant relationship between BMI and adjustment. Green (2015) in his thesis 'Overweight and Obese Children's Social Interactions and Peer Responses' found that healthy children is more assertive than children with obese and overweight. It was also reported in the study that children with obese and overweight are using more social construction strategies than healthy weight children. Adolescents with higher Body Mass Index (BMI) may experience poor social adjustment when compared to adolescents of normal weight (Stanley &Bohner, 2011). Low self-esteem may be one of the many negative psychosocial consequences of obesity (Wadden&Stunkard, 1993). These negative consequences may begin in adolescence, when social emphasis on physical appearance becomes a more salient concern (Wadden et.al. 1991). Furthermore, consequences may be more severe for females than males, given the greater societal emphasis on physical appearance in females relative to males (Pliner et.al. 1990). Overweight/obese youth are also at high risk for lower social status, experiencing more peer rejection (Strauss & Pollack, 2003), peer victimization (Pearce, Boergers, &Prinstein, 2002), and social isolation compared with normal-weight adolescents (Falkner et al., 2001; Strauss & Pollack, 2003). Paxton in the study named 'The effects of childhood obesity on self-esteem' revealed that children with obese face many psychological and social consequences, including low self esteem which causes problems related to emotional problems like peer rejection, teasing. Malnutrition in early childhood has serious, long-term consequences because it impedes motor, sensory, cognitive, social and emotional development. Children with malnourishment are less likely to perform well in scholastic aspects in school and more likely to grow into malnourished adults with greater risk of disease and early death.

A person is overweight is generally described and measured by body-massindex (BMI). Overweight is considered when the BMI is 25 or more, pre-obesity as a BMI between 25 and 30 and obesity as a BMI of 30 or more. Pre obese and overweight are generally used interchangeably thus giving overweight a common definition of a BMI of between 25 -30. There are some other ways to measure the amount of adiposity or fat present in an individual's body.

The International Classification of adult underweight, overweight and obesity according to BMI

Classification	BMI(kg/m^2)	
	Principal cut-off points	Additional cut-off points
Underweight	**<18.50**	**<18.50**
Severe thinness	<16.00	<16.00
Moderate thinness	16.00 - 16.99	16.00 - 16.99
Mild thinness	17.00 - 18.49	17.00 - 18.49
Normal range	**18.50 - 24.99**	**18.50 - 22.99**
		23.00 - 24.99
Overweight	**≥25.00**	**≥25.00**
Pre-obese	25.00 - 29.99	25.00 - 27.49
		27.50 - 29.99
Obese	**≥30.00**	**≥30.00**
Obese class I	30.00 - 34.99	30.00 - 32.49
		32.50 - 34.99
Obese class II	35.00 - 39.99	35.00 - 37.49
		37.50 - 39.99
Obese class III	≥40.00	≥40.00

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

BMI helps us to provide a more accurate representation of body fat content than simply measuring a person's weight. The BMI is an accurate reflection of percentage of fat in the majority of the adult persons.

2. OBJECTIVE OF THE STUDY:

Researchers considered the followings as the objectives of the study-

i) to find out the relationship between normal weight with the social adjustment of secondary school learners.

ii) to find out the relationship between overweight with the social adjustment of secondary school learners.

iii) to find out the relationship between underweight with the social adjustment of secondary school learners.

iv) tomeasure the BMI and social adjustment of secondary school learners.

3. HYPOTHESIS OF THE STUDY:

The researchers formulated the following hypothesis for the study-

$H_{0.1}$: There is no significant relationship between BMI & Social Adjustment score of secondary school learners.

$H_{0.2}$: There is no significant relationship between BMI & Social Adjustment Score of secondary boys.

$H_{0.3}$: There is no significant relationship between BMI & Social Adjustment Score of secondary girls.

$H_{0.4}$: There is no significant relationship between BMI & Social Adjustment Score of overweight secondary boys.

$H_{0.5}$: There is no significant relationship between BMI & Social Adjustment Score of overweight secondary girls.

$H_{0.6}$: There is no significant relationship between BMI & Social Adjustment Score of normal weight secondary boys.

$H_{0.7}$: There is no significant relationship between BMI & Social Adjustment Score of normal weight secondary girls.

$H_{0.8}$: There is no significant relationship between BMI & Social Adjustment Score of underweight secondary boys.

$H_{0.9}$: There is no significant relationship between BMI & Social Adjustment Score of underweight secondary girls.

4. METHODS AND MATERIALS:

This study was quantitative and survey type in nature.

4.1. Variables:

Body Mass Index (BMI), and Social adjustment were considered as the variable of the study.

4.2. Sample:

The researchers selected two hundred twenty six (226) students of class IX & X from the district of North 24 Parganas, West Bengal as sample for the study. Researcher considered judgmental sampling technique in the study for selecting the sample.

4.3. Tools used:

Researchers developed a questionnaire to measure the social adjustment. The questionnaire consisted of 25 questions of statement on various psychological and sociological aspects.

Body Mass Index was calculated from height and weight of the students by Stadiometer and Weighing machine respectively.

5. ANALYSIS AND INTERPRETATION:

Table 1- Mean and SD of the subject according to their height, weight, BMI and social adjustment

		Over weight		Normal weight		Under weight	
		Mean	SD	Mean	SD	Mean	SD
Height	boys	150.30	6.42	156.60	9.69	150.20	9.44
	girls	152.52	6.52	152.36	5.82	148.41	4.91
Weight	boys	61.58	5.90	49.41	7.29	37.58	7.14
	girls	61.58	7.92	47.63	5.01	36.65	4.03
BMI	boys	24.11	0.48	20.08	1.24	15.91	1.65
	girls	26.60	1.84	20.53	1.46	16.30	1.30
Social adjustment	boys	48.47	10.02	58.34	7.08	55.98	8.00
	girls	58.11	6.88	60.61	7.66	59.05	7.32

Table 2: correlation value of BMI and Social Adjustment (SA) of secondary learners

	Correlation (r) value
BMI & Social Adjustment	-0.087

The calculated value is less than the table value (0.138). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of secondary school learners.

Table 3: correlation value of BMI and Social Adjustment (SA) of secondary boys

	Correlation (r) value
BMI & Social Adjustment	-0.169

The calculated value is less than the table value (0.195). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of secondary boys.

Table 4: correlation value of BMI and Social Adjustment (SA) of secondary girls

	Correlation (r) value
BMI & Social Adjustment	-0.023

The calculated value is less than the table value (0.174). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of secondary girls.

Table 5: correlation value of BMI and Social Adjustment (SA) of Overweight secondary boys

	Correlation (r) value
BMI & Social Adjustment	-0.220

The calculated value is less than the table value (0.497). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of overweight secondary boys.

Table 6: correlation value of BMI and Social Adjustment (SA) of Overweight secondary girls

	Correlation (r) value
BMI & Social Adjustment	-0.212

The calculated value is less than the table value (0.482). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of overweight secondary girls.

Table 7: correlation value of BMI and Social Adjustment (SA) of Normal weight secondary boys

	Correlation (r) value
BMI & Social Adjustment	0.292

The calculated value is less than the table value (0.325). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of normal weight secondary boys.

Table 8: correlation value of BMI and Social Adjustment (SA) of Normal weightsecondary girls

	Correlation (r) value
BMI & Social Adjustment	-0.155

The calculated value is less than the table value (0.325). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of normal weight secondary girls.

Table 9: correlation value of BMI and Social Adjustment (SA) of Underweight secondary boys

	Correlation (r) value
BMI & Social Adjustment	-0.020

The calculated value is less than the table value (0.273). Therefore the value is not significant and the null hypothesis is accepted.Therefore the researcher concluded that, there is no significant relationship between body mass index and social adjustment score of underweight secondary boys.

Table 10: correlation value of BMI and Social Adjustment (SA) of Underweight secondary girls

	Correlation (r) value
BMI & Social Adjustment	0.294*

*Significant at 0.05 level of confidence

The calculated value is greater than the table value (0.232). Therefore the value is significant and the null hypothesis is rejected.Therefore the researcher concluded that, there is significant positive relationship between body mass index and social adjustment score of underweight secondary girls.

6. CONCLUSION:

In the present study researchers founded that except in the case of underweight secondary girls students there is no significant relationship between BMI and Social adjustment. It is also noticed that almost in all cases, though not significant, the values of correlation is negative that means increase of BMI decreases social adjustment. Considering all the findings of the present study it could be concluded that there is no significant relationship between BMI and social adjustment. In fact in the study there are no students with obese but there are students of overweight. In related literature it was found that obesity and social adjustment are negatively related. As there are no obese students in the present study the relationship between BMI and social adjustment is significant.

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