Relationship between Body Mass Index and Self Esteem among Early Adolescents in a Selected School, Coimbatore

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Abstract

Introduction: Body Mass Index plays a vital role for early adolescents for their physical look and psychological well-being. In India, body weight is directly associated with their social life. In urban areas, adolescents are involved in various dietary activities to reduce body weight and they are more conscious for their body image than the rural counterparts. During the last decades, the increase in the rate of children and adolescents that are overweight or obese is alarming and it is related with the lower social competency and low self- esteem. *Objective:* is to examine the relationship between BMI and self-esteem among early adolescent. *Method:* Quantitative approach and descriptive correlational design was adopted. 60 participants are included in the study by using simple random sampling technique. An explanation about the purpose and the nature of the study was explained for each participant. The subjects were asked to complete the questionnaire and measured their weight and height. The tools consist of three sections to collect data: the sociodemographic, Body Mass Index and Rosenberg's Self-Esteem Scale (RSE). The validity and reliability of the measurements were ensured. Data was collected from the private school. *Results:* The mean and standard deviation of Body Mass Index are (Mean 18.56, SD 5.61) and the level of self-esteem (Mean 36.2, SD 9.04). Pearson's correlation showed that there was a significant negative correlation between Body Mass Index (BMI) and self esteem score ($r = -0.4$). *Conclusion:* The self esteem decrease while with the increase in body mass index among early adolescent

Keywords: Body mass index; Self-esteem; Obesity.

Introduction

Body mass index is a value derived from the mass and height of the person.[1] It is a physical measurement used to assess the individual total amount of fat.[2] Body mass index (BMI) is a person's weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. BMI can be used to screen for weight categories that may lead to health problems but it is not diagnostic of the body fatness or health of an individual.[3] The prevalence of obesity and overweight is growing in both developed and developing countries, but at different Lobstein et al., (2004).[4] World Health Organization (WHO) has to designate obesity as one of the most important public health menace.[5] (Lee, 2005). Self-esteem, as the evaluative component of the self-concept, is vitally important for good mental health, and research indicates that it predicts a variety of other important life outcomes.[6] In urban areas, adolescents are involved in various dietary activities to reduce body weight and they are more conscious for their body image than the rural counterparts. In rural areas, adolescents are not aware about their diet and lifestyle pattern. Other than ignorance, myths related to dietary play a role in development of malnutrition. Malnourished, whether underweight

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or overweight is very stressful to adolescents. Due to over consciousness, students go into depression and may lead into low self-esteem.[7]

During the last decades, the increase in the rate of children and adolescents that are overweight or obese is alarming and it is related with the lower social competency and low self-esteem.[8] Self-esteem is an individual subjective evaluation of their own worth.[9] Low self-esteem is one of the main psychosocial factors related to childhood overweight. Yet not all overweight children are affected. Little is known about what characterises the group of overweight children with the lowest self-esteem. Our aim was to identify factors related to low domain-specific self-esteem in children with overweight/obesity. Adolescence is considered as crucial and significant period of an individual's life.[10] Davies & Katzman (1997) highlight that many obese people show signs of anxiety or depression more frequently than the general population Also, these people think about themselves as being less valuable than others showing negative feelings towards their appearance. Early adolescents with overweight have low self-esteem which affects children and their developing social skills. And it leads to various problems such as depression and anti-social behavior.[11] Hence, the researcher felt there is a need to take this study to find out the relationship between BMI and Self Esteem and to educate those regarding healthy eating habits.

Objectives

- To assess the body mass index among early adolescents.
- To assess the level of self-esteem among early adolescents.
- To correlate the body mass index and self-esteem among early adolescents.
- To associate the body Mass Index with the selected demographic variables.
- To associate the level of self-esteem with the selected demographic variables.

Materials and Methods

Research approach was quantitative and research design was descriptive research design, 60 samples that fulfilled the inclusion criteria were selected by simple random sampling technique. Children who had less attention and sick were excluded in the study. The tool consists of three sections.

Section A: Demographic variables which consists of age, gender, Religion of the family, education of the child, educational status of the parents, occupation of the parents, number of siblings, birth order of the child, primary care giver of the child, parenting style, family problems, source of information and dietary pattern.

Section B: It consists of body mass index or Quetelet Index[12] it is statistical measures, which compares the height and weight. It is calculated by BMI = Weight in kg/Height in m^2.

Table 1: Score and interpretation of BMI

Classification of BMI	Score
Underweight	<18.5 kg/m^2
Ideal	18.5–24.9 kg/m^2
Overweight	25–29.9 kg/m^2
Obese	More than 30 kg/m^2

Section C: Rosenberg Self-esteem Scale (RSES)[13] which is designed to measure self-esteem in early adolescent. It is a four point Likert scale. It ranges from strongly agree to disagree. It consists of 20 items. Maximum score is 60 and minimum score is 0. 10 items are positive and 10 items are negative. For positive statements the score will be given as strongly agree (3) agree (2) disagree (1) strongly disagree (0) and for negative statements the score will be strongly disagree (3) disagree (2) agree (1) strongly agree (0). The interpretation will be given as in Table 2.

Table 2: Interpretations of score for self-esteem

Level of self-esteem	Score
Low self-esteem	Below 30
Moderate self-esteem	30–40
High self-esteem	Above 40

The written permission was obtained from the principal, to conduct the study in a private school. The researcher introduced personally and explained the purpose and the importance of the study, and got oral consent from the school children. Data was collected from each child by interview method. Data were analysed by using descriptive and inferential statistics.

Results

Regarding the demographical variables the most of the children were females between the age group

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of 12–13 years. The parents most of them were completed schooling, and working in a private sector and earning more than ₹10,000 and they belong to Hindu religion. Most of the children were found to be a second child from urban area. It is found that most of the children cared by their own mother and handled their children softly. The student received the information mostly from

friends and belongs to non-vegetarian. Eventually, there were less family problems.

Regarding the distribution of level of body mass index among early adolescents. Among 60 early adolescents 42 (70%) of them were underweight and 5 (8%) of them were normal 10 (17%) of them were overweight and 3 (5%) of them were obese (Fig. 1).
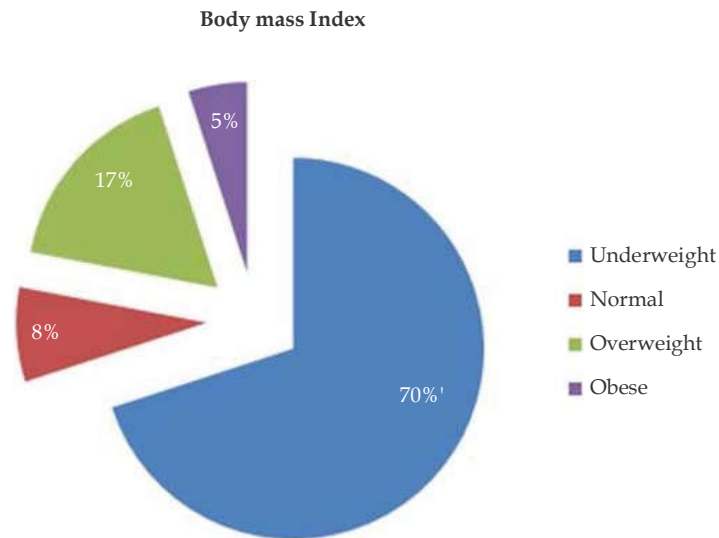
Body mass Index

Fig. 1: Distribution of body mass index among adolescents.

From the Fig. 2. It was inferred that the distribution of level of self- esteem among 60 early adolescent 18 (30%) of them had low self-esteem,

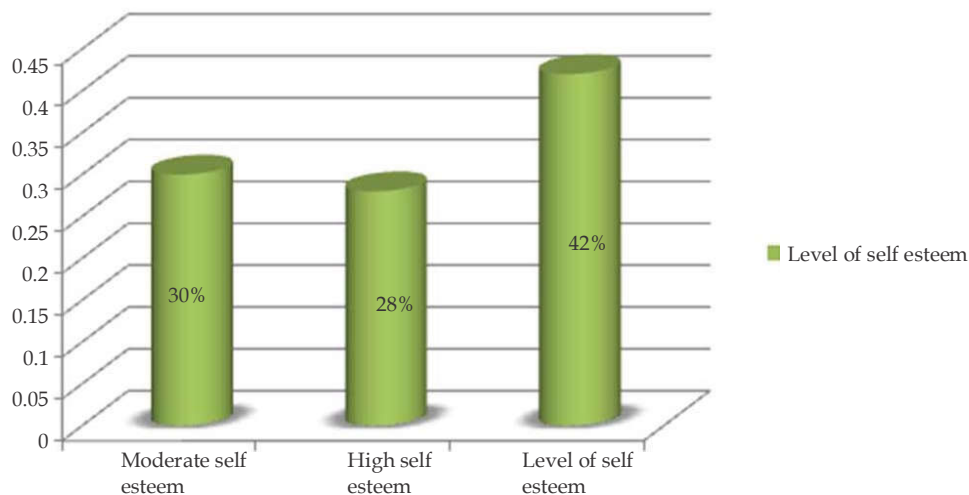17 (28%) of them had moderate self-esteem and 25 (42%) of them had higher self-esteem**.**

Fig. 2: Distribution of level of self esteem among early adolescent.

Regarding the correlation co-efficient, it shows that there is a significant negative correlation ($r = -0.4$) between BMI and self-esteem among early

adolescent. Hence, it concludes that, when body mass index increases the self-esteem decreases among early adolescents.

Table 3: Distribution of correlation co-efficient between body mass index and self-esteem among early adolescent

N = 60

S. No	Variables	Mean	Standard deviation	*r*
1.	Body mass index	18.56	5.61	–0.4
2.	Self-esteem	36.2	9.04	

Regarding the association of body mass index with selected demographical variables the calculated value of chi-square is greater than the tabulated value of chi-square at 5% level of significance in residential area and birth order of the child. So it concludes that there is a significant association between residential area and birth order of the child and there is no significant association between the age of child, gender of child, education status of child, educational status of father, education status of mother, occupation status of father, family income per month, residential area, number of siblings in family, birth order of the child, primary care giver of the child, parenting style, family problem, source of information and dietary pattern. Regarding the association of level of self-esteem with selected demographical variables the calculated value of chi-square is greater than the tabulated value of chi-square at 5% level of significance in primary care givers of the child, hence, it concludes that there is a significant association between primary care givers of the child, and there is no association between the age of child, gender of child, education status of child, educational status of father, education status of mother, occupation status of father, family income, residential area, number of siblings in family, birth order of child, primary care giver of the child, parenting style, family problem, source of information and dietary pattern among early adolescents among early adolescents.

Discussion

Adolescents who are overweight were more likely to be in the low self-esteem group. The present study concluded that there is a negative correlation between BMI and self-esteem which shows that higher the body mass index indicates lower the self-esteem. Another study by Swallen KC, he founded that there was a statistically significant relationship between BMI and physical health while adolescents who were overweight had significantly worse self-reported health and lower self-esteem and social functioning.[14] The present study findings concluded that there is a significant association between the BMI and self-esteem with selected demographic variables this may be congregant with the study

done by Elfhag et. al. (2010) explained that family environment can contribute to the formation of self-esteem among early adolescents.[15] The findings were also supported by Aldaqal et al. emphasized, that significant poor self-esteem and impairment in all domains of quality of life in obese adolescent are compared with normal weight adolescent ($p < .001$).[16]

Conclusion

The present study findings showed that there is negative correlation between body mass index and self-esteem. This denotes that higher the BMI lower the self-esteem among adolescence. Obesity impacts the self perception of children entering adolescence especially in girls but in selected areas of competence obese children are at particular risk of low perceived competence in sports, physical appearance and pear engagement. It is necessary to plan actions aimed us reinforcing and increasing self-esteem focusing on the early adolescents with overweight and obesity problems. Parents should encourage and participate in improving diet and increasing physical activity which helps in improving self-esteem of early adolescence.

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