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A study of adolescent girls' self-esteem in relationship with obesity

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Abstract

In recent years, obesity and overweight has become a major public-health concern worldwide, particularly among children and adolescents. The prevalence of obesity in children and adolescents has been rapidly increasing in the last three decades, reaching epidemic proportions (Phillippas & Clifford, 2005). Obese children and adolescents are at risk for significant health problems, but also face many psychological and social consequences, including low self-esteem and decreased psychological well-being. Adolescent constitute over 21.4% of the population in India. This period of life needs special attention because of the turmoil that an adolescent faces due to different stages of development, different circumstances, different needs and diverse problems. In view of the above the present study was conducted to examine whether obese and overweight adolescent girls differ from normal weight adolescent girls in terms of self-esteem. The sample adolescent girls was divided in three groups (i.e., obese, overweight and normal weight) and they were given measures of self-esteem. The body mass index of adolescent girls was determined on the basis of their height and weight. Findings of the present study revealed lower self-esteem among obese and overweight adolescent girls in comparison to their counterpart normal weight adolescent girls. Co relational analysis of data revealed negative relationship of body mass index (BMI) to self-esteem. Findings have suggested that there is need to improve self-esteem of adolescent girls which often decreases due to the perception of body weight by the adolescents themselves as well as due to the social and psychological factors affecting with obesity and overweight status. Information regarding the psychological impact of obesity on adolescents could lead to a better understanding of and sensitivity towards obese teenagers. This information could be used to have a positive impact on the lives of obese adolescents.

Keywords: Obesity, Adolescents, self-esteem, B.M.I.

Introduction

Overweight and obesity in children and adolescents presents many threats in terms of negative health consequences as well as psychosocial difficulties. Formative childhood years are crucial for the development of health behaviors and health outcomes that continue through adulthood. The majority of children who develop obesity during childhood become obese adults and the resultant health outcomes of experiencing long-term obesity are documented (Dietz, 1997; Nicklas, Baranowski, Cullen, & Berenson, 2001) [5]. Although the presence of obesity in children and adolescents may have detrimental consequences for childhood self-esteem, the prevalence and magnitude of this problem are controversial. Obesity has a major impact on mental health, psychological well-being and quality of life as well as on general medical illnesses. Obese people confront social discrimination and stigmatization in almost every situation of their lives.

Adolescence is a decisive period in human life because of the multiple changes that occur between childhood and adulthood. Puberty is the primary neuro-hormonal determinant of both physiologic and psychologic changes, although other social and behavioural factors must also be considered in this process (Rodriguez *et al.*, 2004). In adolescence, both overweight and depressive symptoms become more common, increasing the likelihood of simultaneous occurrence. In contrast to the common idea that overweight might lead to unhappiness and consequently to depressive symptoms, recent reports suggest that depressive symptoms could also proceed over weight (Faith, Matz, & Jorge, 2002) [7] and thereby could be a risk factor for the development of overweight.

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Obesity is an emerging major public health problem throughout the world (Wang & Popkin, 2000) ^[18] and its prevalence has largely increased over the last decade in both developed and developing countries (Doll *et al.*, 2002) ^[6]. The increasing prevalence of overweight, obesity and its consequences prompted the World Health Organization to designate obesity as a global epidemic (WHO, 1998). Obesity has been identified by the World Health Organization as the greatest health threat of the 21st century. Obesity can be seen as the first wave of a defined cluster of non-communicable diseases called “New World Syndrome” creating an enormous socioeconomic and public health burden in poorer countries (WHO, 2006). The World Health Organization has described obesity as one of today’s most neglected public health problems.

While the global epidemic is well described in the adult population, not much data is available regarding the prevalence of overweight/obesity in children or adolescents amongst developing countries. Various studies indicate that the prevalence of overweight and obesity amongst children and adolescents is increasing in developing countries. In India the problem of obesity has been scantily explored even in the affluent population groups (Asthana, Gupta, & Mishra, 1998). Despite the growing numbers of adolescent increasing obesity over the years, only few studies are available in India to determine the prevalence of obesity. In India, under-nutrition attracted the focus of health workers, as childhood obesity was rarely seen. But over the past few years, childhood and adolescent obesity is increasingly being observed with the changing lifestyle of families with increased purchasing power, increasing hours of inactivity due to television, video games and indoor games and other social activities (Singh & Sharma, 2005). Self-esteem is the evaluative aspect of the self-concept that corresponds to an overall view of the self as worthy or unworthy (Baumeister, 1998) ^[2]. It is generally believed that there are many benefits to having a positive view of the self. Those who have high self-esteem are presumed to be psychologically happy and healthy (Branden, 1994), whereas those with low self-esteem are believed to be psychologically distressed and perhaps even depressed (Tennen & Affleck, 1993) ^[17]. (Baumeister, 1998) ^[2], most people with high self-esteem appear to lead happy and productive lives. By contrast, people with low self-esteem see the world through a more negative filter, and their general dislike for themselves colors their perceptions of everything around them. As pointed out by Bruche, we live in a world driven by stereotypical views based on what is beautiful is good. The obsession with appearance is certainly not new to this day and age. However, the advancements in technology, particularly with the media, have increased the degree to which individuals concern themselves with appearance. Children who are obese also endure negative attention in the forms of teasing, rejection, and harsh treatment that also contribute to the reduction of their self-esteem. A recent University of Minnesota study reveals that children who were teased about being overweight were more likely to have poor body image, low self-esteem, and symptoms of depression). Children who are obese not only experience lowered self-esteem as a result of peer taunting, they also show significantly elevated levels of loneliness, sadness, and nervousness (Strauss, 2000) ^[16]. Because approval from peers is particularly important within the adolescent years, such negative experiences can be detrimental to the development of self-esteem. Fitzgibbon (2004) states, there is no doubt that the obese child is exposed to teasing and stigmatization. In

agreement with Daniels (2005) ^[4], Fitzgibbon (2004) found that overall sense of the self may or may not be influenced. The critical question to ask is: should obesity be placed under the behavioural or psychiatric disorders. Hill (2005) ^[8] concludes that obesity and stigmatization of those with excess weight, as well as societal rejection of obesity, have received acknowledgement and have also been researched for almost forty years. A number of studies in India have shown increased prevalence of obesity. Results of a study from Punjab revealed that children in the age group of 11-17 years residing in urban areas were more overweight (11.6%) compared to children from rural areas (4.7%). Another study (Khandilkar & Khandilkar, 2004), done on 1228 boys at Pune in the age group of 10-15 years showed that the prevalence of obesity to be 5.7% whereas the prevalence of overweight was 19.9%. A cross-sectional study carried out on 2008 school children of 9-15 years in Punjab, revealed the overall prevalence of obesity and overweight was 11.1% and 14.2%. A study (Kapil, Singh, Pathak, & Dwivedi, 2001) ^[9] in Delhi on affluent school children showed the prevalence of obesity to be 7.4%. Another study conducted by the Nutrition Foundation of India found among 5000 children aged 4-18 years in Delhi private school 29% were overweight. A similar study done in South India showed (Ramachandran *et al.*, 2002) the prevalence of obesity to be 3.1% and overweight to be 16.8%.

In order to address these research gaps, the present study was conducted to examine whether obese and overweight adolescents differ from normal weight adolescents in terms of self-esteem. It was evaluated whether these differences persist when demographic and socioeconomic characteristics (e.g., socioeconomic status and rural/urban residential background) are controlled. The study also examines whether self-concept mediates the relationship of obesity and self-esteem.

Methodology

Sample of the present study consisted of 150 adolescent girls selected from different schools located in rural and urban areas of Jhansi (UP). Obesity of adolescent girls was determined on the basis of their Body Mass Index (BMI). BMI was calculated by weight/height (kg/m²). Adolescents whose BMI was above the 95th percentile (obese) and those with a BMI between 85th and 95th percentiles (overweight) were compared with normal adolescent girls. Thus, adolescent girls were categorized as normal, overweight, and obese according to their BMI. The classification of adolescent girls as obese, overweight, and normal weight was done according to the criteria given by the ICMR (1990). Self-esteem of the participants was assessed using the Rosenberg Self-Esteem Inventory (RSEI; Roenbergs, 1965). Another measure of self-esteem used in the present study was Piers-Harris Self-concept Scale. The scale consists of 60 yes-or-no answers. A total score and scores of six sub-groups including behavioural adjustment, intellectual and social status, physical appearance and attributes, freedom from anxiety, popularity, and happiness and satisfaction can be calculated. A self-devised General information questionnaire was used to collect information about participants’ personal and demographic characteristics such as age, residential background, type of family, parents’ education and occupation, caste, religion, socioeconomic status, monthly family income etc. analysis was done using statistical techniques such as descriptive statistics, measures of variability and inferential statistics. Relationships between different variables were analyzed using multivariate statistical techniques such as correlation and regression.

Results and Discussion

Table 1 presents mean BMI scores, standard deviations and range of age and BMI scores of three groups of adolescents. It can be observed that mean BMI scores of obese adolescents was 29.96 (*SD* = 2.84, Range = 25.22 to 40.80) which was

>95th percentile. Overweight adolescents were between 85th to 95th percentiles whose mean BMI score was 24.91 (*SD* = 2.51, Range = 20.80 to 37.50). Normal weight adolescents were between 5th percentiles to 85th percentiles whose mean BMI score was 19.30 (*SD* = 2.21, Range = 12.10 to 26.20).

Table 1: Descriptive data for BMI and age differences of adolescents

| | Mean | SD | Range |
|--------------------------|-------|------|---------------|
| Obese (50) | | | |
| BMI (kg/m ²) | 29.96 | 2.84 | 25.22 – 40.80 |
| Age (years) | 13.20 | 1.54 | 11.00 – 18.00 |
| Overweight (50) | | | |
| BMI (kg/m ²) | 24.91 | 2.51 | 20.80 – 37.50 |
| Age (years) | 13.70 | 1.61 | 11.30 – 17.20 |
| Normal Weight (50) | | | |
| BMI (kg/m ²) | 19.30 | 2.21 | 12.10 – 26.20 |
| Age (years) | 14.50 | 1.68 | 11.20 – 17.85 |

Self-esteem of adolescent girls was measured using Piers-Harris Scale of Self-Concept and Rosenberg Self-esteem Inventory. Mean scores presented in Table 2 clearly indicate that overall self-esteem of normal weight adolescents was better (*M* = 41.10, *SD* = 9.10) in comparison to the mean

overall self-esteem scores of overweight (*M* = 35.30, *SD* = 9.20) and obese adolescents (*M* = 30.90, *SD* = 10.40). The difference between three groups of adolescents on overall self-esteem score was found significant (*p*<.003).

Table 2. Results of Analysis of Variance for mean scores of three groups of adolescents on Self-esteem measures.

| Self-Esteem | Obese | Overweight | Normal Weight | *Anova <i>p</i> value |
|------------------------------------|---------------|--------------|---------------|-----------------------|
| Total score | 30.90 (10.40) | 35.30 (9.20) | 41.10 (9.10) | .003 |
| Behavioural adjustment | 8.70 (3.60) | 11.20 (1.50) | 11.50 (1.90) | .000 |
| Intellectual and school status | 5.60 (3.50) | 6.30 (1.40) | 8.70 (3.50) | .005 |
| Physical appearance and attributes | 3.10 (2.40) | 4.50 (1.90) | 4.80 (2.60) | .068 |
| Freedom from Anxiety | 6.70 (3.40) | 6.65 (4.60) | 9.50 (3.30) | .001 |
| Popularity | 7.60 (1.80) | 7.80 (2.90) | 9.00 (2.30) | .099 |
| Happiness and satisfaction | 5.50 (2.50) | 6.70 (3.10) | 7.40 (2.20) | .029 |
| Rosenberg Self-Esteem Score | 21.49 (3.92) | 26.66 (4.43) | 28.35 (3.65) | .001 |

*Exact *p* values are reported.

Normal weight adolescents were found better in terms of freedom from anxiety (*M* = 9.50, *SD* = 3.30) in comparison to their counterpart overweight (*M* = 6.65, *SD* = 4.60) and obese (*M* = 6.70, *SD* = 3.40) adolescents and the difference was found statistically significant (*p*<.001). Difference between

popularity of three groups of adolescents was not found significant, however, normal weight adolescents have shown higher level of popularity (*M* = 9.00, *SD* = 2.30) in comparison to overweight (*M* = 7.80, *SD* = 2.90) and obese (*M* = 5.50, *SD* = 2.50) adolescents. (Fig.3)

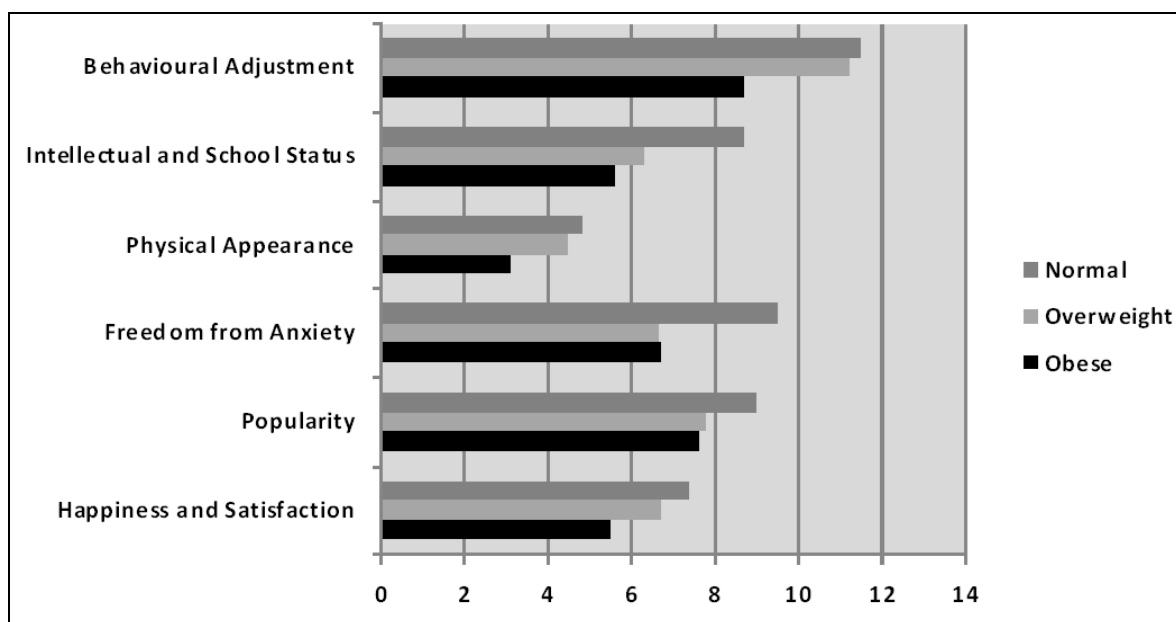


Fig 3: Comparative Self-esteem scores of three groups of adolescent girls

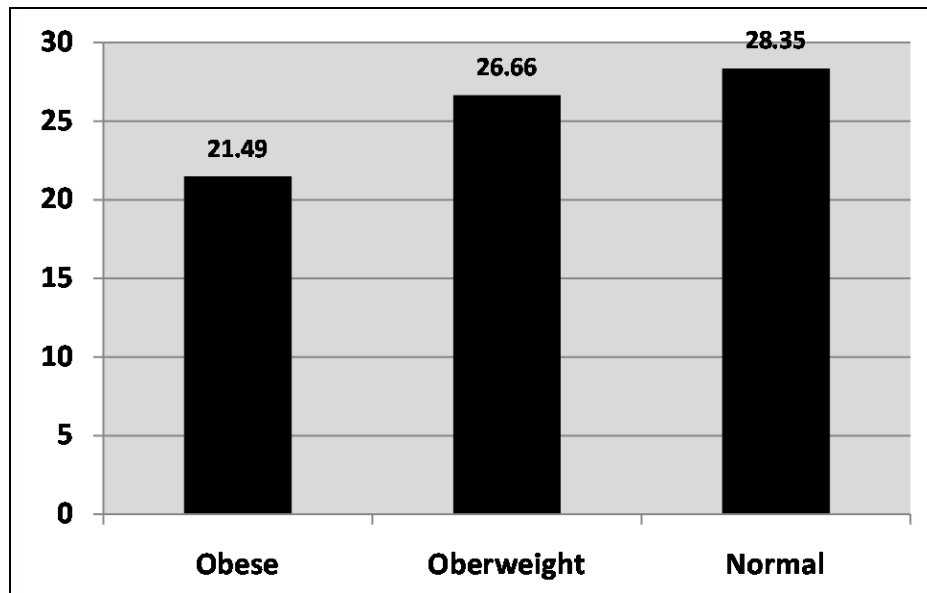


Fig 4: Rosenberg Self-Esteem Scores of Three Groups of Adolescents

Finally, happiness and satisfaction was found significantly different among three groups of adolescents ($p < .029$) where normal weight adolescents were found more happy and satisfied ($M = 7.40$, $SD = 2.20$) in comparison to their counterpart overweight ($M = 6.70$, $SD = 3.10$) and obese ($M = 5.50$, $SD = 2.50$) adolescents. Finally, on the measure of Rosenberg Self-esteem, mean scores of three groups of adolescent girls differed significantly ($p < .001$). Self-esteem of normal weight adolescents was found better ($M = 28.35$, $SD = 3.65$) in comparison to the mean self-esteem scores of overweight ($M = 26.66$, $SD = 4.43$) and obese ($M = 21.49$, $SD = 3.92$) adolescents (Figure 4).

The aim of the present study was to examine the effect of obesity and overweight on self-esteem of adolescents. The study was conducted in view of the fact that being overweight and obese has a startling level of despair in children and adolescents as a whole, with many rating their self-esteem as low. The psychosocial and emotional problems are of considerable magnitude and they must exert significant influence on their self-esteem. Against this backdrop, the present study was conducted to examine whether obese and overweight adolescents differ from their normal weight counterparts in terms of self-esteem

Conclusion

On the basis of the present findings it can be concluded that obesity and overweight are a potent indicator of poorer self-esteem and psychological well-being among adolescent girls. This is because obese and overweight adolescent girls appear to struggle with levels of distress regarding self-esteem which redacted their psychological well-being and negatively affects other areas of functioning. Thus, present study has shown that obesity and overweight among adolescent girls is strongly related to their self-esteem. Considering that many of the obese and overweight adolescents do not recognize their obese status, it is important that maintaining satisfactory body image in obese adolescent girls can help decrease the risk of psychological distress.

This study has certain limitations. One limitation of the study includes small sample size of adolescent girls and participants were selected from a limited regional area which may not sufficiently reflect the general characteristics of all Indian children. Thus, these results should be confirmed with a large

sample of adolescent girls with a range of socioeconomic status and geographical regions. Finally, present study did not examine potential factors affecting self-esteem in adolescent girls with obesity and overweight.

Implications of the present study

Findings of the present study have clearly demonstrated that obesity affects self of adolescent girls. These findings have both theoretical and practical implications. These findings will certainly help and enable parents, educators, psychologists, obese adolescents and societies to identify and address relevant issues. It would also assist in cultivating a greater awareness amongst society and individuals in general. Information regarding the psychological impact of obesity on adolescent girls would lead to a better understanding of and sensitivity towards obese teenagers. Present results also have implications for the treatment of obese children suffering from psychological problems, in that the focus of obesity management should include body perception and dissatisfaction.

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