

Child Obesity and Self Esteem: A Co-relational Study

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Abstract. The relationship between obesity and self esteem is an area of study which is becoming a globally focused issue due to various evaluations of its' multifaceted effects. Studies in India have shown that obesity prevails in about 10%-30% of adolescents [1], [2]. It is largely being recognized as an epidemic across the globe. India has been traditionally known for malnutrition, and is now in the limelight for its ever-increasing obesity trends, giving rise to a bipolar viewpoint [1]. This paper aimed at examining this relationship due to its increasing applicability in today's generation where the youngest of kids obsess over their weight and appearance. This was done using data collected from a total sample of 229 children between the age group of 10-16 years residing in Ahmedabad, through self-perception via 2 scales measuring self-esteem. The analysis was achieved by comparing 2 groups of children; with BMI below 25 and BMI above 25. The findings of this study support the objective that obesity is inversely related to self esteem, and also that females are more susceptible to be affected by body image than males.

Keywords: Self Esteem, Childhood Obesity, Body Mass Index (BMI), Health Interventions

1. Introduction

Contrary to popular belief, child obesity is not only a cosmetic problem, but has various mental health and clinical effects on children in the long run. As an issue worldwide for all groups of age, this phenomenon is becoming a focus of various empirical endeavors in psychosocial areas in the country [1]. Globally, in 2011, more than 40 million children under the age of 5 were found to be overweight [3]. Also, females are more susceptible to be obese than men, families with higher financial stability are likely to fall prey to the condition of overweight and obesity [4]. The effects of obesity are on the holistic well being of a person including the psychological well being; roles may be reversed when at times the mental health might be the cause of obesity [5]. In cases of psychiatric conditions, it is difficult to point out if the obesity is a consequence of the diagnosis or a cause of the condition itself [6].

Overweight and obesity affects the physical and psychological well-being of children [7]. One in every 6 adults has been found to be obese [4]. Raised BMI for longer periods of time may result in adverse physical effects, like increasing susceptibility of cardiac risks, type II diabetes, cancer, respiratory disorders, and musculoskeletal disorders [3]. Relationship between mental health and obesity is bi-directional in terms of depression, low self esteem, stress, dependence, eating disorders, hormonal and functional impairment, weight related teasing to name a few [8],[9]. Meanwhile, the game of perception prevails, it has been inference that 'perceived' obesity results in a larger number of mental health disorders than 'actual' obesity; the gap of measurement between the two being that the former is not in reality with a BMI score greater than 25, but his self image makes him believe otherwise [8][10]. Persistence of child obesity may largely have detrimental consequent risks of psychological morbidity and mortality even at later stages of development [1]. Obese children may be at a higher risk of social adjustment problems which might lead to, weight related bullying, low attendance in school, higher academic pressure on own selves or lower their expectations [11]. Also, the social dimensions could include parental attitudes and behaviors, peer pressure regarding binge eating/weight gain, and parental comments relating to appearance [7]. Generally, mental health disorders and obesity share common grounds when it comes to symptoms like, poor control regarding food intake, sleep disturbances, extreme mood swings, but they are categorically considered and treated separately as health problems [8]. Obesity is medically and emotionally challenging; ranging from medical risks of heart diseases to teasing, bullying, exclusion from activities, and depression.

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Self confidence is an integral aspect of the link between self esteem and obesity, in adults and children [12]. A holistic approach is needed, so as to strike a balance between the total mental and physical health of a child, as the implications of this concern could be severe if not intervened with [13], [14]. Parents of obese or overweight children must show concern and support rather than constant nagging; this would boost the morale of the child and negate the harmful effects of the disorder to an extent [15]. When it comes to developing health habits, family practices impact the most in childhood and adolescence, but schools are the places where children spend most of their time and are easily reachable so as to establish health management policies [13].

2. Methodology

A total of 250 children were randomly selected, out of which 229 children reverted back. Children aged between 10-16 years residing in Ahmedabad were included. They were divided into 2 groups based on the inclusion criteria, i.e. BMI*. One group was of overweight and obese children, with BMI greater than 25. Another group was of non obese children, with BMI less than 25. BMI was measured by dividing the weight of the person in kilograms by the square of their heights in meters. Both groups were subjected to two scales; a standardized questionnaire that measured self esteem in children was used, in which higher the score on the scale, lower is the self esteem (scale 1). The other scale was the Rosenberg Self-Esteem Scale, in which higher the score, higher is the self esteem (scale 2). Written consent was obtained from the parents and verbal consent obtained from the children.

*According to World Health Organization [16], [17]; the globally accepted BMI distribution is:

Classification	Underweight	Normal	Overweight	Obesity I	Obesity II	Obesity III
Values	< 18.50	18.50-24.99	25-29.99	30-34.99	35-39.99	>40

3. Results and Discussion

The mean weight, height and BMI of the total data of 229 children are 63.47 kg, 1.59m and 24.66 respectively. The mean weight, height and BMI of 100 females are 61.61 kg, 1.56m and 24.88 respectively, and of 129 males are 65.38 kg, 1.62m and 24.49 respectively.

Table. 1: Showing the correlations of BMI and final scores along with age (both groups-BMI below 25 and above 25).

Age (years)	Scale 1(Correlation)	Scale 2(Correlation)
10 (5 th standard)	0.393	-0.377
11 (6 th standard)	0.106	-0.027
12 (7 th standard)	0.178	-0.125
13 (8 th standard)	0.312	-0.271
14 (9 th standard)	0.122	-0.079
15 (10 th standard)	0.250	-0.389
16 (11 th standard)	0.089	-0.058

Table 1 suggests that the results of both scales indicates that in the age group of 10-16 years, obesity and self esteem are inversely related and obesity precedes consequent development of low self esteem [18]. Also, the strongest correlation is in the age groups of 10, 13 and 15 years; these are the peak years as well in terms of changes taking place in the academic structure from the consecutive years.

10 year olds (5th standard students) would move to the higher education sections when they finish their academic year, 13 year olds (8th standard students) would face a change in their academic structure as they would be expected to take serious decisions by school and family, and 15 year olds (10th standard students) are currently preparing for their board examinations and majority of them would consequently be required to choose a field of education and would be termed as higher secondary. The data was collected from a similar

board and external variables such as academic load and transitions in terms of expectations and structure hint towards higher demands that are placed in these specific years. Self esteem is seen to be affected by obesity at a peak as earlier as in 5th std which goes to a peak at 13 years in 8th standard; more literature review and analysis can be done further towards this age and gender so as to study the causal reasons from obesity such as hormonal changes, genetics. Next peak shows up at 15 years i.e.10th standard. It is also surprising to see that at the age of 16 years that is 11th standard, which is the where highest level of self image is expected to be seen; the correlation exists but is not that strong.

Table. 2: Showing percentage distributions of both genders on each scale for both groups of BMI.

Levels	Scale 1 Low BMI		Scale 2 Low BMI		Scale 1 High BMI		Scale 2 High BMI	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
Low	14.29	18.86	9.52	9.43	18.82	25.53	27.27	21.28
Average	63.49	58.49	71.43	71.70	71.21	55.32	59.10	65.96
High	22.22	22.65	19.05	18.87	10.61	19.15	13.63	12.76

According to the table, the percentages of males of Low BMI group who have scored low self esteem on both scales are less than the percentages of males who have scored high self esteem on the same scales by 6% in scale 1 and 10% in scale 2. Whereas the percentages of males of High BMI group who have scored low self esteem on both scales are greater than the percentages of males who have scored high self esteem on the same scales by 8% in scale 1 and 14% in scale 2. We can also infer that the percentages of females of Low BMI group who have scored low self esteem on both scales are less than the percentages of females who have scored high self esteem on the same scales by 4% in scale 1 and by 9% in scale 2. Whereas the percentages of females in the High BMI group have who have scored low self esteem on both scales are greater than the percentages of females who have scored high self esteem on the same scales by 6% and 9% [19].

Table 3: Showing the ‘r’ values for each gender between the total scores on the scales and the BMI, of both groups on both scales.

Correlation	Scale 1 Low BMI		Scale 2 Low BMI		Scale 1 High BMI		Scale 2 High BMI	
	Male	Female	Male	Female	Male	Female	Male	Female
‘r’ value	0.052	-0.328	-0.086	0.092	0.189	0.111	-0.129	-0.359

Males from the Low BMI group show a slightly positive correlation on scale 1 and females show a stronger negative correlation on it and vice versa on scale 2, which indicates that even the females with Low BMI are susceptible to having an effect on self esteem and body image in relation to change in weight; while males do not show such highly sensitive effects. Males as well as females in the High BMI group show positive correlation on scale 1 and negative correlation on scale 2. The scores of both genders indicate that children who are overweight or obese are susceptible to reflecting a relationship between their body weight, physical appearance and self esteem. Scale 2 also indicates that females with High BMI are more sensitive to obesity and low self esteem than males.

4. Conclusion and Recommendations

Many obese children develop low self perceptions and research literature has documented many stereotypes regarding social rejection. Results of this study also confirm and support findings from previous researches that obesity is inversely related to self esteem, which indicates that overweight and obese children are at a higher risk of having low self esteem than children who weigh in the normal range. Also, females are more susceptible to being affected by body image perceived dissatisfaction as compared to males; whether obese or normal weight. But overweight and obese males are vulnerable to having low self esteem while normal weight males not so much. There arises a need on one hand to concede the detrimental consequences of obesity and on the other hand respecting these children as equal peers.

To reduce the effects to low self esteem due to obesity in children, a holistic and multi faceted approach needs to be undertaken. A model that has self management as its core component along with 2 other components – environment and medical system, must be adopted. Self management is the most effective technique for anybody trying to improve their wellbeing, here, obesity reduction is the prime focus. It is as complex as wanting to quit an addiction. It involves indentifying and accepting the problem, calling for help, and working hard to reach the desired goal (to remain healthy and reduce detrimental effects). Children who are already obese and who are suffering from eating disorders need to be recognized, and parents, siblings and immediate family can do so more easily than anybody else; instead of judging them, they need to be taken into confidence and helped as it is a physical as well as psychological issue and would shape the child's personality and future.

Obesity is a complex phenomenon that needs to be eradicated after considering the interaction between genetics (heredity), lifestyle, and environment. Practical customized interventions must be designed to prevent more children tipping off into the overweight and obese category. With good reason, need of the hour is to support and improve the well being of those who are already in that zone, as the psychosocial effects of obesity are on a hike along with its physical consequences. Schools can contribute towards curbing this problem by promoting physical activity during schools hours, inculcating physical health knowledge and skills, introducing nutrition education in the course and promote health food intake, arrange psychological services and counselling sessions for children and staff, and ensure that healthy eating habits are followed by children at least during school hours [20], [21]. Improvement in well bring might also result in betterment of academic performance of children.

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6. References

- [1] Kalra Sanjay, Unnikrishnan A.G. (2012). Obesity in India: The weight of the nation. *J Med Nutr Nutraceut*; 1:37-41
- [2] Kotian M S, Kumar S G, Kotian S S (2012). Prevalence and determinants of overweight and obesity among adolescent school children of South Karnataka, India. *India J Community Med* 2010; 35: 176-8.
- [3] World Health Organization (2013). Obesity and overweight, factsheet.
- [4] World Health Statistics 2012. World Health Organization (WHO).
- [5] Dr. Pinaki Sarkar, Dr. S.P. Swain, Dr. Kunal Mukherjee, Dr.R.K. Shukla (2010). A Study of Psychological Problems in Overweight and Obese Children. *The Orissa Journal of Psychiatry*-2010, 25-31.
- [6] Sylvia R.Karasu (2012). Of Mind and Matter: Psychological Dimensions in Obesity. *American Journal of Psychotherapy*, Volume 66, No.2, 2012.
- [7] Waumsley Julie, Mutrie Nanette (2011). Physical Activity and Exercise Psychology: Our role in healthy weight management for adults. *Obesity in UK: A Psychological Perspective*. British Psychological Society, pg.7.
- [8] Obesity and Mental Health (2011). National Obesity Observatory (NOO).

- [9] Sue David, David Wing Sue, Stanley Sue (2010). *Understanding Abnormal Behavior*. Wadsworth, Cengage Learning. 454-455
- [10] N. McCulloch, O. Muldoon and M. Dempster (2008). Self-Perception in over-weight and obese children: a cross-sectional study. *Child: Care, Health and Development*, 35, 3 357-364.
- [11] Schwimmer J.B., Burwinkle, T.M. & Varni, J.W. (2003). Health related quality of life of severely obese children and adolescents. *Journal of the American Medical Association*, 289, 1813-1819.
- [12] Huebscher C. Brenda (2010). *Relationship between Body Image and Self Esteem among Adolescent Girls*, University of Wisconsin. May 2010.
- [13] Bandura A. Self Efficacy and Health. *International Encyclopedia of Social and Behavioral Sciences*, Volume 20, pg.13815-138820.
- [14] Simone A. French, Mary Story, Cheryl L.Perry (2012). Self Esteem and Obesity in Children and Adolescents: A Literature review, *Obesity Research*. Volume 3, Issue 5, 6 Sept.2012
- [15] Lisa J. Benson (2010). *The Role of Parent Employment in Childhood Obesity*. University of Maryland
- [16] WHO (2004). *BMI Classification, Global Database on Body Mass Index*. World Health Organization.
- [17] WHO Technical Series Report (1995). *Physical Status: The Use and Interpretation of Anthropometry*. World Health Organization, Geneva 1995.
- [18] F. Wang, T.C. Wild, W. Kipp, S. Kuhle, and P.J. Veugelers (2009). The influence of childhood obesity on the development of self esteem. *Statistics Canada, Health Reports*, Vol.20, no.2, June 2009.
- [19] Marika Tiggermann, Esther D Rothblum (1997). Gender Differences in Internal Beliefs about Weight and Negative Attitudes towards Self and Others. *Psychology of Women Quarterly*, 21 (1997), 581-593.
- [20] *Make a Difference at Your School! CDC Resources Can Help You Implement Strategies to Prevent Obesity Among Children and Adolescents*. U.S Department of Health and Human Services Centers for Disease Control and Prevention. January (2008).
- [21] Howell Wechsler, Mary L. McKenna, Sarah M. Lee and Willian H. Dietz (2004). *The Role of Schools in Preventing Childhood Obesity*. The State Education Standard. December 2004.