Original Article

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# Status of Clinical Study on Obesity & Over Weight in Children in a Tertiary Care Teaching Hospital

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## Abstract

**Background:** World Health Organization (WHO), obesity can be defined as the accumulation of body fat in an abnormal and/or excessive manner showing serious health problems. **Subjects and Methods:** Total of 954, out of which male were 475 female 479, the common age group between 7-15yrs Enter data is analyzed systematically and computerized by using cell method. **Results:** In this present study in among boys in 7 – 9yrs group the number of boys was were 13 (2.73%) and in 13 -15yrs group, the number is 32(6.73%) In Girls section the number of childrenis 17(3.54%) and 39(8.54%) respectively. **Conclusion:** Childhood obesity is a global problem. In India the prevalence is slowly increasing.

**Keywords:** Obesity, overweight & BMI.

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## Introduction

As per the World Health Organization (WHO), obesity can be defined as the accumulation of body fat in an abnormal and/or excessive manner showing serious health problems. In this scenario, over weight and obesity are considered a serious public health problem, and it is therefore a subject of considerable impact and worldwide interest.[1] Obesity is often expressed in terms of body mass index(BMI). Overweight is usually due to may be obesity but may also be due to increased muscle mass, fluid retention, and some endocrinological diseases (Eg. Cushing syndrome).[2] Childhood obesity and overweight is characterized as body mass index of more than 95 percentile for age and sex and BMI more than 85 percentile for age and sex respectively.[3] There is no single reason to explain all cases of obesity and overweight but most studies implicate imbalance in the amounts of calories consumed and those expended.[4] Energy break down is said to be less than energy build up. The disruption of the normal satiety feedback mechanisms, hyperinsulinism, insulin resistance, and genetics are some of the biophysiological causes of obesity and overweight.[5] About 50-80% of obese children will continue as obese adults and fall into risk group of Diabetes, Hypertension, Coronary Heart Diseases and many more obesity related diseases. Complications of adult obesity are made worse if the obesity begins in childhood. Obesity is harder to treat in adults than in children.[6] Our aim was to be the status of clinical study on obesity & over weight in children in a tertiary care teaching hospital.

## Subjects and Methods

This present study was conducted in the Department of Pediatrics, Sakshi Medical College And Research Centre, Miana, Madhya Pradesh during the period from January, 2018 to July, 2018 . Total of 954, out of which male were 475 female 479, the common age group between 7-15yrs Enter data is analyzed systematically and computerized by using cell method. Informed consent has been taken from the college ethical committee. After careful history taking and clinical examination height and weight recording were taken by trained paramedical teams. Children with endocrinological abnormalities like hypothyroidism and who are on drugs like steroids were excluded in this study. The children with clear cut overweight and obesity are included in this study. We have not advised any investigations since this study has been about the history and physical examination only. The National Institutes of Health(NIH) defines a normal BMI as 18.5-24.9; Overweight is defined as BMI: 25-29.9; Class 1 Obesity is 30-34.9; Class II obesity is 35 – 39.9; Class III (extreme) Obesity is BMI greater than 40.[7]

**Table 1: WHO Classification of adults according to BMI**

| Classification | BMI (kg/m2) |
|---|---|
| <18.5 | Underweight |
| 18.5-24.9 | Healthy |
| 25-29.9 | Overweight |
| 30-39.9 | Obese |
| >40 | Morbid obese |

## Results

**Table 2: Shows the age differentiation in male and female**

| Age in years | No. of Males (n=475)(%) | No. of Females (n=479) (%) |
|---|---|---|
| 7-9 Yrs | 13(2.73%) | 17(3.54%) |
| 9-11 Yrs | 18(3.78%) | 22(4.59%) |
| 11-13 Yrs | 27(5.68%) | 31(6.47%) |
| 13-15 Yrs | 32(6.73%) | 39(8.14%) |
| Total | 90(9.43%) | 109(11.42%) |

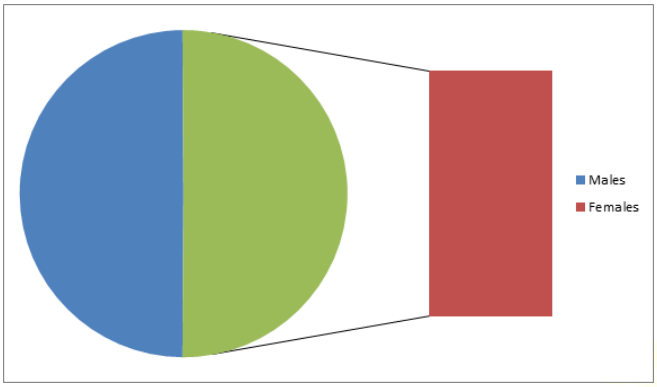


**Figure 1: Shows the percentage of male and female children.**

**Table 3: Shows the classifications of obesity according to BMI**

| BMI (Wt/m2) | No. of Males (n=475)(%) | No. of Females (n=479) (%) |
|---|---|---|
| 25-29.9 | 39(8.21%) | 47(9.81%) |
| 30-39.9 | 32(6.73%) | 35(7.30%) |
| >40 | 19(4.0%) | 27(5.63%) |
| Total | 90(9.43%) | 109(11.42%) |

**Table 4: Shows the children from different Living areas**

| BMI (Wt/m2) | No. of Males (n=475) (%) | No. of Females (n=479) (%) |
|---|---|---|
| Rural | 23(4.84%) | 24(5.01%) |
| Semi Urban | 29(6.10%) | 36(7.51%) |
| Urban | 38(8.0%) | 49(10.22%) |
| Total | 90(9.43%) | 109(11.42%) |

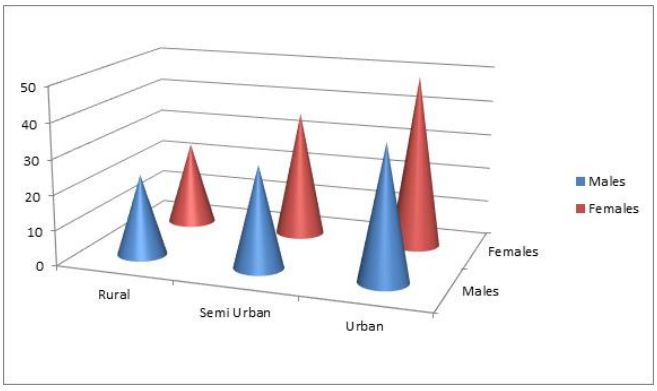


**Figure 2: Show the children from different Living areas.**

The present study was a cross sectional study done in 12 schools of north India and included 954 children in the age group of 7-15 years. Out of 954 children included in the study, 475 (49.79%) children were males and 479 (50.20%) children were females with male to female Ratio 1:1.02. Out of this 954 males are 475 and females are 479 the common age group is between 13 to 15 years over weight and obesity is increasing with age. In this present study in among boys in 7 – 9yrs group the number of boys was were 13 (2.73%) and in 13 -15yrs group, the number is 32(6.73%) In Girls section the number of childrenis 17(3.54%) and 39(8.54%) respectively.

## Discussion

In India, very few studies have been carried out to study the overweight/obesity in rural school children and majority of them have been carried out in cities in high income schools. Childhood obesity is a very common problem worldwide. The number of cases is increasing in developed and developing countries. It is emerging convincingly that the geniuses of Type 2 Diabetes and coronary artery disease begin in childhood obesity serving as an important factor. There has been a phenomenal rise in the proportion of children having obesity in the last 4 decades some studies show from India within the last few years indicating that similar tread.[8]

Out of this 954 males are 475 and females are 479 the common age group is between 13 to 15 years over weight and obesity is increasing with age. These results correlate with the studies conducted by Shetty PS Et al.[9] Overweight and obesity gradually increase with age. In this present study in among boys in 7 – 9yrs group the number of boys was were 13 (2.73%) and in 13 -15yrs group, the number is 32(6.73%) In Girls section the number of childrenis 17(3.54%) and 39(8.54%) respectively. These & figures nearly correlating with the study conducted by Chu NF Et al.[10] In Males, nearly 10% are having Class I obesity and 5% are in Class III obesity. In our study average prevalence is about 9.43%of boys, 11.42% of girls are having obesity the studies conducted in the Mahe region by the Kerala govt show the prevalence is 9.25%. In Ex a similar study from Kerala also that there are increasing trends in the prevalence of obesity from 4.9% in 2003 to 6.57% in 2005.[11] In our study obesity is more common in females than males out of 954 children, obesity is observed in 109 females and 90 males. The studies conducted in Pondicherry shows similar results but whereas the observation in male study is reversed.[12] The prevalence of overweight and obesity was a little higher in children. Those who are residing in urban areas than rural areas in urban areas, In the urban area, were 3-4 times at greater risk of being overweight and obsessed compared to children in rural areas.[13] It was observed that the prevalence of overweight and obesity was 3.21% and 3.56% among children studying in govt schools. Whereas it was found to be higher among children studying in private schools. 3.25% and 2.92% respectively.[14] The areas of residence socio-economic conditions and age (gender differences were felt to be important contributors towards overweight and obesity.

According to statistics in the united states, more than 64% of adults are having overweight or obese and the prevalence is increasing rapidly in developed countries like the US, UK, and Australia. Multiple health problems are associated with obesity like hypertension diabetes mellitus, dyslipidemia, obstructive sleep apnea. Degenerative joint disease, COPD, CAD, Osteosthritis chalethisis, and certain malicious like breast cancer uterine malignancy. Management of obesity includes diet therapy, physical activity therapy behavioral therapy pharmacotherapy and bariatric surgery lifestyle management results in 3-5 kgs weight lossdiet therapy includes meals of small position size, eating more fruits and vegetables, and whole-grain cereals two classes of drugs are used for obesity- Appalite, supersets and gastrointestinal blockers. Bariatric surgery is an increasingly prevalent treatment option for patients with severe obesity. Widly used operations are Roux-an-y gastric bypass (RYGB) and gastric bonding. A third operation is sleeve gastronomy. The possible risk factors in causing childhood obesity are sedentary lifestyle which makes them stay physically inactive. Giam mattei et al.[15] also reported that children who spent more time watching television had a higher BMI. Often parents are working and unable to concentrate on balanced nutritional food for their children. They find it easier to let their children consume junk and fast foods. Even the burden of school work and academic competitiveness has decreased the participation in sports and other form of physical activities in urban area which leads to high frequency of overweight and obesity.

## Conclusion

The present findings indicate that the childhood obesity is a global problem. In India the prevalence is slowly increasing. Obesity is more in girls than boys. Urban residing children are more affected than rural residing children. Dietary habits and physical activity play a major role and other factors included are social-economic, environmental, and genetic factors. Hence effective preventive strategies should be developed to halt this epidemic.

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