

Study of Obesity in Children of Age Group 10 To 13 Years**Gouri Rajput¹, Uday Chandrapalsing Rajput², Saurabh Mutha³**¹Assistant Professor , Department of Paediatrics , N. K. P. Salve Institute of Medical Sciences and Research Centre & Lata Mangeshkar Hospital, Nagpur , Maharashtra²Associate Professor, Department of Paediatrics, B J Government Medical College and Sassoon General Hospital, Pune, Maharashtra³Assistant Professor, Department of Paediatrics, Government Medical College , Baramati, Maharashtra

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Abstract:

Obesity is increasing at an alarming rate throughout the world. Today it is estimated that there are more than 300 million obese people world-wide. Obesity is a condition of excess body fat often associated with a large number of debilitating and life-threatening disorders. It is still a matter of debate as to how to define obesity in young people. Overweight children have an increased risk of being overweight as adults. The aim of this study was to estimate the prevalence of Overweight and Obesity among 100 children of 10-13 years in an Urban India. Weight and height of the subject were taken and body mass index (BMI) was calculated. All subjects from the selected age group 10 to 13 years of both gender were interviewed. Each interview was done for 15 minutes. Questions were asked regarding pattern of eating, screen time, dietary pattern, and frequency of intake of junk food. 62% subjects were normal weight, 15% were overweight, 23% were obese. Males were more overweight and obese than females. Awareness amongst parents on obesity and its complications is need of the hour, and routine screening for obesity on OPD basis by healthcare professionals should be done. Inculcating good habits like healthy balanced diet, daily physical activity, can be included in school curriculum.

Keywords: Obesity, Children.

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Introduction

In India, undernutrition is attracting health workers, as childhood obesity was rarely seen before. But over the past few decades, childhood obesity is increasingly being observed with the changing lifestyle of families with increased purchasing power, increasing hours of inactivity due to televisions, video games and computers that have replaced outdoor games and minimised their social interactions. [1] “The majority of overweight or obese children live in developing countries, having an increased rate of more than 30% which is higher than that of developed countries”. [2] “A calculated global prevalence of overweight and obesity in school children aged 5-17 years is estimated by the World Health Organisation (WHO), International Obesity Task Force (IOTF) to be approximately 10%”. [3] The childhood obesity emerging as one of the global health concern with 200 million school aged children worldwide categorizing as being overweight and obese, of which 40-50 million are obese. [4,5] Obesity has reached epidemic levels in developed countries. The highest prevalence rates of childhood obesity have been observed in developed countries; however, its prevalence is increasing in developing countries as well. [6] Females are more likely to be obese as compared to males, owing to

inherent hormonal differences. It is emerging convincingly that the genesis of Type 2 Diabetes and Coronary Heart Disease begins in childhood, with childhood obesity serving as an important factor. There has been a phenomenal rise in proportions of children having obesity in the last 4 decades, especially in the developed world. Studies emerging from different parts of India within last decade are also indicative of similar trend. [7-11] This view has been challenged over recent years and we presently consider these as different forms of the global malnutrition problem. The increased prevalence of paediatric obesity demonstrates the need for a simple anthropometric tool that can be used to assess and identify children who are at risk of becoming obese. [12] An increase in the prevalence of childhood obesity is associated with potential medical complications of obesity noted in adolescence and especially in adulthood. [13] Many countries in South-East Asia including India are going through an economic and nutrition transition. The nutrition transition is associated with a change in dietary habits, decreasing physical activity thus rising prevalence of obesity. [14] The aim of this study was to estimate the prevalence of Overweight

and Obesity among children 10-13 years in an Urban India.

Material and Methods

Study design: Cross sectional study.

Study setting: Non-government schools in the urban area near a Medical College.

Study population: The study population included 100 School children between the ages of 10 to 13 years. After getting written consent from the subject, a pretested questionnaire was asked. Questionnaire included their general information and factors which are contributing to obesity. Weight and height of the subject were taken and body mass index (BMI) was calculated. All subjects from the selected age group 10 to 13 years of both gender were interviewed. Each interview was done for 15 minutes. Questions were asked regarding pattern of eating, screen time ,dietary pattern ,and frequency of intake of junk food.

Inclusion Criteria: Healthy children of both sex and ethnicity in the age group between 10-13 years.

Exclusion Criteria: Children suffering from any chronic diseases. Children with any endocrinal, congenital diseases leading to nutritional disorders, Children on psychotropic drugs, anti-epileptic drugs, steroids, Children or care takers not willing to voluntarily participate.

Study Protocol: A written permission was obtained from the school principal & parents/ guardians of the children in parents teacher after explained about study. Healthy children fulfilling the inclusion criteria were screened and out of which 100 children who were voluntarily willing to participate were included in study.

The data were entered in Microsoft Excel and data analysis was done by using SPSS for windows. The analysis was performed by using percentages in frequency tables.

Results

Table 1: Age groups of subjects

Age groups (years)	Boys n=50	Percentage	Girls n=50	Percentage
10-11	24	48 %	20	40 %
11-12	18	36 %	14	28 %
12-13	08	16%	16	32 %

Table 2: Body mass index

BMI (kg/m ²)	Subjects n=100	Percentage
Normal (18.5-24.9)	62	62 %
Overweight (25-29.9)	15	15 %
Obese (>30)	23	23 %

Table 3: Gender wise BMI

BMI	Subjects n=100	Boys	Percentage	Girls	Percentage
Normal	62	32	51.66 %	30	48.38 %
Overweight	15	10	66.66 %	05	33.33 %
Obese	23	15	65.21 %	08	34.78 %

Table 4: Dietary habits

Meals frequency	Subjects n=100	Percentage
Two times	38	38 %
Three times	51	51 %
>Three times	11	11 %

Table 5: Junk food eating habits

Junk food eating habits	Subjects n=100	Percentage
Daily	25	25 %
Once a week	15	15 %
More than once a week	60	60 %

Table 6: Time spent on Mobile, TV, Laptop

Time spent on mobile, TV, Laptop	Subjects n=100	Percentage
1 -2 hours	21	21 %
2-3 hours	53	53 %
>3 hours	26	26 %

Table 2 shows 62% subjects were normal weight,15% were overweight,23 % were obese.

Table 3 shows males were more overweight and obese than females

Table 4 shows dietary habits meal frequency, 38% ate 2 times a day, 51% ate 3 times a day and 11% ate more than 3 times a day.

Table 5 shows junk food eating habits, 25% ate daily, 15% ate once a week. and 60% More than once a week

Table 6 shows Time spent on Mobile, TV. Laptop, 2 % spent 1 -2 hours, 53 % spent 2-3 hours and 26% spent >3 hours.

Discussion

During the past two decades, the prevalence of obesity in children has risen greatly worldwide but this is unequally distributed with prevalence ranging from 30% in United States to <2% in Sub Saharan Africa[15]. Obesity is seen as new wave of Non communicable diseases called "New World Syndrome. Burden of obesity has risen tremendously over the past few decades. And has become an endemic in many parts of the world. Obesity is today's most apparently visible, yet most neglected public health problems [16]. In 2014, 39% of adults were found to be overweight and 13% were obese [17]. According to the National Family Health Survey (NFHS-4). BMI \geq 25 among female is 20.7 and in male is 18.6%, respectively [18]. The worldwide prevalence of childhood obesity increased from 4.2% in 1990 to 6.7% in 2010. And is expected to reach 9.1% in 2020 [19]. There has been a consistent rise in childhood obesity since 1971 in developed countries and now its prevalence is increasing in developing countries as well. Changes in lifestyle, less physical activity and decreased exercise, wrong eating habits and less of outdoor activities have become a major health hazard of children. Body mass index (BMI) is a very simple yet reliable index to identify obesity.

Our study shows 62% subjects were normal weight, 15% were over weight, 23% were obese. Males were more overweight and obese than females. Dietary habits meal frequency shows , 38% ate 2 times a day, 51% ate 3 times a day and 11% ate more than 3 times a day. Junk food eating habits shows, 25% ate daily, 15% ate once a week. and 60% more than once a week. Time spent on Mobile, TV. Laptop shows 21% spent 1 -2 hours, 53 % spent 2-3 hours and 26% spent >3 hours.

In study conducted by Chhatwal et al among 9-15 years school children in Punjab in the year 2004 revealed that the prevalence of overweight and obesity was 14.2% and 11.1% respectively. [20] In a study done by S Kumar et al among affluent school children aged 10-15 years in the Davangere city in the year 2006 revealed that the prevalence of obesity was 5.74%. [21] Watching TV was significantly associated with overweight and obesity. A study done by M. Shashidhar et al among 12-15 years adolescent in Mangalore in the year 2010. Showed

that a multivariate logistic regression revealed that the prevalence of overweight and obesity was 7.3 times higher than in those reported watching television for more than 4 hours a day. Additionally, Bharati et al found a positive association between obesity and TV watching and also between obesity and consumption of fast food. [22] The present study represents that childhood overweight and obesity has an increasing prevalence in India that has become a public health concern worldwide. Thus, an urgent need of collective approach that can implement preventive strategies combating the problem of overweight and obesity in children is required.

Conclusion

Pediatric care providers should universally assess children for obesity risk to improve early identification of elevated BMI, medical risks and unhealthy eating and physical activity habits. This should start in the primary care setting. Awareness amongst parents on obesity and its complications is need of the hour, and routine screening for obesity on OPD basis by healthcare professionals should be done. Inculcating good habits like healthy balanced diet, daily daily physical activity can be included in school curriculum

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