



Prevalence of Obesity and its Risk Factors in Children: A Small Hospital based Study

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Abstract

There has been a rapid upsurge in childhood obesity for the past few decades. Approximately 17% of children are obese worldwide. It is amongst the easiest medical conditions to recognise yet one of the most difficult to treat. As it requires long term lifestyle modifications. Aim of this study was to see the prevalence of obesity and factors contributing to it amongst adolescent children between the age of 11 to 16 years. 200 adolescent children were selected from the out patient department of the SLBSGMC. Questions were asked to them which comprised of features like daily physical activity, screen time, frequency of consumption of junk food, pattern of eating, etc. Height was measured on stadiometer and weight on weighing scale respectively. Statistical analysis was done by SPSS 16 and MS excel. Among them 56.5% were boys. 65% students were of 13 to 14 years of age. As per body mass index, 42.5% children were under weight and 15% were obese and overweight. 73% of the children were having junk food more than once in a week.

Keywords: Obesity; Children; Junk Food

Introduction

Obesity is seen as the 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 [2]. In 2014, 39% of adults were found to be overweight and 13% were obese [3]. According to the National Family Health Survey (NFHS-4). BMI \geq 25 among female is 20.7 and in male is 18.6%, respectively [4]. 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 [5]. 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 [3]. Body mass index (BMI) is a measurement of weight against

height [8]. Amongst Asians BMI is equal to or greater than 23 as overweight and equal to or greater than 25 as obesity [3].

Material and Methods

Objectives

To know the prevalence of obesity and factors contributing to it amongst children of 11 to 16 years of age.

Inclusion criteria

Children of 11 to 16 years of age group were included.

Exclusion criteria

Exclusion criteria was children with disability were excluded; study subjects who will not be giving consent to participate; were also included.

Methods of data collection

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 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.

Data analysis

Data was entered into Microsoft excel sheet and analysed using SPSS 20 software. Descriptive statistics like frequency, percentages, and inferential statistical tests like chi-square analysis were used

Results

In this study, 200 children, aged between 11 to 16 years were interviewed. Amongst them 113 (56.5%) were boys and 87(43.5%) were girls (Table 1). 131 (65.5%) students were between 13 to 14

years of age. As per body mass index, 85 (42.5%) of children were underweight, 85 (42.5%) were of normal weight, 15 (7.5%) were overweight and 15 (7.5%) were obese. 110 (55%) participants had meals 3 times in a day. Among students 41% were non vegetarian (Table 3). Children who were interviewed 138 (69%) were spending their time on mobile/TV/laptop for more than 4hrs in a day.

Age group (in years)	Boys (%)	Girls (%)	Total (%)
11 to 12	12(57%)	10(42.85%)	22(100)
13 to 14	71(54.1%)	60(43.5%)	131(100)
15 to 16	30(62.5%)	18(37.5%)	48(100)
Total	113(56.5%)	87(43.5%)	200(100)

Table 1: Distribution of students according to sex and age.

BMI	11 to 12		13 to 14		15 to 16		Total	Percentage
	Boys	Girls	Boys	Girls	Boys	Girls		
Underweight	3	8	28	23	18	5	85	42.5
Normal	5	3	32	29	10	6	85	42.5
Overweight	1	2	4	3	2	3	15	7.5
Obese	1	0	7	4	2	2	15	7.5
Total	10	13	71	59	32	15	200	100

Table 2: Age group wise distribution of boys and girls according to body mass index.

In above table, 85(42.5%) students are underweight, of them 11 were of 11 to 12 years of age and 3 were boys and 8 were girls. In the age group 13 to 14 years 51 of them were underweight, and amongst them 28 were boys and 23 were girls. 23 students who were from 15 to 16 years of age were underweight, amongst them 18 were boys and 5 were girls. About 15 (7.5%) participants were overweight, and of them 4 were from 15 to 16 years of age group and 2 each were boys and girls respectively. Also, total 15 (7.5%) subjects were obese, among them 11 were from 13 to 14 years of age group and 7 were boys and 4 were girls.

Table 3 shows, children who were taking meals for two times in a day were 80 (40%). Whereas 100 (50%) of them were taking three meals in a day. 20 (10%) students were eating meals for more than 3 times in a day. Also, it is observed that 118 (59%) were vegetarian and rest 82 (41%) were non vegetarian.

	Frequency	Percentage
Frequency of meals in a day		
Two times	80	40
Three times	100	50
More than 3 times	20	10
Type of diet		
Vegetarian	118	59
Non vegetarian	82	41

Table 3: Dietary habits.

In Table 4, children who were spending time on mobile/TV/laptop for more than 4hrs in a day were 138 (69%) and remaining 62 (31%) children spent less than 4 hrs a day.

Table 5 shows, Children who were taking junk food everyday were 9(4.5%). Whereas 146 (73%) of them were eating it more

than once in a week and 32(16%) of them were eating junk food once in a week. 13 (6.5%) were eating junk food occasionally.

Time spend on mobile/ Tv/laptop	Frequency	Percentage
Less than 4 hrs a day	62	31
More than 4 hrs a day	138	69
Total	200	100

Table 4: Frequency of students spend time on mobile/TV/laptop.

Eating junk food	Frequency	Percentage
Daily	9	4.5
More than once in week	146	73
Once in a week	32	16
Occasionally	13	6.5
Total	200	100

Table 5: Frequency of junk food eating.

Discussion

In South Karnataka, similar studies were conducted on adolescent children, and was observed that 51.2% participants were boys [5]. The prevalence of overweight among adolescents was 9.9% and obesity was 4.8%. The risk of overweight was higher in those who had history screen time for ≥ 4 -6 hours/day. In another similar study done in India total of 1208 adolescents (48.5% boys) in the age group of 12 to 17 years of age, with a mean age of 14.5 years, were studied. 22% of adolescents preferred to consume junk foods. In present study, 56.5% were boys and 43.5% were girls and of them 65% of children were of 13 to 14 years of age group. As per body mass index, 42.5% children were underweight, 42.5% of normal weight, 7.5% amongst them were overweight and 7.5% were found obese. Among participants 41% were non vegetarian and 59% had vegetarian food. 69% of the Children were spending their time onscreen watching for more than 4 hrs per day and 73% of the children were found eating junk food more than once in a week [1,6-22].

Conclusion

The prevalence of overweight and obesity was found to be 7.5% each respectively. Among study participants 69% children spend big portion of their time in screen watching. Frequency of eating junk food more than once in a week was found in about 73% of the children. All these parameters point towards two major con-

tributors of obesity and need for lifestyle modifications. 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 curriculums as well.

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