

A study on eating habits of selected obese school going children

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■ **ABSTRACT :** Nutritional status of obese school going children were assessed in Western Maharashtra *i.e.* Pune, Nashik and Ahmednagar districts. For this study, 600 obese school going children were selected, from which 224 boys and 376 were girls in 6- 16 age group of 6-16 years. The obesity of these children were assessed by using BMI. Eating habits of these children were examined by using questionnaire and dietary recall method. It is found that eating habits like preference for junk food, skipping meal and eating in front of TV marked as correlating factors for its effect on overweight and obesity.

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Obesity is a global nutrition concern confined not only in adults but also in children and adolescents. With changing life-style and growing urbanization, there has been a rapid increase in health problems related to over nutrition such as overweight and obesity in developing countries worldwide (Bhave *et al.*, 2004). Childhood obesity is a condition where excess body fat negatively affects a child's health or well being (Briefel and Johnson, 2004). The prevalence rate of overweight and obesity in India are 12.8 and 10.3 per cent, respectively and about 30 per cent of obesity begins in childhood (Centers for disease control and prevention, 2009). This may have major implications towards increasing prevalence of non-communicable diseases like diabetes, hypertension and cardiovascular disease in early adulthood

(Chakraborty *et al.*, 2012 and Kopelman, 2005). The negative life style, lack of physical activity and consumption of unhealthy foods are contributing factors for childhood over weight and obesity (Kumar *et al.*, 2007). Studies in the US have observed a change across the age groups that they consume a large proportion of their daily food intake via snacks rather than sit- down meals , favouring quick, easy –often non-nutritious-foods and high-calorie treats be it in the form of processed foods, street foods, fast foods or junk foods (McMaster *et al.*, 2005). Against this background, the present study was undertaken to assess the nutritional status especially eating habits of overweight and obese children and reasons for accepting junk food always.

RESEARCH METHODS

An exploratory research has been conducted in three districts such as Pune, Ahmednagar and Nasik of Western Maharashtra. Total 600 (obese) children among obese children having age between 7 to 12 years including male and female were selected by (purposive) simple random sampling method. About 200 obese children were randomly selected from each district. Out of 600 obese children 224 were male and 376 were female. The obese children were selected by calculating BMI through school information of height and weight of children with prior permission of principal.

All the anthropometric measurements were taken in the school premises with standard procedure. We have recorded body weight to the nearest 0.1 kg using a

standard balance scale with subjects barefoot and wearing light indoor clothing. Body height was measured by scale was used up to an accuracy of 1 mm. Body Mass Index (BMI) is defined as the ratio of body weight to body height squared, expressed as kg/m². Overweight and obesity was assessed by BMI for age. Student who had BMI for age >85th and <95th percentile of reference population were classified as overweight. Students who had BMI for age >95th percentile of reference population were classified as obese. The lower cut- off points for Asians were identified for overweight (BMI>23.0kg/m) and obesity (BMI>25.0kg/m) (WHO, 2004). The collected data were pooled, tabulated and analysed statistically.

Table 1 : Eating habits of selected obese children				
Particulars	Male (224)		Female (376)	
	Frequency	Per cent	Frequency	Per cent
Eating pattern				
Vegetarian	68	30.36	157	41.76
Non-vegetarian	156	69.64	219	58.24
Diet frequency				
2 times	97	43.30	139	36.96
3 times	82	36.60	172	45.74
4 times	45	20.08	65	17.28
Type of food in tiffin				
Bread based	82	36.60	49	13.03
Fried foods	39	17.41	63	16.75
Chiwada	21	9.37	28	7.44
Laddu	19	8.48	21	5.58
Thalipith	7	3.12	19	5.05
Chapati bhaji	56	25.00	196	52.12
Outside food in lunch time				
Wada Pav	102	45.53	94	25.00
Kurkure	154	68.75	177	47.07
Wafers	87	38.63	134	35.63
Chocolates/Cadburry	39	17.41	89	23.67
Bhel	47	20.98	79	21.01
Type of meal eating with family				
Breakfast	31	13.83	84	22.34
Lunch	18	8.04	27	9.18
Dinner	48	21.42	98	26.06
Activity during food intake				
Watching TV	134	59.82	269	71.54
Playing on mobiles	71	31.69	58	15.42
Reading	13	05.80	28	7.45
Listening to stories	06	02.68	21	5.58

■ RESEARCH FINDINGS AND DISCUSSION

The present study was conducted in Nashik, Pune and Ahmednagar districts of Western Maharashtra on randomly selected 600 overweight and obese children, among them 224 were boy and 376 were girls Of 6-17 years of age. From which 69 per cent and 65 per cent boys and girls were overweight, respectively while 30 and 35 per cent boys and girls were obese, respectively. It has been seen that the prevalence of obesity was higher in girls when compared with that of boys. These findings are in confirmation with the study of Kumar *et al.* (2007); McMaster *et al.* (2005) and Kavitha Shree *et al.* (2013) who observed the prevalence of obesity and overweight was higher in school going girls than boys.

Majority of boys and girls *i.e.* 69.64 per cent and 58 per cent were non- vegetarian, respectively. Many studies suggested that type of diet is responsible factor for weight gain. This result is in confirmation with Ramachandran *et al.*(2002) in Kerala who reported slightly higher prevalence in obesity among non-vegetarian than vegetarian. The children consuming vegetarian diet tend to be lighter than non –vegetarian. It is also observed that 43 and 37 per cent boys and girls were taking only 2 times diet, respectively while 37 and 46 per cent boys and girls were taking diet 3 times, respectively. Only 20 per cent boys and 17 per cent girls were following 4 time meal pattern. This indicates that skipping meal is more common. Similarly WHO reported that skipping breakfast may lead to over consumption in next meal.

It can be concluded that skipping meal was common for both boys and girls.

Majority of the children were carrying tiffin in school. The content of tiffin was chapatti-bhaji mostly in girls (52.12%). But 72 per cent boys were having bread based food item, fried foods, chiwada and laddoo as a tiffin content. Instead of tiffin both boys and girls were interested in eating out side food like wada pav, kurkure, wafers, chocolates/Cadbury and bhel. Girls were more interested in chocolates/Cadbury. Some times children eat more foods which are high in sugar and energy rich foods. Hence energy intake is higher than expenditure and contributing to weight gain (WHO, 2003).This is also a serious issue which was observed only in 43 per cent boys and 58 per cent girls were taking at least one meal with family members. While having food or meal

61 per cent boys and 72 per cent girls were watching TV and 32 per cent boys were playing games on mobiles. TV viewing while eating is a contributing factor to childhood obesity. These results are in confirmation with the findings of Kavitha Shree *et al.* (2013).

Hypothesis: there is no significant different between male and female children with respect to obesity and overweight.

Response	Male	Female	Total
Overweight	156	244	400
Obesity	68	132	200
Total	224	376	600

$H_0: O_i = E_i$ v/s $H_1: O_i \neq E_i$ (O_i : observed, E_i : expected frequency of response)

Calculated value of $\chi^2 = 1.424$, critical value of $\chi^2 = 3.841$.

Frequency of diet	Male	Female	Total
2	97	139	236
3	82	172	254
4	45	65	110
Total	224	376	600
Mean	2.77	2.80	
S. D.	0.763	0.711	
C.V.	27.57	25.35	

As calculated value of χ^2 lies in the acceptance region, accept H_0 .

Therefore, there is no significant difference between male and female children with respect to obesity and overweight.

Table 2 indicates the preferences given to junk food by selected overweight and obese children. The children preferred mostly Kurkure, fried snacks, wafers and maggi noodles by both genders. But it seems that boys preferred cold drinks and girls preferred chocolates mostly.

Table 3 indicates that the reasons given by children for preferences of junk food. It was found that all children were habitual for junk foods.

There is no difference between male (224) and female (376) children in the preference to junk food which is habitual, all *i.e.* 100 per cent children responses that it is habitual.

$H_0: P_1 = P_2$ v/s $H_1: P_1 > P_2$ (P : Population proportion of reason of preferences)

Sample proportions: $p_1 = 0.882$, $p_2 = 0.863$

Table 2 : Junk food preferences given by overweight and obese children

Sr. No.	Type of foods	Preferences of food items			
		Male		Female	
		Likes	Dislikes	Likes	Dislikes
1.	Chips/wafers	88.8	11.2	93.6	6.4
2.	Fried snacks	95.5	4.5	91.5	8.5
3.	Pizza /burger	80.4	19.6	77.1	22.9
4.	Chocolates	85.7	14.3	85.4	14.6
5.	Cold drinks	93.3	6.7	77.1	22.9
6.	Cake and pastries	77.7	22.3	80.1	19.9
7.	Chinese food	75.5	24.5	78.7	21.3
8.	Fruit juices	79.9	20.1	74.5	25.5
9.	Kurkure	93.8	6.2	91.5	8.5
10.	Magi noodles	91.1	8.9	83.5	16.5

Table 3 : Reasons behind preferences for junk food

Reason of preferences	Response	
	Male (%)	Female (%)
Habitual	100	100
Impact of advertisement	84.8	85.4
Easily available	85.7	80.31
Peer pressure	89.7	87.0
Convenient to eat	92.4	92.6

Calculated value of Z = 92.66, critical value of Z at 5 per cent level of significance = 1.64 (one sided test).

As calculated value of Z lies in the critical region, hence reject H_0 .

Therefore, the preferences to junk food by male students are more than that of female students.

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