

FAST FOOD INTAKE AND PREVALENCE OF OBESITY IN SCHOOL CHILDREN OF BHOPAL CITY

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ABSTRACT

Introduction: Obesity is an outcome of positive energy balance. Fast foods are calorie dense foods. Consumption of food eaten away from home has also risen alarmingly. Higher consumption of fast food may lead to increased intake of empty calorie leading to obesity in children and frequent consumption is definitely harmful to child health. Fast foods are typically high in calories, high in fat, high in saturated and trans fat, high in sugar, high in simple carbohydrate, high in sodium. The increased intake of fast foods and reduced physical activity has led to obesity in children.

Objective: The study was carried out to assess the fast food intake and prevalence of obesity in school children of Bhopal city.

Methodology: In present study, 240 children were screened for prevalence of obesity using height and weight measurement. Consumption of fast food was assessed in overweight and obese children. Children were counselled for healthy eating habits.

Results and conclusion: Results showed that fast food intake was high in over weight and obese children. The awareness regarding unhealthy fast foods was low among children which improved after counselling.

Keywords: Fast food, Intake, BMI, Obesity, Children

Introduction

Obesity in children is increasing (WHO, Obesity is an outcome of prolonged positive energy balance due to reduced physical activity, desk confined studies as well play activities, use of motorized conveyance for communication and high calorie intake. Consumption of fast food in children has contributed much to increase energy intake while reduction in vital micronutrients. The trend of fast food consumption is increasing in developing countries like India. The percentage of obese adolescents aged 13–19 years reached to 21% from 5%. In 2016, more than one third of adolescents were overweight or obese.

Childhood obesity has adverse effects on well-being and health of the children. Obese children are prone to cardiovascular diseases, joint problems, insomnia, social and psychological problems.

“The schools play an important role in establishing healthy food habits and activity in the children” (Abdulrahman et. al., 2014). Generally, a person with body mass index (BMI) above 30 is considered obese. There is a growing concern about the increasing prevalence of childhood obesity worldwide.

According to “Market research, 2017” “Global fast food market was valued at over USD 539.63 billion in 2016 and is expected to reach above USD 690.80 billion in 2022 and is anticipated to grow at a CAGR of slightly above 4.20% between 2017 and 2022” (Sarosta, FL, 2017).

Objective

The study was carried out with the aim to assess the consumption of fast food in children who are overweight and obese and to provide counselling to the obese school children consuming fast food in Bhopal city.

The other objective was to assess the effect of nutrition counselling on fast food consumption and prevalence of obesity.

Material and Methods

The study was carried out in eight private schools selected purposively by taking two schools from four areas of new Bhopal city. A total of 240 children were selected for screening using

anthropometric measurements. Height and weight was recorded using standard procedures. Body Mass Index (BMI): was calculated using the standard formula: $BMI = \text{Weight}/\text{height}^2$. All the children having BMI more than 25 were selected for the study of fast food consumption pattern and counseling. 47 children in the age group of 13-15 years and 53 children in the age group of 15-19 years.

The Food Frequency Questionnaire (qualitative) was used to assess frequency of consumption of fast foods by children at pre and post stage of counselling. Children as well as their mothers were counselled for healthy food choices and detrimental effects of consuming fast foods on health.

Percentage was calculated for univariate variables and chi-square was used to find out the significance difference in pre and post data.

Results

Out of 240 children, 100 (41.67%) children were having BMI more than 25. Out of 100 selected overweight and obese children there were 54 were overweight and 47 were obese (fig. 1). Obesity was found more in children in the age group of 15-19 years as compared to 13-15 years (table 1).

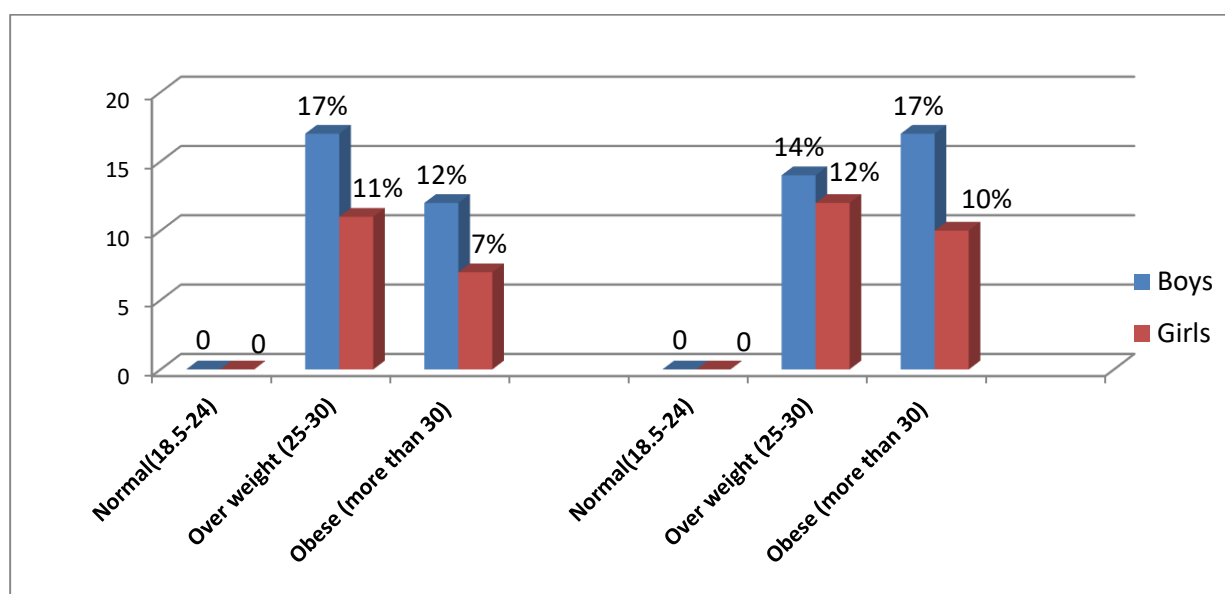


Fig. 1: Health status of children (both sex) on the basis of BMI

Table 1: Age wise and sex wise data of the sample population

Area No	Schools code	Children 13-15 year		Children 15-19 year		Total
		Boys	Girls	Boys	Girls	
Ward No. 21	SX1	5	4	4	4	17
	BF2	5	3	5	3	16
	Total children	10	7	9	7	33
Ward no. 03	KN3	4	2	3	1	10
	MF4	2	3	2	3	10
	Total children	6	5	5	4	20
Ward no. 42	RM5	3	2	4	2	11
	MT6	5	2	6	4	17
	Total children	8	4	10	6	28
Ward no. 44	BB7	3	1	3	2	9
	DP8	2	1	4	3	10
	Total children	5	2	7	5	19
Total		29	18	31	22	100

Knowledge regarding fast food in school children

The results indicated that about three fourth (73%) children were unaware of the harmful effects of fast food and the consequent risk of obesity as depicted in table 2. Children in the age group of 15-19 years have better knowledge about fast foods and their ill effects on health as compared to younger children.

Table 2: Knowledge regarding harmful effects of fast food in school children (both sex)

Knowledge regarding fast foods	No. of children 13-15 years	No. of children 15-19 years	Total
Yes	11	16	27
No	36	37	73

Counselling regarding healthy diet

Counselling of children was done regarding healthy diets, appropriate healthy food choices and harmful effects of fast food consumption. Children were advised for opting healthy food items when they eat away from home, avoid food rich in creamy layers, fried & fatty foods, fast foods etc. Advantage of eating fresh vegetables, fruits and healthy nuts was also communicated to them. They were recommended to avoid more intake of fast food as they are calorie dense and contain very less micronutrients. Counselling was given through lecture and demonstration.

Mothers were also counselled about offering variety of food and healthy recipes, a plate filled with plenty of brightly coloured vegetables, fruits and sprouts instead of fast food and of replacing high calorie food with low calorie food to their children. Healthy recipes booklet was given to mothers. Before counselling the intake of fast food was higher but after counselling it decreased significantly. Amongst the fast food preferred, pizza was most popular followed by Chinese food, burger and sandwiches.

Table 3: Effect of counselling on the frequency of fast food intake children

Frequency	Types of fast food	Total	
		Before	After
Once in a week	Pizza	7	18*
	Burger	4	12*
	Chinese foods	3	13*
	Sandwiches	1	8*
	Total	15	51
Twice in a week	Pizza	6	2*
	Burger	4	3 ^{NS}
	Chinese foods	5	7 ^{NS}
	Sandwiches	11	5*
	Total	26	17
3-4 times in a week	Pizza	5	4*
	Burger	7	3 ^{NS}
	Chinese foods	12	7*
	Sandwiches	6	4 ^{NS}
	Total	30	18
More than 4 times in a week	Pizza	11	5*
	Burger	6	3 ^{NS}
	Chinese foods	10	3*
	Sandwiches	2	3 ^{NS}
	Total	29	14

*- Significant
NS- Non-significant

Counselling was effective and useful, as fast food intake by the children decreased after counselling (table 3). A shift in the consumption of fast food from 4 times or 3-4 times in a week to twice or once in a week was observed after counselling.

Fig.2: Impact of counselling for the fast food intake by children 13-19 year (both sex)

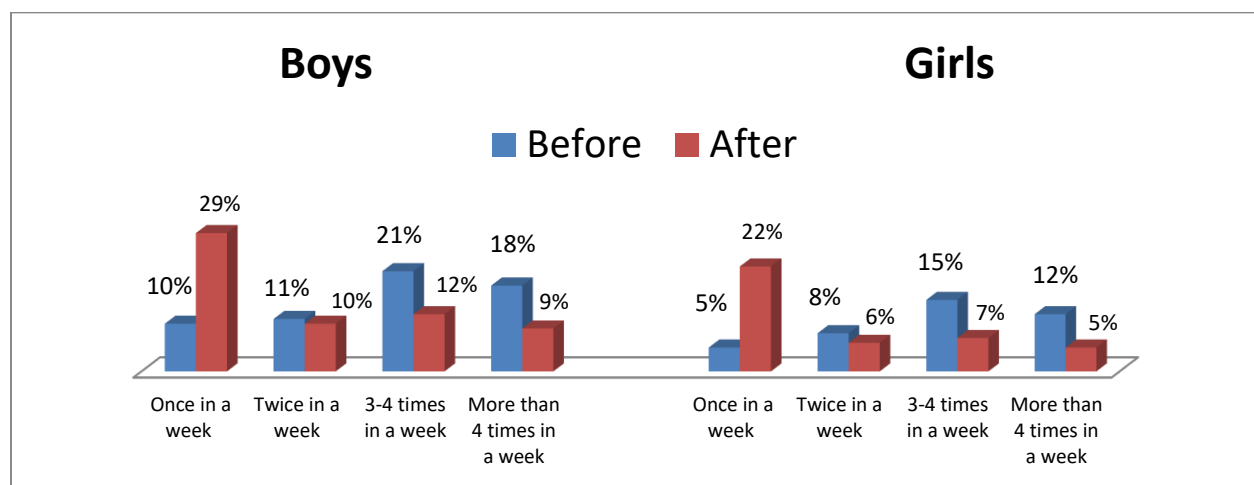


Table 4: Distribution of children (13-19 year boys) on the basis of their BMI after counseling

BMI category	Total children 13-15 years		Total children 15-19 years	
	Before	After	Before	After
Normal	-	15	-	10
Overweight	28	19	26	23
Obese	19	13	27	20
Total	47	37	53	53

A positive shift of obese children to overweight and overweight to normal category was observed in children due to counseling.

Fast food consumption was also high in obese children and overweight children. Apart from high consumption of fast foods, consumption of fat and calorie may be high. Low physical activity might be the other factor for obesity which needs to be explained in this group.

CONCLUSIONS

It can be concluded that consumption of fast food was very frequent in the subjects. They had very poor knowledge about the harmful effects of fast food and healthy diets. The effect of

counselling was found to be positive on the behaviour of subjects regarding fast food consumption.

REFERENCES

1. Munira Abdulrahman Almuhanha, Mohammed Alsaif, Muslim Alsaadi, and Ali Almajwal, Fast food prevalence of obesity, 2014 *Journal of the American Medical Association* 311(8):806–14. doi: 10.1001/jama.2014.732.
2. WHO. Obesity and Overweight Fact Sheet. Available at: <http://www.who.int/mediacentre/factsheets/fs311/en/> Accessed May12, 2014.
3. The second National Health and Nutrition Examination Survey, NHANES II Available at: <http://www.cdc.gov/nchs/nhanes/nhanesii.htm> Accessed May12, 2014.
4. Indian Fast Food market analysis, Aug. 2011.
5. Sarosta, FL, March 01, 2017 (globe newswire) Zion market research.