

# Factors Contributing To Overweight/Obesity Among School Children

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**Abstract:** 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. Overweight and obesity are major risk factors for a number of chronic diseases. Obesity in children and adolescents is gradually becoming a major public health problem in India. 'One-half of obese school children become obese adults. Obesity in childhood appears to increase the risk of subsequent morbidity. Significance of estimating prevalence of childhood obesity thus cannot be overemphasized.

**Aim:** The study aimed to identify the factors contributing obesity among school children in selected schools at Erode, TamilNadu

**Methods:** On experimental Case control design was used for the present study. A Sample of 100 was selected after screening the BMI among Children. MI with above 25 was assigned to cases and below 25 was assigned to controls based on the purposive sampling.

**Results:** Among the contributing factors Physical activity factor and Nutritional factors (OR=223.2., RR=15.6) were equally high risk for becoming overweight/obesity among school children. And fathers' education had significant level of association at  $p=0.002$  with factors contributing to overweight/obesity among school children.

**Keywords:** Overweight, Obesity, Contributing factors, Cases, Controls

## I. INTRODUCTION

Worldwide, obesity trends are causing serious public health concern and in many countries threatening the viability of basic health care delivery. It is an independent risk factor for cardiovascular diseases and significantly increases the risk of morbidity and mortality. Childhood obesity is a global phenomenon affecting all socio-economic groups, irrespective of age, sex or ethnicity. In the last few decades, obesity has become one of the most frequent nutritional diseases in the world, resembling a pandemic and being considered the 21st century disease. Obesity is a plurifactorial disease, its occurrence supposing multiple interactions among genetic, neuroendocrine, social, behavioral, psychological or a

combination of these, metabolic, cellular and molecular factors that lead to changes of the energetic balance.

At present, one can notice an increased tendency with an epidemic character of obesity and overweight frequency, which came to affect, on a world scale, approximately 20-25% of children and 45-50% of the teenagers. Previously considered to be bane of western affluent countries, now it has assumed epidemic proportions in India and China also.

Dramatic and rapid societal changes during the last decades have contributed significantly to childhood obesity. There is an increasing trend in the prevalence of obesity among both adults and children throughout India with certain urban and rural differences. Studies conducted in Chennai, Tamil Nadu (South India), among school children aged below 15 years have shown the increasing prevalence of obesity,

from 6.8% in 1998 to 12% in 2009. These studies have also reported that the prevalence was higher in the schools catering to children from affluent families compared to those from poor economic status, and overweight was more common among girls than boys. Such studies implicate that childhood obesity is an emerging health problem among the affluent urban Indian children

STATEMENT OF PROBLEM

A case control study on contributing factors of overweight/obesity among school children in selected schools at Erode, TamilNadu, India.

OBJECTIVES

- ✓ To identify the contributing factors of overweight /obesity among school children.
- ✓ To find out the association between the selected factors contributing to overweight/obesity among cases and control group children.
- ✓ To find out the association between the selected demographic variables and the contributing factors of overweight/obesity in cases and control group school children.

HYPOTHESES

H<sub>01</sub> There is no significant association between the selected contributing factors of overweight/obesity among cases and control group school children.

H<sub>02</sub> There is no significant association between the selected variables and contributing factors of overweight/obesity in cases and control group school children.

II. MATERIALS AND METHODS

The Quantitative Non experimental research approach and case control research design was used to identify the contributing factors of overweight/obesity among school children. Screening tool to identify the overweight/obesity and the structured questionnaire on contributing factors of overweight/obesity were developed by the researcher. Content validity was done by the experts in the field and reliability was done by test-retest method and r=0.87. Thorough purposive sampling technique, 50 cases and 50 controls were screened and selected for the study. Structured questionnaire were distributed and collected the data from the samples. And the data were analyzed by using descriptive and inferential statistics through SPPSS 20.

III. RESULTS

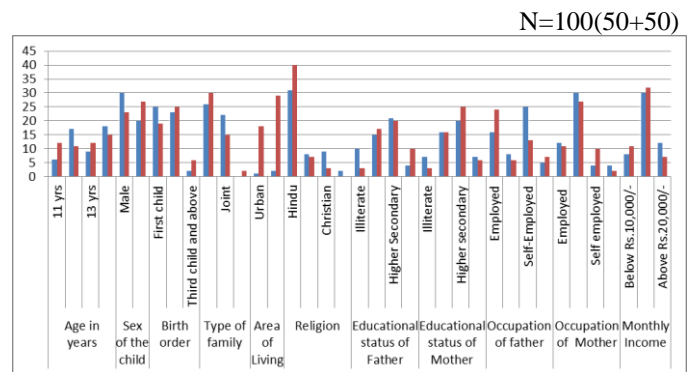


Figure 1

Fig 1: shows the frequency distribution of cases and controls. Among cases, majority 18 were in 14 years, male(25), were first born(20) belonged to nuclear family from rural area (31). fathers(21) and mothers (20) had higher secondary education. 21 fathers were self-employed and 30 mothers were unemployed. Their monthly income was between Rs.10,000/- to Rs.20,000/-.

Among controls, majorities 15 were in 14 years, 27 were female, 25 were second born, 30 from nuclear family and from rural area respectively. Majority of the fathers (20) and mothers (25) had higher secondary education. 24 fathers were employed and 27 mothers were unemployed and their monthly income was between Rs.10,000/- to Rs.20,000/-. Both the groups were comparable.

N=50=50

Contributing Factors	Group	Level of Factors				Chi Square	Odds Ratio
		High		Low			
		f	%	f	%		
Nutritional factors	Cases(50)	49	98.0	1	2.0	$\chi^2=65.68$ Df=1	223.2
	Control(50)	9	18.0	41	82.0		
Familial factors	Cases(50)	43	86.0	7	14.0	$\chi^2=30.13$ 6 df=1	13.05
	Control(50)	16	32.0	34	68.0		
Environmental Factors	Cases(50)	44	88.0	6	12.0	$\chi^2=44.0$ df=1	26.0
	Control(50)	11	22.0	39	78.0		
Physical Activity Factors	Cases(50)	49	98.0	1	2.0	$\chi^2=65.68$ Df=1	223.2
	Control(50)	9	18.0	41	82.0		
Leisure Activity	Cases(50)	44	88.0	6	12.0	$\chi^2=34.76$ df=1	17.1
	Control(50)	15	30.0	35	70.0		
Psychological Factors	Cases(50)	18	36.0	32	64.0	$\chi^2=18.77$ df=1	27.5
	Control(50)	1	2.0	49	98.0		
Overall	Cases(50)	47	94.0	3	6.0	$\chi^2=77.4$ df=1	245.4
	Control(50)	3	6.0	47	94.0		

Table 2: Comparison of level of contributing factors of overweight/obesity among school children between cases and controls

Table 2 shows, majority 47(94%) of School children in the cases and 3(6%) in the controls had the high risk of contributing to overweight/obesity and there was a significant association with cases at p<0.001 and 245 times the selected factors contribute to overweight/obesity. Among the contributing factors physical activity and nutritional factors had equal risk (OR =223.2) to contribute to overweight and obesity.

Demographic Variables	Components	Low ( 50 % and less)		High (More than 50%)		Chi Square
		f	%	f	%	
Age in years	11 yrs	0	0	6	12.0	$\chi^2=5.674$ , df=3 P=0.129 NS
	12 yrs	0	0	17	34.0	
	13 yrs	2	4.0	7	14.0	
	14 yrs	1	2.0	17	34.0	
Sex of the child	Male	3	6.0	27	54.0	$\chi^2=2.128$ ,df=1 P=0.145, NS
	Female	0	0	20	40.0	
Birth order of the child	First child	1	2.0	24	48.0	$\chi^2=0.601$ df=2 P=0.740
	Second child	2	4.0	21	42.0	

	Third and above	0	0	2	4.0	NS
Type of family	Nuclear	1	2.0	25	50.0	$\chi^2=0.714, df=2$ $p=0.700$ NS
	Joint	2	4.0	20	40.0	
Area of Living	Extended	0	0	2	4.0	$\chi^2=0.030, df=1$ $P=0.864$ .NS
	Urban	1	2.0	18	36.0	
Religion	Rural	2	4.0	29	58.0	$\chi^2=1.066, df=3$ $P=0.785$ NS
	Hindu	2	4.0	29	58.0	
	Muslim	0	0	8	16.0	
	Christian	1	2.0	8	16.0	
Educational status of Father	others	0	0	2	4.0	$\chi^2=15.383$ $df=3$ $P=0.002$ S
	Illiterate	0	0	10	20.0	
	Primary	0	0	15	30.0	
	Higher Secondary	1	2.0	20	40.0	
Educational status of Mother	Degree and above	2	4.0	2	4.0	$\chi^2=1.336$ $df=3$ $P=0.721$ NS
	Illiterate	0	0	7	14.0	
	Primary	1	2.0	15	30.0	
	Higher secondary	1	2.0	19	38.0	
Occupation of father	Degree and above	1	2.0	6	12.0	$\chi^2=3.732$ $df=3$ $P=0.292$ NS
	Employed	0	0	16	32.0	
	Unemployed	0	0	8	16.0	
	Self-Employed	2	4.0	19	38.0	
Occupation of Mother	Coolie	1	2.0	4	8.0	$\chi^2=0.650$ $df=3$ $p=0.885$ NS
	Employed	1	2.0	11	22.0	
	unemployed	2	4.0	28	56.0	
	Self employed	0	0	4	8.0	
Monthly Income	coolie	0	0	4	8.0	$\chi^2=1.093$ $df=2$ $P=0.579$ NS
	Below Rs.10,000/-	1	2.0	7	14.0	
	Rs.10,000 – Rs.20,000	1	2.0	29	58.0	
	Above Rs.20,000/-	1	2.0	11	22.0	NS

Table 3: Association between the contributing factors of Overweight/ obesity and the selected Demographic variables among school children in cases

Table 3 shows educational status of the father had significant association with the factors contributing to overweight/obesity at  $p=0.002$  level. No other demographic variables were significant.

#### IV. DISCUSSION

Overweight and obesity among children were increasing in trend both in urban and rural areas of India. Many studies have undertaken in metro cities than the other urban settings of India. Hence the study was undertaken to assess the factors contributing to overweight/obesity among school children. Among the contributing factors, Physical activity factor and Nutritional factors (OR =232.2) had equally high risk of contributing to overweight/obesity followed by psychological factors (OR=27.5), Environmental factors (OR=26.0), Leisure activity factor (OR=17.1), familial factors

(13.05). Among demographic variables educational status of the father was significant with overweight/obesity among cases. The above findings were supported by many studies done in India. Further studies should focus on group interventions at school and community level.

#### V. CONCLUSION

The findings of the preset study revealed that physical activity factors and nutritional factors had equal highest significant to develop overweight/obesity among school children than the other factors contributing to overweight and obesity. Children in cases groups had 15.6 times increased risk of developing overweight/obesity than the controls.

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