

THE PREVALENCE OF OVERWEIGHT /OBESITY AMONG SCHOOL CHILDREN.

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ABSTRACT

Childhood obesity has become a major public health challenge in developing countries including India due to the changes in the lifestyle and food habits of children owing to the influence of urban culture and technological growth. The present study is a cross-sectional, school-based study conducted to assess the prevalence of obesity and to determine the demographic variables influencing the obesity among school children.

KEYWORDS

obesity, body mass index, school children, socio economic status

INTRODUCTION

During childhood, a person's mind, emotions, body, and sex all undergo rapid changes and development. Ensuring proper nutrition throughout infancy is crucial for the normal development of children and adolescents. Therefore, nutritional status throughout life is an essential factor to consider. The physical, psychological, and monetary costs associated with obesity are substantial, and the epidemic is only getting worse. Obesity has been much more common in the last few decades, and all signs point to this trend continuing in both industrialized and developing nations. Obesity in children is a major risk factor for obesity in adults, making it a possible public health concern. Risk factors for cardiovascular disease, including hypertension, diabetes mellitus, and dyslipidemia, are all increased in children who are overweight as children, and this trend continues into adulthood. The word "globesity" is used by the World Health Organization (WHO) to highlight the 'escalating worldwide pandemic of overweight and obesity,' and the organization views obesity as "one of today's most blatantly visible, yet most neglected public health problems."

Exceptional flexibility and population variation define human development and growth. Both procedures culminate in exposures to many environmental factors, including geo-climatic, socio-economic, and cultural factors, which influence the manifestation of a person's genetic potential. There is probably going to be a complicated and changeable pattern to the developmental "signals" in body proportions. Many variables, both genetic and environmental, combine to affect body proportions. Many populations have seen significant secular shifts in both height and body proportions. There has been a marked change in the appearance of teenagers during the last forty years. One noticeable change is that they have

grown taller. Since the early 1970s, the average height of children and adolescents has increased by 2.5 cm compared to their peers.

LITERATURE REVIEW

Prevalence of overweight and obesity among school children

Thomas (2021) Changes in children's eating and living habits brought about by urbanization and technological advancement have made childhood obesity a serious problem in emerging nations like India. To evaluate the extent to which school-aged children are overweight and to identify the demographic factors impacting this epidemic, the current research used a cross-sectional design. Methods: Two randomly chosen schools in Mysuru city, Karnataka, participated in the research, with 440 pupils total (240 males and 200 girls).

Mangrola (2024) Because of changes in eating habits and exercise habits, adolescent obesity is on the rise, which has serious consequences, such as an increase in the prevalence of chronic illnesses. The first critical step in avoiding and regulating the fast growth of teenage obesity is to identify the risk factors. Consequently, Rajkot was the site of this investigation. The major goal was to determine the rate of obesity and the factors that contribute to it among school-aged adolescents (14–19 years old). With the use of a multistage sampling technique, researchers conducted a cross-sectional study among school-aged teenagers.

Badawi (2013) While industrialized nations have the worst rates of childhood obesity, emerging nations are also seeing alarming increases. Objectives Using body mass index (BMI) as a metric, we want to determine the frequency of overweight and obesity among students in elementary school (ages 6–12) and the variables that put them at risk for developing these conditions.

Twinomugisha (2024) Obesity and overweight in children is becoming an increasingly urgent issue in public health across the world. Obesity and excess weight are common in sub-Saharan Africa. Obesity and excess weight are major health problems in Uganda. Primary school students in Southwestern Uganda were the subjects of this research, which aimed to quantify the extent to which they are overweight or obese and identify the variables that contribute to this health problem. The data for this cross-sectional investigation came from anthropometric instruments and a self-administered questionnaire.

RESEARCH METHODOLOGY

A research technique is an approach to methodically resolving the issue. It takes into account the reasoning behind the research methodologies as they pertain to the study. Important to every study, methodology allows the researcher to map out the specific steps that will be used to gather data.

Parental Variables

Family monthly income, father's occupation, mother's occupation, and both parents' levels of education were included as parental factors in this research.

Clinical Variables

Birth weight, history of breastfeeding, gestational age, type of conception, dietary preferences, and history of gestational diabetes were the clinical factors included in the research.

Research Setting

Selected schools in Indore were the sites of the research. Two Indore institutions: Academic Heights Public School (APHS) and Emerald Heights International School.

Sample

It stands in for the intended audience as a whole.

Students meeting inclusion requirements and weighing between 6 and 12 years old were included.

Sample Size Estimation

Power analysis was used to determine the sample size before the investigation started. The projected number of participants for each group was 125. The researcher picked 150 people from each group in anticipation of the dropouts.

Sample Size

A total of 150 overweight or obese school-aged children (ranging in age from 6 to 12) were included in the research group, while a similar number were used as a control. Due to accidents, illnesses, transfers, and irregularities with the exercise regimen, four samples from the control group and six samples from the research group dropped out. So, 136 people made up the control group and 134 people made up the research group.

ANALYSIS

The data was input and analyzed using SPSS-20 version. Following the study's goals and hypotheses, the analyzed data was grouped and tabulated.

Table 4: Frequency and Percentage Distribution of Overweight and Obesity among School Children Pertaining to Gender and Age.

Age in	Overweight	Obese
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years	Girls		Boys		Girls		Boys	
	f	%	f	%	f	%	f	%
11	14	4	6	1.8	3	0.9	5	1.5
12	29	8.6	18	5.3	12	3.5	7	2
13	40	11.8	29	8.6	25	7.4	17	5
14	46	13.6	37	10.9	29	8.6	22	6.5

Table 4 displays the prevalence and percentage breakdown of overweight and obesity among school-aged children, broken down by gender (Boys and Girls) and age group (6-12 years). Among girls (11.8%) and boys (10.9%) between the ages of 13 and 14, the prevalence and percentage distribution of overweight were found to be high. Similarly, when looking at females aged 13–14 and boys aged 5–14, the prevalence of obesity was 7.4% and 8.6%, respectively. In addition, when comparing boys and girls between the ages of 13 and 14, it is clear that females have a greater incidence of overweight and obesity.

Table 5: Comparison of BMI between Girls and Boys among Overweight/Obese School children.

Gender	Mean	SD	't'	p value
Girls	28.830	3.009	0.9596 df=337	0.3379
Boys	29.150	3.050		p > 0.05

Table 5 demonstrates that there was no statistically significant difference in the mean body mass index (BMI) between females (M=28.830, SD=3.009) and boys (M=29.150, SD=3.050).

Table 6: Frequency and Percentage Distribution of Demographic Variables in Control and Study Group of Overweight/Obese School Children.

Demographic Variables	Components	Control Group (136)		study Group (n=134)		χ ²	p value
		f	%	f	%	0.809 df=3	0.847
Age of the	11 years	11	7.9	9	6.5		

child in completed years	12 years	29	21.4	24	17.7		
	13 years	42	31	42	31.5		
	14 years	54	39.7	59	44.4		
Gender	Female	76	56.3	85	63.7	9.484 df=1	0.002
	Male	60	43.7	49	36.3		
Religion	Christian	23	15.1	16	12.1	0.045 df=2	0.977
	Hindu	94	73	112	83.9		
	Muslim	19	11.9	5	4		
Area of living	Urban	111	88.1	127	95.2	1.047 df=1	0.306
	Rural	15	11.9	6	4.8		
Birth order of the child	1st	54	42.9	65	48.4	0.079 df=2	0.961
	2nd	68	54	62	46		
	3rd	4	3.2	7	5.6		
	None	15	11.9	16	11.9		
Number of siblings	1	107	84.9	113	84.7	0.561 df=2	0.755
	2	4	3.2	7	5.6		
Type of family	Nuclear	89	70.6	100	75	0.438 df=1	0.508 p>0.05
	Joint	37	29.4	34	25		
Parenting Style	Parents with strict rules and high expectations	60	44.4	47	35.4	0.406 df=3	0.939 p>0.05
	Parents are responsive not demanding	44	33.3	52	38.7		

	Parents are demanding not responsive	20	14.3	26	19.4		
	Parents with no due care	12	7.9	8	6.5		

Table 6 shows that most of the children in the study group were girls (63.7% vs. 39.7%), lived in urban areas (95.2% vs. 88.1%), were first-born (48.4% vs. 54%), belonged to a nuclear family (75% vs. 70.6%), were Hindu (83.9% vs. 73%), and whose parents were responsive but not demanding (38.7% vs. 44.4%). With the exception of gender, whereby both groups had more females, no significant difference was found ($p>0.05$) between the two sets of data. As a result, there was little difference between the two groups.

Table 7: Frequency and Percentage Distribution of Parental Variables in Control and Study Group of Overweight/Obese School Children.

Demographic Variables	Components	Control Group (136)		study Group (n=134)		χ^2	p value
		f	%	f	%	0.879 df=3	0.830
Education of Father	School level	6	4.8	5	4		
	Diploma level	4	3.2	3	2.4		
	Under graduate	74	54.8.	80	59.7		
	Post graduate	51	37.3	44	33		
Education of Mother	School level	12	8.7	12	8.9	0.062 df=3	0.995
	Diploma level	2	1.6	6	4.8		
	Under graduate	84	61.9	95	71		
	Post graduate	38	27.8	20	15.3		

Occupation of father	Service in government	68	50	42	31.5	1.332 df=3	0.721
	Service in private	38	27.8	23	16.9		
	Agriculture	26	19	49	36.3		
	Home Maker	4	3.2	20	15.3		
Occupation of Mother	Service in government	101	74.6	88	66.1	2.559 df=3	0.464
	Service in private	34	25.4	19	14.5		
	Agriculture	0	0	18	13.7		
	Home Maker	0	0	7	5.6		
Monthly income	Rs.20000-30,000/-	1	0.8	0	0	0.755 df=3	0.860
	Rs.30000-40,000/-	12	8.7	14	10.5		
	Rs.40000/- and above	47	34.9	46	34.7		
	Rs.40000/- and above	76	55.6	73	54.8		

Both the control and study groups' fathers were undergraduates (59.7% and 54.8%, respectively), and the majority were self-employed or in business (50% and 31%), according to Table 7. The majority of the moms had degrees (71%, 61.9%), were housewives (74.6%, 66.1%), and earned more than Rs.40,000/-per year. According to the chi-square test, when it came to the paternal factors, both groups were quite similar and homogeneous.

Table8: Frequency and Percentage Distribution of Clinical Variables in Control and Study Group of Overweight /Obese School Children.

Demographic	Components	Control Group	study Group	χ^2	p
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Variables		(136)		(n=134)			value
		f	%	f	%	0.376 df=1	0.539
History of gestational diabetes	Yes	5	4	9	6.5		
	No	130	96	125	93.5		
Nature of Conception	Natural Method	133	97.6	124	92.7	0.071 df=1	0.789
	Assisted Method	3	2.4	10	7.3		
Gestational age at birth of the child	Full term	122	89.7	120	89.5	0.002 df=2	0.999
	Pre term	11	7.9	12	8.9		
	Post term	3	2.4	2	1.6		
Birth Weight of the child	Low birth weight (below 2.5kg)	18	13.5	7	5.6	0.094 df=2	0.954
	Normal (2.5-3.5kg)	116	85.7	124	92.7		
	Increased birth weight (more than 3.5 kg)	1	0.8	2	1.6		
Breast feeding history for the first six months	Breast fed	46	34.1	51	37.9	0.0002 df=2	0.999
	Bottle fed	17	12.7	0	0		
	Both	72	53.2	83	62.1		
Dietary preferences	Vegetarian	11	7.9	13	9.7	0.746 df=2	0.686
	Non vegetarian	119	87.3	117	87.1		
	Eggetarian (take egg along with	6	4.8	4	3.2		

	vegetarian)						
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The majority of the schoolchildren in both the control and study groups did not have a history of gestational diabetes (93.5% and 96%, respectively). They were born full term (89.5% and 92.7%, respectively), had normal birth weights (85.7% and 92.7%), were breastfed or given a bottle (62.5% and 53.2%, respectively), and favored non-vegetarian diets (87.1% and 87.3%, respectively). The research group of overweight and obese schoolchildren did not show any significant connection with the control group. Therefore, it was possible to compare the two groups since they were similar in nature.

CONCLUSION

Throughout the study, it incorporates methodical exercises. The ancient Egyptians saw fat as a medical condition. Obesity was first recognized as a medical problem by the Greeks. "Corpulence is not only a disease itself, but the harbinger of other," Hippocrates noted. The epidemic of childhood obesity is now being addressed on a worldwide scale. The growing number of children who are overweight or obese, as well as the health problems that come along with it, need intensive measures to curb this epidemic. An active exercise program, food modification, and counseling are the three components that should be included in any successful weight loss program for school-aged children. In order to lower body mass index (BMI) among overweight and obese schoolchildren, the present research takes all three factors into account and employs suitable treatments. "Assess the Effectiveness of School Based Interventions on the Level of BMI among Overweight / Obese School Children" was the purpose of this research.

This study employed a quantitative methodology and a quasi-experimental design with a control group and a study group that each took a pre- and post-test. This research set out to Experts verified the tools that the researcher had built, and the researcher included their comments and recommendations into the final version. The test-retest technique was used to analyze and quantify dependability for stability, while Cronbach's Alpha was utilized for internal consistency. Both methods were determined to be extremely trustworthy. Age, sex, religion, location, sibling count, parenting style, family type, and birth order are all examples of demographic characteristics.

Parental factors in this research include father's education level, mother's education level, father's occupation, mother's occupation, and family income on a monthly basis.

The study's clinical variables include a range of factors, including dietary preferences, history of breastfeeding, gestational age, nature of conception, birth weight, and history of gestational diabetes

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