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Assessment of prevalence of obesity among children of known population: An observational study

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Abstract

Background: Overweight and obesity primarily happen either due to excess calorie intake or insufficient physical activity or both. Hence; we planned the present study to assess the prevalence of obesity among children of known population.

Materials & methods: A total of 400 school going children under the age of 15 years were screened during this period. Complete demographic and clinical details of all the subjects were obtained. Weight, height and BMI details of all the subjects were recorded. The BMI cutoff points recommended by the International Obesity Task Force were used to define overweight and obesity.

Results: Overall prevalence of obesity in the present study was 20 percent. Significantly higher prevalence of obesity was observed in males in comparison to females. Also significantly higher prevalence of obesity was seen in children above 12 years of age.

Conclusion: Obesity is a health problem affecting a significant proportion of population. Hence; adequate screening programmes are recommended for increasing awareness among general population about adverse effects of obesity.

Keywords: Obesity, Paediatric, Prevalence

Introduction

Overweight and obesity primarily happen either due to excess calorie intake or insufficient physical activity or both. Furthermore, various genetic, behavioural, and environmental factors play a role in its pathogenesis [1-3]. Childhood obesity is a forerunner of metabolic syndrome, poor physical health, mental disorders, respiratory problems and glucose intolerance, all of which can track into adulthood [4]. Developing countries like India have a unique problem of 'double burden' wherein at one end of the spectrum we have obesity in children and adolescents while at the other end we have malnutrition and underweight [5]. Hence; under the light of above mentioned data, we planned the present study to assess the prevalence of obesity among children of known population.

Materials & Methods

The present study was conducted in the department of paediatric medicine of the medical institute and it included assessment of prevalence of obesity among children of known population. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the subjects after explaining in detail the entire research protocol. A total of 400 school going children under the age of 15 years were screened during this period. Complete demographic and clinical details of all the subjects were obtained. Weight, height and BMI details of all the subjects were recorded. The BMI cutoff points recommended by the International Obesity Task Force were used to define overweight and obesity [5-6]. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi-square test was used for assessment of level of significance.

Results

Analysis of a total of 400 school going children was done in the present study. Mean age of the children of the present study was 13.7 years. There were 225 males and 175 female subjects in the present study. Overall prevalence of obesity in the present study was 20 percent. Significantly higher prevalence of obesity was observed in males in comparison to females. Also significantly higher prevalence of obesity was seen in children above 12 years of age.

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In comparison to females. Also significantly higher prevalence of obesity was seen in children above 12 years of age.

Discussion

Childhood obesity increases the risk of obesity in adulthood and is associated with cardiovascular disease risk factors such as hypertension, diabetes and dyslipidemia. Unfortunately, the worldwide prevalence of childhood overweight and obesity has increased dramatically during the past decades, both in developing and developed countries. Recent reports indicated that the increase in childhood obesity is much more rapid in developing countries than in developed countries [7-9]. Analysis of a total of 400 school going children was done in the present study. Mean age of the children of the present study was 13.7 years. There were 225 males and 175 female subjects in the present study. Krassas GE *et al.* investigated the prevalence of overweight and obesity among children and adolescents in the city of Thessaloniki, and evaluate the trends in Greece by comparing our results to those of other cross-sectional studies. Data concerning the height and weight of 2,458 schoolchildren aged 6 to 17 years (1,226 6-10 years, 1,232 11-17 years) of 27 primary and secondary public schools were collected. BMI was calculated from the two measurements. In the analyses, the estimations of the prevalence of overweight and obesity are based on recently established international BMI percentile curves and cut-off points from 2-18 years. To investigate the secular trends in obesity in Greece, data of schoolchildren from four successive surveys were used. In the younger group (6-10 yr), the prevalence of overweight and obesity were 25.3% and 5.6%, while for adolescents (11-17 yr) they were 19.0% and 2.6%, respectively. The prevalence was 25.9% and 5.1% for all males, and 19.1% and 3.2% for all females, respectively. As far as trends are concerned, an increase of BMI was found among males when the results of our survey were compared with those of the previous three. However, the trends for girls are different. An increase was found when the results of our study were compared with 1942. A decrease of BMI at most ages was found when the results of our study were compared with those of the 1982 survey, while an increase was recorded only for younger girls below 13 years compared to the 1984-5 study. This study demonstrated that the prevalence of overweight and obesity among schoolchildren is 22.2% and 4.1%, respectively, and has been increasing in the last decades, especially among boys [10].

Overall prevalence of obesity in the present study was 20 percent. Significantly higher prevalence of obesity was observed in males in comparison to females. Also significantly higher prevalence of obesity was seen in children above 12 years of age. In another study conducted by Krassas GE *et al.* authors investigated the prevalence of overweight and obesity among children and adolescents in the city of Thessaloniki, Greece and in the Kayseri area of Turkey and compare the results. For this purpose, data concerning the weight and height of 2458 Greek school children aged 6-17 years (1226 6-10 years, 1232 11-17 years) and 3703 Turks (1032 6-10 years, 2671 11-17 years) were collected. BMI was calculated. The prevalence of overweight Greek schoolchildren was 22.2% while that of Turks was 10.6%. The obesity prevalence was 4.1% and 1.6%, respectively (total overweight and obese children

26.3% and 12.2%, respectively). In the analyses, the estimations of the prevalence of overweight and obesity are based on the international BMI percentile curves and cut-off points in subjects aged 2-18 years recently established. A significant gender difference was found, males being more overweight and obese compared to females. Finally, the prevalences for both Greeks and Turks were higher in children when compared to adolescents. In conclusion, Greece (as represented by the Thessaloniki area) has one of the highest prevalences of overweight schoolchildren recorded in Europe while Turkey one of the lowest recorded among developed and developing countries [11].

Table 1: Demographic data

Parameter		Number of patients	Percentage
Age group (years)	Less than 10	150	37.5
	10 to 12	102	25.5
	More than 12	148	37
Gender	Males	225	56.25
	Females	175	43.75

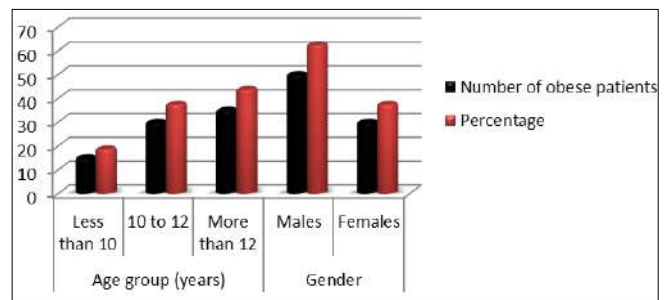
Table 2: Overall prevalence of obesity

Parameter	Number of patients	Percentage
Obese patients	80	20

Table 3: Age-wise and gender-wise prevalence of obesity

Parameter		Number of obese patients	Percentage	p-value
Age group (years)	Less than 10	15	18.75	0.04*
	10 to 12	30	37.5	
	More than 12	35	43.75	
Gender	Males	50	62.5	0.03*
	Females	30	37.5	

*: Significant



Graph 1: Age-wise and gender-wise prevalence of obesity

Conclusion

Under the light of above obtained data, the authors conclude that obesity is a health problem affecting a significant proportion of population. Hence; adequate screening programmes are recommended for increasing awareness among general population about adverse effects of obesity.

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