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Assessment of dietary habits and lifestyle patterns of overweight and obese children of a private school in Jaipur city

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Abstract

Childhood obesity is a major global concern now-a-days with little evidence for effective prevention strategies. Obesity is a condition that is associated with having an excess of body fat, defined by both genetic and environmental factors. Childhood obesity is a medical condition in which weight and height does not change proportionally as the children develop. If a child or adult stores too much fat they are classified as overweight or obese. If left unchecked, these children are more likely to become obese adults.

Childhood obesity has emerged as an epidemic in developed countries during the last quarter of the 20th century. According to National Health and Nutrition Examination Survey, between two-third and one-half of Indian adolescents are clinically obese. This study examines the impact of dietary food habits on childhood obesity. Understanding the psychosocial consequences of obesity in target communities will enable future interventions to be appropriately designed.

The present study deals with the assessment of the dietary habits and lifestyle pattern of overweight children; a quantitative analysis of routine food items consumed by children and a qualitative analysis that explores the aspect of preferences of food and doing things in free time as chosen by children. Information was gathered 100 school children of private school. The data was collected using a structured questionnaire schedule consisting of questions related to general profile, anthropometry, dietary survey, lifestyle pattern, bio clinical examination.

The collected data reported that 27% of adolescent's children under study fall into obese category, while 29% found to be overweight. The qualitative data was based on the preference of food items by children, their social involvement, their knowledge on the subject of obesity, the influence of socioeconomic status and lack of physical activity could be the cause of obesity. Later it was found that the above mentioned criteria played a significant role in gaining weight of adolescent children.

Keywords: Overweight, adolescents, dietary habits, lifestyle

1. Introduction

Obesity has emerged as the most serious public health in the present time. It is associated with reduced quality of life, development of serious conditions, increased medical care costs, and premature death. It is most prevalent disorder and is the result of energy imbalance leading to an increased storage mainly as fat. Kopelman (2000) suggested that overweight and obesity is now common among children within the world population. Childhood obesity is regarded as serious ailment that threatens global wellbeing (WHO, 2000). The prevalence of overweight and childhood obesity is increasing in most of the population in the world, affecting children, adolescent and adults. Presently it is estimated that more than 250 billion people worldwide are affected by obesity equivalent to 7 percent of adolescents and adult population. To measure obesity BMI is used as a tool. Obesity is classified as having a Body Mass Index (BMI) of 30 or greater. When children are off the healthy weight trajectory, their weight gain is disproportionate to their change in height, meaning the gain of body fat that can negatively impact his or her healthy development and health overall. If a child or adult stores too much fat they can be classified as overweight or obese. By monitoring children's growth more effectively we can identify children who are at risk for poor health related to childhood obesity. Obesity during childhood can have a harmful effect on the body in a variety of ways. Children who are obese have a greater risk of High blood pressure and high cholesterol, which

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are risk factors for cardiovascular disease (CVD), increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes, breathing problems, such as sleep apnea, and asthma, joint problems and musculoskeletal discomfort, fatty liver disease, gallstones, and gastro-esophageal reflux (i.e., heartburn), psychological stress such as depression, behavioural problems, and issues in school, low self-esteem and low self-reported quality of life, impaired social, physical, and emotional functioning.

2. Methodology

This study was conducted in a private school of Jaipur city. A written consent for the study was taken from the school. 100 adolescent children both male and female in the age group of 10-17 yrs. were selected. The students were explained the purpose of the study. A list of children was prepared with the help of school data and then, through random sampling method subjects were selected. The data of the selected individuals was collected using a structural questionnaire consisting of questions related to general profile, anthropometry, dietary & lifestyle pattern.

The weight, height, waist circumference and hip circumference was measured using standard tools and techniques. For measuring the weight weighing instrument was used and it was calibrated to assure that they are measuring correctly and accurately. For measuring the height measuring tape was used. The Body Mass Index of each subject was calculated afterwards using height and weight measurements. Further, based on their BMI, they were categorized under different classes of overweight/obesity. The BMI classification, given by WHO year 2000 was used for the present study. BMI was calculated using the formula,

$$\text{BMI} = \text{weight}/(\text{height})^{[2]}$$

Dietary survey of the selected subjects was carried out using a self-structured questionnaire to find out their dietary pattern, food habits and dietary intake. The data on dietary pattern included information about various meals consumed in a day, menu structure of each meal, details of missed meals and number of times food consumed outside home. The data on factors affecting lifestyle pattern of the subjects, sleeping and resting hours, recreational hours, socialization of the subjects was collected and questions related to this were asked.

The information about food habits of the subject was taken using Food Frequency Questionnaire which helped in finding the food consumption frequency (daily, weekly, monthly, rarely, occasionally), consumption frequency of high calorie food, vegetarian and non-vegetarian food habits, fasting habits and types of fasting foods.

3. Results & Discussion

Childhood obesity is a complex health issue. It occurs when a child is well above the normal or healthy weight for his or her age and height. The main causes of excess weight in youth are similar to those in adults, including individual causes such as behaviour and genetics. Behaviours can include dietary patterns, physical activity, inactivity and other exposures. Data was gathered using questionnaires which had questions on general profile, eating and lifestyle patterns. The sample was selected from a school. A total of 100 adolescent students were selected, including both girls and boys in equal ratios.

A. Anthropometric measurements

BMI was calculated after knowing height and weight of the 100 subjects, using the formula $\text{BMI} = \text{weight}/(\text{height})^2$

Weight status category

Weight status category	Percentile range	Frequency		% Total	
		Boys	Girls	Boys	Girls
Underweight	Less than the 5 th percentile	6	10	6	10
Normal weight	5 th percentile to less than 85 th percentile	15	13	15	13
Overweight	85 th to less than 95 th	15	14	15	14
Obese	95 th percentile and greater	14	13	14	13

The collected data showed that 27% of the adolescents' children were in the category of obese out of which, 14% were boys and the rest were girls, while 29% found to be overweight (85th to 95th percentile), of which 15% were boys and 14% were girls.

B. Physical activity of Children

Involvement in any physical activity is very important in reducing weight. Most of the school going children don't go out for morning walk but some were actively involved in school's co-curricular activities. Only 46% children were involved in playing games either at school or home. Out of which, 62% preferred playing outdoor games while the rest 38% preferred playing indoor games with their friends and family members. Children who did not like or couldn't play any games because of homework pressure or tuitions were 54%.

C. Leisure time activities

After coming from school and before going to school the time left with children is important in assessing what activity they do in that free time. If they go for tuitions, watch television, study, or go for walk, swimming, dance etc. became

important to know. Questions in the questionnaire were framed and it was found that 58% of the children were undertaking any of the physical activity like dance, swimming, volley ball, badminton etc. 24% of them were going to tuitions while 18% of them were not formally involved in any of the activity.

D. Dietary habit & pattern

• Dietary habits

The frequency of consumption of non-vegetarian food was assessed and it was found that out of the 100 adolescent children, 63% were found to have a vegetarian diet pattern; whereas the other 47% were meat and egg eaters.

Among the non-vegetarian children, it became important to know how often they were consuming non-vegetarian food. 27.9% were found to be following non-vegetarian food almost daily in their diet. 20.95% of the children used to have it fortnightly, 37.2% of the non-vegetarian eaters have non-veg. in their diets almost twice a week. While 13.9% of the whole non-vegetarian genre consume it rarely on occasions such as parties and get together.

Frequency of consumption of non-vegetarian food

Frequency of consumption of non-vegetarian food	Number of children	Percentage of children%
Daily	12	27.9
Fortnightly	9	20.9
Twice a week	16	37.2
Rarely	6	13.9

• Dietary patterns

When it comes to preference, children become quite choosy and fussy with their eating habits. So it becomes important to know what kind of food they actually want to have. While collecting data when checklist was given it was found out that 38% of the children were having tiffin and other home made products almost daily. While 62% of the children were found to be fond of junk food as they chose more than one option when asked to choose between the kinds of food they relish the most. Ready to eat food products are also liked by kids these days. As such foods are ready to prepare and easy to make, for parents and for adolescents it becomes easy to depend on them. 48% of the total subjects ticked the option for fruits. Fruits and junk are easy to be taken by those children as nowadays mothers are also working and it becomes convenient to pick one up.

E. Food Frequency Questionnaire

The data was further collected using food frequency questionnaire that had a limited checklist of foods and beverages with a frequency response section for subjects to report how often each item was consumed over a specified period of time. Filling a food frequency questionnaire gives an idea to a person's liking for a particular food, or how often a person consumes it. With the data it was found that almost all of the children consumed cereals on daily basis, 58% consumed pulses daily while the rest consumed it either twice or thrice in a week. Vegetables were consumed on daily basis by more than 74% of the children, the rest took it either twice or thrice a week. Milk was consumed daily by 80% of the children, twice or thrice by 12%, fortnightly and rarely by 6% of them. Fast food was taken on a daily basis by 48%, twice or thrice a week by 38%, the rest of the 14% took it either fortnightly or rarely.

4. Conclusion

This study broadly focused on childhood obesity; its prevalence across the city and around India, as well as the cause and consequences related to children's health. Specific attention was given to studies presenting data on current diagnosis, management and treatment strategies. Many of the studies identified unique factors which may be linked to the dietary pattern of children's weight and associated comorbidities.

Based on the results of the study it can be concluded that more than half of the children had weight above normal; it showed that children nowadays are moving towards the category of being obese which result in other medical conditions, like heart diseases, hypertension etc. Physical activity is important in reducing overweight and obesity cases. But in the present study it was observed that involvement of children in any vigorous physical activity or any activity at all was thus necessary to know. One of the reasons influencing a person's dietary habit is based on his/her liking or preference for a particular food. The adolescent children these days like to have ready to eat food or junk food, some of them had their favourites as vegetable

rolls, wraps, patties etc. The amount of research in this field have made it evident that dietary habits and lifestyle patterns of an individual effects the weight in a significant way.

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