ISSN No:-2456-2165

A Kap Study on the Dietary Habit and Health Status of Female Students (7-12 Years) in Private Schools of Kolkata, West Bengal

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Abstract:- Introduction*:* Malnutrition is prevalent in India especially the diseases of over nutrition causing overweight and obesity has gained a remarkable stand. Childhood obesity represents a serious public health problem affecting the reproductive system in adulthood. Objectives: The present cross sectional study was carried out in the secondary schools of Kolkata, West Bengal, to assess the food choice and eating practice of female school children and determine its impact on health in terms of being overweight and obesity. Result & Discussion: The study population was 250 school children. The BMI percentile was calculated to assess the health status. The result showed that 69% of the sample population belongs to overweight and obesity range due to improper eating practices. Conclusion: The correlation coefficient shows negative relation between knowledge and attitude with the eating practices, which is the major determinant for the high prevalence of overweight and obesity among children.

Keywords*: Dietary Practices, Female school children, Overweight, Obesity, Lifestyle Disorders, Kolkata*

I. INTRODUCTION

Food is the basic requisite for the proper growth and development of children. It is important to support mental and physical health along with the enhancement of the immunity power in growing children. Dietary habits acquired in early childhood continue to later half of the life. Adequate food consumption is essential in the growth phase of human life for inculcating healthy eating habits so as to provide nutrients not only for the immediate growth, development and performance but also for the long-term health condition[1]. Childhood obesity is one of the most common public health challenges in this 21st century. The problem is global and continuously affecting many low and middle-income countries, particularly in urban areas. The prevalence has increased at an alarming rate. Overweight and obese children are likely to stay obese into adulthood and more likely to develop non communicable diseases like diabetes, cardiovascular diseases at younger age along with hypertension, dyslipidemias, PCOS or PCOD as well as more frequent sleep apnea, osteoporosis, musculoskeletal disorders and certain types of cancer such as endometrial, breast and colon at a later stage of life[2]. According to WHO, globally, in 2016 the number of overweight children under the age of five, is estimated to be over 41 million. Almost half of all overweight children under 5 lived in Asia and one quarter lived in Africa. At least 2.6 million people each year died as a result of being overweight or obese[3]**.** Therefore prevention of childhood obesity needs to be focused on. Many low and middle-income countries are now facing a "double burden" of disease, as they continue to struggle with the problems of infectious diseases and under-nutrition at the same time they are experiencing a rapid increase in risk factors of obesity and overweight, particularly in urban areas. It is not uncommon to find under nutrition and obesity existing side-by-side within the same country, the same community and even within the same household. This double burden is caused by inadequate pre-natal, infant and child nutrition which is then followed by exposure to high-fat, energy-dense, less micronutrient containing foods and a lack of physical activity as the child grows older[4]. The calculated global prevalence of overweight in children aged 5-17 years is estimated by the International Obesity Task Force (IOTF) to be approximately 10%, but this is 'unequally distributed' with prevalence ranging from over 30% in Americas to <2% in Sub Saharan Africa. Prevalence of obesity in India ranges from 6%-8%. In India overweight and obesity is common beside under nutrition. The diseases of over nutrition, has gained a remarkable standpoint. International Obesity Task Force (IOTF) classifies underweight as children with BMI value <5th percentile, normal category as children with BMI value between 5th percentile to 85th percentile, overweight as children with BMI value between 85th to 95th percentile and obesity as BMI value above 95th percentile for a specific age and sex[5]. Due to the diet and lifestyle change overweight and obesity are more common in the western world but now the prevalence of obesity and overweight is also increased in children in India. Though more common in higher socio economic strata it is not uncommon in middle and low income groups.

The emerging problem of overweight and obesity in children and adolescents has arisen from the changing dietary pattern towards energy-dense and high fat diets, together with the rising urbanization that has brought about a more sedentary lifestyle. Prevalence of over nutrition has

ISSN No:-2456-2165

also increased substantially in the nutritional transition countries, and the health burden of obesity-related complications is growing. In addition, in most countries fast food from major chains still contains unacceptably high levels of industrially processed Trans-fatty acids that have potential adverse effects, and contribute to type 2 diabetes and coronary artery disease[6]. New evidence also suggests that a high intake of Trans-fat may produce abdominal obesity, an important factor in the metabolic syndrome, type 2 diabetes, cardiovascular disease and PCOS or PCOD. According to the Joint WHO/FAO Expert Consultation diet should comprise of < 1% Trans fat, adequate PUFA, <5gm of common salt, >400gm/day of fruits & vegetables, whole grain > 25 gm/d of total dietary fibre and free sugars < 10% of total energy[7].

II. OBJECTIVE

The present study is carried out to assess the KAP of eating habit of school children and also to determine the correlation between the eating habit and the nutritional status among female school children.

III. METHODOLOGY

➢ *Selection of the study area and sample population*

This is a cross sectional study conducted in the urban school of Kolkata among the students of 3rd to 6th standard. The schools were selected using simple random sampling method. Introductory letter and mail were given to concerned school seeking permission to carry out the survey. A total of 250 subjects (n=250) were selected randomly. Children belonging to female gender in the age group of 7-12 years were included in the study.

➢ *Construction of questionnaire*

A semi-structured KAP questionnaire was prepared referring to the guidelines for assessing nutrition-related knowledge, attitudes and practices - KAP Manual of Food and Agriculture Organization of the United Nations but modified for the local food culture. The questionnaire aimed at attaining the relevant information regarding the personal details, general information, and anthropometric measurements and about the knowledge, attitude and practice towards the eating habit of the children.

➢ *Statistical analysis of data*

The quantitative and qualitative data were collected through the questionnaire and statistical calculation was done by scoring method such as qualitative variable to quantitative variables, Mean, SD and Pearson's Correlation Coefficient.

IV. RESULTS AND DISCUSSIONS

Table 1 Distribution of Sample Population According to Dietary Habit

Total Sample Population	Non Vegetarian (%)	Vegetarian (%)
250	6	94

Table no 1 shows distribution of sample population according to dietary habit. It was observed that 94% of the sample population is vegetarian and the rest 6% is non vegetarian.

Table 2 Distribution of Sample Population Involved In Physical Activity

Total Sample Population	No Physical Activity (%)	Physical Activity (%)
250	90	10

Table no 2 shows the distribution of sample population involved in physical activity. It is seen that 90% of the sample population is not involved in any physical activity and the rest 10% are involved in physical activities like drawing, singing, dancing and swimming. Involvement in regular physical activity can help children to improve cardio respiratory fitness, building of strong bones and muscles, control weight, reduces symptoms of anxiety and depression, and the risk of developing lifestyle disorders which can detrimental for their growth and development as well as in the later life.

Table 3Mean And Standard Deviation of Height And Weight According To Age

Age Category (years)	Height (cm)	Weight (kgs)
8	126.69 ± 5.231	35.092 ± 6.76
9	128 ± 6.055	35.789 ± 7.462
10	133.842 ± 11.936	45.225 ± 11.92
11	139.56 ± 8.544	46.027 ± 12.273
12	141.357 ± 7.053	52 ± 14.837

Table no 3 shows the mean and standard deviation of height and weight according to the age. It was observed that the mean height and weight of 8 years old children is 126.69 cm and 35.092 kg respectively whereas 9 years old children are 128 and 35.789 respectively. The mean height and weight of 10 years old children is 133.842 and 45.225 respectively whereas for 11 years old children it is 139.56 and 8.544 respectively. The mean height and mean weight of 12 years old children is 141.357 and 52 respectively.

Table 4 health Status of The Sample Population Categorized According To Bmi Percentile

Category	BMI Percentile Range	Percentage Of The Sample Population	Total Number / 251 Samples
Underweight	< 5th %Ile	0%	0
Normal	5th – 85th %Ile	31%	78
Overweight	>= 85th %Ile	33.12 %	83
Obese	>= 95th % Ile	35.88%	90
	Total	100%	251

Table no 4 shows the health status of the sample population categorized according to BMI percentile. It was observed that 31% of the total sample population belonged

to normal category, i.e. BMI percentile ranging between 5th to 85th %ile, 33.12% belonged to overweight category i.e. BMI percentile ranging >=85th%ile and 35.88% belonged to obese category i.e. BMI percentile ranging >=95th %ile. Overweight leads to obesity during childhood and can harm the body in a various ways. Children who have obesity are more likely to have high blood pressure and high cholesterol, which are risk factors for cardiovascular disease along with increased risk of impaired glucose tolerance, insulin resistance, and type 2 diabetes, breathing problems, such as asthma and sleep apnea, joint problems and musculoskeletal discomfort, fatty liver disease, gallstones, and gastro-oesophageal reflux. It also leads to psychological problems such as anxiety and depression low self-esteem and lower self-reported quality of life along with social problems such as bullying and stigma.

Table 5 Percentage Distribution of Proper Knowledge, Attitude And Practice of School Children About Dietary Habit For Proper Growth And Development

Factors	Knowledge (%)	Attitude (%)	Practice (%)
Importance of meal frequency	63	72	0
Hunger panks in between meals	57	98	10
Importance of drinking water	11	9	11
Importance of breakfast	21	99	56
Importance of packed lunch	83	66	56
Importance of milk consumption	100	100	7
Importance of vegetables	100	100	56
Importance of fruits	100	100	3
Importance of animal protein	100	100	5
Importance of plant protein	100	100	100
Health effects of junk foods	100	100	0
Health effects of skipping meals	100	100	57

Table no 5 shows the percentage distribution of proper knowledge, attitude and practice of the school children about dietary habit for proper growth and development**.** 63% of the children had a proper knowledge, 72 % of the children had proper attitude and none had a proper practice towards the importance of meal frequency. 57% of the children had a proper knowledge, 98 % of the children had proper attitude and 10% of the children had a proper practice towards hunger panks in between meals. 11% of the children had a proper knowledge, 9 % of the children had proper attitude and 11 % of the children had a proper practice towards importance of drinking water. 21% of the children had a proper knowledge, 99% of the children had proper attitude and 56 % of the children had a proper practice towards importance of breakfast. 83% of the children had a proper knowledge, 66% of the children had proper attitude and 56 % of the children had a proper practice towards importance of packed lunch. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 7% of the children had a proper practice towards importance of milk consumption. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 56% of the children had a proper practice towards importance of vegetables. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 3 % of the children had a proper practice towards importance of fruits. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 5% of the children had a proper practice towards importance of animal protein. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 100 % of the children had a proper practice towards importance of plant protein. 100% of the children had a proper knowledge, 100% of the children had proper attitude and none of the children had a proper practice towards the health effects of junk food. 100% of the children had a proper knowledge, 100% of the children had proper attitude and 57% of the children had a proper practice towards the health effects of skipping meals.

Table 6 Meals Skipped By The School Children

Total Sample Population	Breakfast (%)	Lunch (%)	Dinner (%)
250	43.2	0	0

Table no 6 shows the meals skipped by the school children. It is seen that 43.2% of school children skipped breakfast.

Table 7 Mean And Standard Deviation Value Of Knowledge, Attitude And Practice Of Eating Habit

Parameters	Mean ± SD
Knowledge	10.043 ± 1.281
Attitude	10.067 ± 1.359
Practice	4.605 ± 1.554

Table no 6 shows the mean and standard deviation of knowledge, attitude and practice of eating habit of the sample population. The mean of knowledge, attitude and practice is 10.043, 10.067 and 4.605 respectively. The standard deviation of knowledge, attitude and practice of the sample population is 1.281, 1.359 and 1.554 respectively.

ISSN No:-2456-2165

Table 8 Correlation Coefficient Between Knowledge, Attitude And Practice

Parameters	Correlation Coefficient Value
Knowledge and Attitude	0.852
Knowledge and Practice	-0.479
Attitude and Practice	-0.517

Table no 7 shows the correlation coefficient between knowledge, attitude and practice. The correlation coefficient between knowledge and attitude is 0.852, which means both are highly positively correlated to each other that mean they are dependent on each other. The correlation coefficient between knowledge and practice is – 0.479, which means both are moderately negatively correlated to each other. According to the value this study shows that the degree of knowledge is higher when compared to practice. The correlation coefficient between attitude and practice is – 0.517, which means both are moderately negatively correlated to each other.

V. CONCLUSION

It can be concluded that despite of having a proper knowledge and attitude the school children do not following the practice of healthy eating. Out of 250 sample population, it has been seen that 69% of the sample population is overweight and obese due to improper eating practices. Eating practice is important in terms of maintaining proper health. Researches also indicate that dietary habits acquired in childhood persist through to adulthood. As a result of this study, in order to prevent a growing prevalence of overweight and obesity among the pediatric population especially in girls, the following recommendations for school-aged children regarding food and lifestyle can be undertaken. Nutrition education can play an important role within the adoption of healthy eating habits and for the prevention of chronic diseases by increasing the nutrition knowledge. Educational programs for both families and schools via special classes on prevention can be implemented. More attractive extracurricular activities to stimulate the participation of school children should be properly planned. Scheduling regular visits to the family physician can make a change in the growth and development of a child. It's very important to prevent the childhood overweight and obesity for a better future. Nutrition education is a process by which believes, attitudes, environmental influences and knowledge about food and health are channelized into actual practices which are sound and consistent with the individual needs, purchasing power, food availability, health and socio-cultural background. It is one of the most effective tools of changing the dietary habits without affecting their sentiments. Nutrition counseling regarding the importance of proper balanced diet, harmful effects of junk foods will help to reduce the junk food addiction and improving their nutritional status of the pediatric population.

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