

Dietary pattern disparities among high and middle socioeconomic school students.

Mahnaz Nasir Khan, Laraib Rafaqat, Maham Ijaz Malik, Moha Akram Khan*, Nishwa Anwar, Rukh Gohar, Zainab Zaka

Department of Food Science and Human Nutrition, Kinnaird College for Women, Lahore, Pakistan

Abstract

A limited number of dietary assessment instruments specifically designed for children are available. The study focused on assessing the dietary intake of children and comparing the results with the standard serving size mentioned in food guide pyramid to check whether they were consuming the required servings of all food groups per day or not. FFQ was used to collect the dietary intake of the children. There are so many factors that directly or indirectly impact the pattern and quality of diet, socio-economic factor has a great importance that plays its role in patterning our diet. Our basic aims were to assess the dietary pattern of students studying in high and middle socio-economic class schools. Childhood is the substantial stage of life that requires adequate nutrients to fulfill body requirements that may change due to diverse environmental and living standards. The study includes 30 students from two schools belonging to high and middle socio-economic classes. The results showed that as socio-economic status tends to get better, diet quality improves and promotes healthy lifestyle as compared to those living in improvised conditions.

Keywords: Dietary intake, Socio-economic status, Food availability.

Accepted on 7 December, 2020

Introduction

Socioeconomic status is the main concern of health inequality among very young children. Dietary pattern are hugely dependent upon specified population and main influence is of food availability and socio-cultural factors. Food offers our bodies with the vitality, protein, essential fats, vitamins and minerals to live, grow and perform our daily life functions properly. We need an extensive diversity of different kinds of foods to offer the right quantities of nutrients for good health. Pleasure of a healthy diet can also be one of the best regional preferences of life. As a supportive effort to the school atmosphere, school nutrition plays a noteworthy role in enhancing the health of students. Getting optimal nutrition comprises eating three meals a day and two nutritious snacks, as well as restricting the consumption of high sugar and high fat foods. Consuming substantial quantity of fruits, vegetables, lean meats and low fat dairy products, include three servings of milk, cheese or yoghurt to meet their calcium adequate requirement can also prevent many medical complications. It include becoming overweight, developing of weak bones, and diabetes [1-4].

The period of actual growth of a child is school age and at that time, optimal nutritional prerequisite is necessary as the dietary habits are forming due to school life and peer pressure. It can affect the physical and mental growth of child during his/her lifetime. Diet in this age group must be regular and appropriate that should meet their daily requirements for their normal growth otherwise malnutrition may occur that can decrease their growth and learning abilities of school going children and has an adverse impact on their health during lifetime [5,6]. There have been some nutritional enhancements due to

improved national income through rapid economic development, constant food supply, and increased interests in nutrition, but negative changes in dietary lifestyle such as dietary difference, irregular meals and inadequate snacks are pointed out as well. Adequate diet in children preferably improved their health, growth and intellectual growth, it is not established in a short duration of time but affected through a lengthy period of education at home, school, and in society since weaning and through factors such as culture, religion, education, family members and socioeconomic level [7,8].

The diet of the children can be evaluated against the food guidelines; it also needs the accurate assessment of the diet of the children from different food groups. Often the dietary intake of children is assessed by using different tools; 24hour recall, food records and food frequency questionnaires. The data collection in this way in large epidemiological studies is difficult. After the collection of data to know about the detailed nutrient intake according to the food groups and calories there are standards with which the dietary intake can be compared. These standards includes Food guide pyramid which guides about the recommended amount of serving according to the requirement of calories [9-11].

Thus the study would evaluate the dietary intake of children in high and middle socioeconomic status against food based dietary guidelines standard to understand their dietary pattern, observe if there exist a difference among these socioeconomic classes and study whether the children are able to meet their dietary guidelines. By comparing the dietary intake of children with the standard, it helps to provide the information about intake from different food groups and the required consumption from different food groups of the children.

Materials and Methods

The universe of this research were children of age 9-13 studying in schools. The research design for this study was comparative research. A comparative study is the comparison of outcomes, results, responses, etc. for different techniques, therapeutic approaches or other inputs. The sample size of the study was n=30. A sample size of n=15 was selected both the schools. For the research a snowball sampling method was used which is also a convenient sampling method, it is a type of sampling in which the results are obtained from a small portion of a population that is close to hand. The selection of schools was on the base of their fee structures. High socioeconomic school with its fee ranging from 10000-15000 INR and middle class schools with its fee ranging from 3500-5000 INR. After that, an online survey was generated consisting of FFQ. The students from both the schools were selected on the basis of easy accessibility. The tool for data collection was Food frequency questionnaire (FFQ) that includes the frequency of foods consumed in a week and on the daily basis. It was added to the online survey system keeping the current situation of COVID-19 in mind, so that the students can easily fill the survey forms. The questionnaires were sent via whatsapp. The results were analyzed using SPSS. The data for comparison of food groups was presented in the form of a table.

Results and Discussion

Comparison of food groups among students studying in different socioeconomic schools.

Food Groups	High (MEAN ± SD)	Middle (MEAN ± SD)	Standard Servings
Cereals	6.92 ± 1.914	5.08 ± 1.492	6-11
Meat and meat products	3.42 ± 1.192	1.83 ± 0.990	3-6
Fruits	1.53 ± 0.743	0.54 ± 0.648	2-3
Vegetables	1.68 ± 0.678	1.35 ± 0.889	3-4
Milk and milk products	1.66 ± 0.645	0.95 ± 0.755	2-3
Fats and oils	6.08 ± 1.505	3.57 ± 1.321	2-3

Table 1. Descriptive of Comparison of food groups among different schools based on SES.

The above Table 1 illustrates that cereals and meat were the only food groups that met the standard serving sizes when talking about the students from high socioeconomic status. Cereal food group serving size was highest in high class with a mean of 6.92 and fruits with a lowest mean of 1.53. In middle class cereal had the highest value with a mean of 5.08 and lowest with fruit mean, which is 0.54. Fruits, vegetables and milk were below the standard servings for all the students and the serving size of fats was exceeding the standard size between both the socioeconomic status students.

A survey was conducted to assess the dietary pattern of children aged 9-13 years studying in High and middle socioeconomic schools. The dietary pattern of 30 children from two different schools was observed. The health status was improved among students of high socioeconomic schools than middle socio-economic levels due to better living conditions, wide availability of foods that were not in the range of middle socio-economic levels, plus the amount of care and time their parents have been giving to them. This study helps us promote the importance of good health for all children regardless of the socioeconomic background. The questionnaire for this research included food frequency questionnaire.

Carbohydrates are the main constituent of energy, it was important to see how much intake of carbohydrates the children were having through their cereal consumption. Table 1 shows the consumption of cereals by the respondents. The FFQ showed that the cereal consumption was slightly lower for middle socio school students than the high socioeconomic school students with a mean value of 5.08 and 6.92 respectively. A study conducted on the students in Nigeria, results interpret that the starchy food has been the most influential part of the student's diet like boiled rice and spaghetti and in their total calories carbohydrates intake were usually high as compared to other food groups [12-14].

Vegetables are eaten on a daily basis. Vegetables are high in dietary fiber and contain more than 90% of water in them. A healthy dietary pattern includes the consumption of vegetables in the recommended amounts. According to the Table 1, the high socioeconomic school students than the middle SES consumed vegetables in higher amounts but this does not cope with the fact that both the socioeconomic school students fell below the average consumption or the standard serving size for vegetables. A study conducted in Guatemala to investigate fruits and vegetable consumption among public and private socioeconomic school students. The HSES study participants had a statistically significant higher mean intake of combined fruit/vegetable items and more grams of fruit intake than LSES. In terms of mean vegetable intake, results for the two groups differed, but not in a statistically significant manner [15]. Vegetables need to be in higher amounts when consumed because it provides greater concentrations of fiber and vitamins, minerals, antioxidants, phytochemicals and electrolytes. Dark green and leafy vegetables, oranges and red vegetables were highly recommended in their diet [16,17].

Fruits are the essential source of fiber, vitamins and minerals. It maintains our water intake. As fruits are low in fats and sodium so they benefit the body. In table 1, the fruit exchanges were higher in high socioeconomic school students 1.53, with far lower values in middle socioeconomic school students 0.54 [18-21]. This shows the contrast among both the SES. This again comes to the point of food availability and its reach. For high SES it is likely that the parents usually keep the refrigerator filled with fruits and continuously ask the children to eat fruits. Unlike the high SES the middle SES mostly cannot afford a basic necessity that is fruits so the consumption is low. A study was done in Saudi Arabia, the intake of fruits and vegetables was not appropriate according to their study

that shows that 78% of the students don't consume adequate amount and 22% actually consume adequate daily recommended amount in diet [22].

Meat and meat products recommended for consumption to have a healthy lifestyle and dietary pattern. In table 1 mean values obtained clearly showed that, the students studying in high socioeconomic schools had the highest meat consumption with mean value 3.42 and the students studying in middle socioeconomic schools had the mean value of 1.83 for meat. Cost plays an important part in patterning the diet. Less nutritious and high energy foods are economical sources of calories. Better diet quality tends to be associated with higher cost of the food and better socioeconomic status [23-27].

Consumption of milk has been noticed as a factor that is affected by the socioeconomic status of the person. Table 1 shows the daily consumption of milk among high SES students was at least 2.0 servings with a mean frequency of 1.66 and mean frequency of middle was 0.95. Milk consumption was satisfactory in high socio-economic class. Sometimes it is the affordability while other times it is just the disliking of certain foods. This difference among the milk and milk products consumption cannot be solely based on the SES but socioeconomic status is counted as a main factor. Study was conducted in Hyderabad that shows that milk and milk products were consumed by 96% of the children of high socioeconomic students and of 70% in the lower economic class students. That typically represent that economic class tend to have a huge impact on dietary of the children [28]. Not everyone can enjoy the luxury of eating every type of food. People learn to like foods that are most appropriate to their social and economic class at a young age. Milk is the most important source of calcium, potassium, phosphorous that helps in strengthening of bones, teeth, and promotes muscle mass. If there is reduced intake of calcium then it can lead to calcium deficiency, which accelerates chances of osteoporosis [29].

Fat is a macronutrient that we need in our diet to stay healthy. Table 1 shows the daily consumption of fats in high and middle was 6.08 and 3.53 mean value. The recommendation of fats exchanges was 0-1 by food guide pyramid. Fats were consumed in large amounts by the students. Fats are healthy if consumed properly and in a recommended allowance. Because the excess of fat intake can lead to serious cardiovascular diseases, these diseases are becoming common in school going children too. A study conducted among school going children showed that the fat consumption was more than the recommended amounts and this was the main reason for childhood obesity [30]. Our diet should have more unsaturated fats, which are plant source than saturated fat. The amount of calories has a large impact on weight. Only recommended amount of calories should be consumed that our body can burn according to our height and weight. Fats must be chosen wisely and need to keep in mind that you should consumed foods such as unsaturated fatty acids like omega 3 and omega 6 to keep maintain the levels of lipid profile in your diet [31].

Conclusion

The research was conducted to assess the dietary pattern of students studying in school of two different socio-economic levels of Lahore. Various aspects can influence a person's diet pattern and its quality it is because of the variations in the environment. The factors can range from affordability, cultural values, like/dislike for certain foods etc. The results showed that children in high SES had normal health status and their meals were planned and included almost every food group with more or less serving sizes, but in middle class the children consumed foods from almost all the food groups but their consumption of vegetables and milk was very low. There was a clear difference among both the SES, which should not have been in the first place. Every child deserves to consume a healthy diet with all food groups included. Therefore, education related to food groups and portion sizes must be provided to children and their parents of all social classes, so that they can meet requirements of major food groups within their resources and find alternatives to have adequate diet. Along with educating the parents, the schools need to add a healthy lunch category in the schools so that at least the child gets to eat healthy at one time of the day. Variety of foods should be consumed on a daily basis. Children should have fruits and vegetables every day. Adding fruits and vegetables in the diets will not only add variety but also improve their overall health.

This will help them to stay healthy and maintain steady growth. Government should take interest in this field by financing health programs at schools and other health care centers to bring changes in the wellbeing of children.

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***Correspondence to**

Dr. Moha Akram Khan

Department of Food science and human nutrition

Kinnaird College for women

Lahore

Pakistan

E-mail: mohaakram94@gmail.com