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Nutritional analysis: An emerging need for healthy adolescent girls

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Abstract

Adolescent girls are future mothers of a nation. Growth and prosperity of a nation depends heavily on the nutritional status and development of adolescent girls as they influence the growth of the remaining population. The nutritional status and development of adolescent girls are integrally related to their nutritional requirements, dietary intake, dietary practices, cultural traditions and meal patterns. Increasing nutritional experts express their deep concerns and necessity of research on nutrients intake to identify numerous modifiable risk factors of nutritional deficiencies and food related diseases. The main objectives of the study are to assess the nutritional status, nutrient intake and relevant knowledge among adolescent girls. A random sampling technique was used for selecting 160 adolescent girls, Home Science and Non Home science, studying in Dev Semaj Post Graduate College for Women, Ferozpur city. The method adopted for investigation was interview schedule and observation method.

Descriptive statistical tools were used to analyze the data. Results were shocking and revealed that the prevalence of under nutrition in the sampled adolescent girls was high and their overall nutritional knowledge was limited. Factors associated with the increased use of iron supplements were related to awareness of the girls about extra nutrients and their access to mass media and education. The awareness level among the students was not satisfactory as very few respondents were able to explain about organic foods and genetically modified foods. Community-based adolescent-friendly health and nutrition education and services and economic development may improve the overall health and nutritional knowledge and status of adolescents. The researcher suggested some guidelines so that adolescent girls can be made aware of tasty, aesthetically appealing, nutritious and genetically modified foods. In many underdeveloped countries the nutritional value of any packaged or frozen foods are not mentioned as prevailing business practice even till today. But many developing countries, like India are getting strict on mentioning every aspect of nutritional values on packaged foods and drinks along with preservatives and colors used if any.

Keywords: nutritional status, adolescents, dietary practices

1. Introduction

Nutrition is the science of nourishing the body. There are five major nutrients such as Carbohydrates, Proteins, Fats, Vitamins and Minerals, which are provided through food. These nutrients are required in very balanced amount in our daily diet. So, adequate nutrition is a vital need of every one in all ages.

Adolescence is the transition period between childhood and adulthood, a window of opportunity for the improvement of nutritional status and correcting poor nutritional practices. Adolescence is characterized by the growth spurt, a period in which growth is very fast. During this time, physical changes affect the body's nutritional needs, while changes in one's lifestyle may affect eating habits and food choices. Adolescent nutrition is therefore, important for supporting the physical growth of the body and for preventing future health problems. Any deficiency in earlier stage/childhood stage can be full filled by taking adequate diet during the adolescent period. [6]

The nutritional status and development of adolescent girls are integrally related to their nutritional requirements, dietary intake, dietary practice, cultural traditions and meal patterns. Diets of Indian adolescent girls are inadequate both in terms of quality and quantity. They mainly consume cereal based foods but grossly deficient in legumes, animal foods and green leafy vegetables. [3]

In poor communities adolescent girls are often last to be given food even when pregnancy

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further increases their nutritional needs. In addition, while staple food items (i.e. rice, pulse, bread, etc) are distributed fairly equally, side dishes usually containing a higher proportion of micronutrients (i.e. vegetables, meat, yogurt, ghee etc) are often preferentially allocated to valued house hold members, including adult males and small children. In general, adolescent girls are the worst sufferers of the ravages of various forms of malnutrition (viz. protein energy malnutrition, iron, iodine, calcium, vitamin A and other specific nutrient deficiencies) because of their increased nutritional needs but decreased intake. ^[3]

Dietary intake patterns are major determinants of several chronic diseases like obesity, metabolic syndrome, diabetes and cardio-vascular diseases. Previous studies have shown that the prevalence of obesity and metabolic syndrome among Indian adolescents is as much as their counterparts in U.S. ^[4] To help prevent the increasing trend of these non-communicable diseases; the first step is to identify major dietary intake patterns & dietary habits among adolescent girls.

2. Need for the Study

Adolescence after the first year of life is the second critical period of rapid physical growth and changes in body composition, physiology, and endocrine. ^[1] Rapid growth and changes heighten their nutritional requirements and also risks of under nutrition. Adolescence offers the last opportunity to intervene and recover growth faltered in childhood and also growth spurt and skeletal development to break the vicious cycle of inter-generational under nutrition.

Any nutritional deficiency experienced during this critical period of life can have an effect on the future health of the individual and their offspring. ^[2] For example, failure to consume an adequate diet at this time can result in delayed sexual maturation and delayed or retarded physical growth. The rapid physical changes of adolescence have a direct influence on a person's nutritional needs. The growth spurt that occurs in adolescence, second only to that in the first year the life, creates increased demand for energy and other nutrients. Nutritional status and physical growth are dependent on one another such that optimal nutrition is a requisite for achieving full growth potential.

Nutrition of the adolescent girl is particularly important but under-nutrition (too little food or food lacking required nutrients) in adolescents frequently goes unnoticed by their families or the young people themselves. Adolescence is time to prepare for the nutritional demands of pregnancy and lactation that girls may experience in later life. Particularly, health and nutrition knowledge and healthy habits of female adolescents will have critical roles to play in maintaining future family health and nutrition. Therefore, the present study is an attempt towards this direction.

The specific objectives of the study:

1. To estimate nutrients intake of adolescent girls.
2. To find out dietary habits and practices of study subjects.
3. To assess nutrition related knowledge of adolescent girls and create nutritional awareness.

3. Methodology

The primary tool in this study was predesigned and pretested

interview schedule for recording of individual information. Dietary practices and nutrition related knowledge of adolescent girls were elicited by interview technique. Data were collected from 160 adolescent girls, Home Science and Non-Home Science, studying in Dev Samaj Post Graduate College for Women, Ferozpur City. A random sampling technique was used to select the respondents. Data thus collected were coded, tabulated and percentages were calculated. To assess their dietary knowledge, and intake, a checklist of food items (rice/wheat, potato, pulses, meat, fish, milk, eggs, vegetables and fruits) were used where the girls were asked to name the check-listed foods that provide mainly energy, protein, vitamins and minerals.

4. Results and Discussion

The results revealed that the awareness level among the respondents was not satisfactory. Details of the results have been presented below.

Table 1: How often the Respondents skip their meals

Option	Frequency	Percentage
Daily	18	11
Occasionally	10	6
Rarely	122	77
Never	10	6

It was found that 77% of the students skip their meal rarely. This means that students take their meals at appropriate time. The results are encouraging but it is a cause of serious concern that 11% of girls miss their meals on a daily basis.

We have attempted to find out the reason to skip meals. 48% skipped their meals as they did not feel hungry, 24% skipped meals due to lack of time, 8% of the respondents often do not get any free time between classes and practicals and their day starts at 9a.m and ends at 4p.m.

The analysis of the survey found that breakfast is the most often meal skipped by the students (41%) due to their busy schedule. It is to be noted that the breakfast is the most important need of the day for all and especially for teenagers according to nutritional experts.

The researcher also attempted out to study the daily fluid intake of the students. 50% of students take 5-8 glass of water. The nutrition experts recommended a minimum of 8 glasses of fluid intake in a day.

Table 2: Snacking behaviors of the respondents

Snacks	Daily	Occasionally	Rarely	Never
Chaat	8	44	90	18
Biscuits	94	26	28	12
Sandwiches	12	48	66	34
Potato Chips	18	34	84	24
Chocolates	68	18	50	24

An analysis of the snacking behaviors of subjects shows that they take snacks occasionally. Biscuits and chocolates seems to be a daily habit of students as these are readily available in shops and canteens and they can be eaten at any time to relieve hunger for a short period of time. Sandwiches, chips and chat were taken rarely by study subjects. Nearly 46% of subjects rarely or did not take soft drinks.

Table 3: Regular foods taken by the Respondents

Food Items	Once a day	Twice aday	Thrice a day	Weekly	Once a month	Total
Rice	62	18	2	62	16	160
Chapatti	26	114	18	2	0	160

Idli	10	0	18	52	80	160
Bread	14	2	4	94	46	160
Vegetable	130	20	4	6	0	160
Dosa	10	4	2	40	104	160

Table 3 shows the information collected about the regular food intake of the respondents. The staple food of the students found to be Rice, Chapatti and Bread. A few students did have Idlis and Dosa on regular basis. Vegetables were consumed by majority of the subjects (81%) daily. Only 25% of the students consumed non-vegetarian food weekly or once in a month. However, the consumption of eggs on a regular basis was found to be high among non-vegetarian foods.

Table 4: Healthy foods taken by the Respondents

Options	Daily	All day	Weekly	Rarely	Never
Sprouts	10	43	22	70	15
Salad	110	22	10	14	4
Fruit	92	30	26	12	0
Milk	130	8	4	14	4
Milk products	84	40	16	18	2

Above tabulated data about the consumption of healthy food items by study subjects shows that most of the students had fruits, salad, milk and milk based products on a daily basis. The study also made an attempt to find out the students attitude towards their figure and health. Only 10% of the students believed that they are overweight. We are unable to ascertain whether their perception was correct or if they are comparing themselves with the media image of the slim women. About 70% of the students were already avoiding sweets and oily foods while 33% said they were not doing anything.

Table 5: Nutritional awareness among the Respondents

Nutrients	Adequate	Less	Excess
Carbohydrates	110	42	8
Proteins	134	20	6
Fat	32	116	12
Iron	68	86	4
Vitamins	113	37	10
Minerals	120	40	0

During survey, when respondents were asked about their daily nutritional requirements, it was found that 55% were aware of their daily nutritional needs. Majority of the respondents believed that they consume adequate amount of Carbohydrates, Proteins and Vitamins, while their consumptions of Fat and Iron is less than the permissible limits.

5. Conclusion

The study was an attempt to understand the attitude and behavioral pattern of the students. It was found that the awareness level among the students was not satisfactory. The eating pattern, on the other hand seemed satisfactory.

The survey reveals that the majority of the students consume pickles, chutneys and salads along with their meals. These meals are made from herbal plants, which contain certain important micronutrients. These herbal plants also have some medicated value, which boost the immune system of the body. The survey indicates that students often prefer to eat at home and the frequency of their eating outside is low. This is a healthy practice as the majority of the food available in

readymade market (Hotel, Restaurant etc.) is unhygienic and difficult to digest. High calorie foods like biscuits and chocolate are very popular with the students. The regular food of the students is found to be rice and chapattis and these foods are nutritious.

The survey shows that besides the regular food the other healthy food taken by them are fruits, salads, milk and milk based products which are good for health.

The survey indicates that the walking is the most common form of exercise adopted by the students to maintain their figure and health. They also avoid sweets and oily foods.

The awareness level among the respondents was not satisfactory according to the survey. A very few students were able to explain about organic foods and genetically modified foods.

The survey shows that although the students have access to information about the nutritional needs, but this is not applied in their daily life. They do have some healthy practices. However, the survey shows that these healthy practices are not sufficient for a holistically healthy diet. Moreover, the awareness level among the students about their nutritional need is not significantly good.

The study reveals that there is a great need for awareness regarding the nutritional needs of college going adolescent girls. The main strategies suggested for improving adolescent nutrition include: food based strategies like dietary diversification and food fortification, for ensuring adequate nutrition at household level; addressing behavior modification to bring about dietary change in adolescents. Through nutritional meals, salad competitions, exhibitions, group discussions, seminars, workshops and public education programs on television and internet, adolescent girls can be made aware of tasty, aesthetically appealing, fortified, nutritious and genetically modified foods.

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