

## EFFECT OF NUTRITION ON ADOLESCENTS

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Adolescence can also be said as “Growing age”. During the age of 10 to 18 years the growth of the young boys grow almost to double the wt. from that of the beginning of age 10 and they become sexually mature. This stage, is a stage of acute changes in the mental and physical state of the body.

The children going to the high school are aged in between 13 to 18 years. This stage is known as adolescence. The word adolescence has been derived from the Latin word "adolescere" which means to grow to maturity.

After the birth of the child the maximum growth in the development if the child is during the adolescence. This stage is from 13 to 16 yrs in the boys, and 11 to 14 yrs in the girls. During this phase of development the child very quickly develops from child into a young adult and the beginning of the sexual development starts and ends there. The girls become sexually mature earlier than the boys. The major role in the development is played by the Sex hormone and the Growth hormone.

The study on malnutrition was done by CARE and other institutions where “A battery of work performances and mental development tests showed that malnourished group had slower responses, dullness, apathy, poor concentration, physical weakness and low effort. The data revealed visual discrimination problems, dependence on visual rather than verbal coding for memory, and gross reduction in verbal interaction with adults and colleagues”

The mental development is also accelerated and they are able to take decisions on their own. They do not like interference of others. They develop a social group of their own and they start understanding the differences between right and wrong. Without the proper logic they do not accept any idea or ideology of anyone and during this phase they also develop emotion and emotional control. The complete development of personality of the girls

and the boys occur during this stage. This is the reason why the value of effect of nutrition is greatly enhanced in this phase

During this phase hunger is greatly enhanced, but due to the burden of the school and colleges problems, sincerity towards studies, financial dependence, concern of getting a job and lack of time they are unable to get proper nutrition diet. Homemade food is less liked by them and due to increase in the activity, the demand of nutritional elements increases. They should be made aware of the balanced diet and the overall complete development of the individual should be stressed upon.

To remain healthy proper nutrition is required. This can be attained by balanced diet. Malnutrition is just the reverse of this situation. Half of the deaths occurring in the childhood has something to do with malnutrition. Malnutrition is a state where there is a deficiency of one or more nutrients. There are many types of malnutrition and they may be complementary to each other like Protein –energy malnutrition, energy malnutrition, iodine deficiency, vitamin- D deficiency, iron deficiency etc.

Individual's nutritional status depends upon the proper availability of the nutrients. Deficiency of the nutritional elements occurs when food is deficient in quantity or there is some problem in the uptake of the nutritional elements and proper digestion of the elements.

In developing Country like India poverty, struggle for existence, serious social imbalance, HIV create hindrances in the development of the mankind. This is the reason why it is a great challenge for the country to develop and prosper in such condition and the success depends upon the availability of the resources.

## **OBJECTIVES**

- 1 To find out the causes for the nutritional requirement and ways of fulfillment of the high school going students.
- 2 The effect of physical growth, educational state on personality of adolescents.
- 3 The effect of food taken during the adolescence on the social life.
- 4 To find out the problems influencing the nutritional state of the adolescents.

## MATERIALS AND METHODS

The various following methods were used for the research of the topic “EFFECT OF NUTRITION ON HIGH SCHOOL GOING CHILDREN”

### Selection of the district

The LUCKNOW district of U.P. was specially chosen for the study as it was very easily accessible.

### Selection of the candidates

Four schools of Lucknow district was selected so that the aim of the research work could be fulfilled.

### Selection of the samples

About one thousand children (10-18 yrs age) from the rural as well as the urban areas were selected randomly. They were divided into two groups control group and experimental group which was equally applied on both the groups for the study.(50% from each group).

Method of enquiry and collection of data survey schedule:-

The following data were collected under this study was used for the research purpose:-

- 1 Anthropometric status
- 2 General profile
- 3 Dietary intake

### Anthropometric status:

- 1 Height in (cm), Weight of body (K.G.)etc. are the standards for the basis of observation. These were recorded on the basis of standard norms.

#### Height measurement:-

- 2 Height of all the subjects of the group were taken after removing the shoes /slippers(bare foot). Loose iron scale was used and compared with the prescribed norms.

#### 3 Weight Measurements:-

The weight of all the subjects of the group was taken with minimal clothing's and without slippers and was compared with the prescribed standards.

The data was collected by the help of questionnaire for the record of General profile and Dietary intake.

2. Rao Kamala S. Jaya in her study “Urban nutrition in India “the study was done on nutrition and anthropometrics. Since linear body growth ceases around 16-20 yrs of age, Adult height largely reflect the

nutritional health status during childhood of an adolescent whereas body wt. is the reflection of this and current status.

## RESULTS AND DISCUSSION

### ANTHROPOMETRIC MEASUREMENTS

Sample distribution of school children

Table: 1.1

CLASS	BOYS	GIRLS	TOTAL
8 <sup>th</sup> (in no) %	60 50	60 50	120 100
9 <sup>th</sup> (in no.) %	70 50	70 50	140 100
10 <sup>th</sup> (in no) %	70 50	70 50	140 100
Total %	200 50	200 50	400 100

#### Description of the selected sample adolescents

The total no of students in the class 8<sup>th</sup> was 120 and in the class 9<sup>th</sup> and 10<sup>th</sup> 140 students each were selected. Out of these 50% girls were selected as control group

Table 1.2

AGE	BOYS	GIRLS
12	-	23.8%
13	35%	14%
14	41%	33.2%
15	17%	28%
16	7%	7%

From the above study it is clear that the maximum no of students were from 13, 14,15 and 16yrs of age out of which 14,15 aged girls –boys were maximum in no.

Table 1.3

Age wise standard height/weight and mean height/weight of the sample students

Age in yrs	Standard Height(cm)	Mean Height(cm)	Standard Weight(kg)	Mean Weight(kg)
BOYS(12)	142.8		35.2	-
GIRLS(12)	145.3	137.5	32.5	33.6
BOYS(13)	152.9	155.0	39.9	38.8
GIRLS(13)	149.0	142.5	39.3	33.6
BOYS(14)	159.9	157.5	44.5	43.7
GIRLS(14)	152.4	142.5	41.6	36.0
BOYS(15)	162.0	160.0	45.7	45.6
GIRLS(15)	153.1	150.0	43.4	37.3

The above table indicates that the mean height of the students going to the school is less than standard height .As per the standard height the average height of the girls of age 12 the height was less by 5cm, for 13yrs it was 7 cm, for 14 yrs 10 cm, for 15yrs it was less by 3.1 cm.The weight of the students was equal to or less than the standard which is evident from the comparative study.

### General Profile

**Table 1.4**

TYPES OF FAMILY	NO.OF FAMILY	PERCENTAGE
Single	136	58%
Joint	64	32%
Total	200	100%
Educational Status of Parents	Father	Mother
Illiterate	-	7.8%
Less than high school	10%	18%
Highschool &above	6%	22%
B.A. and above	84%	60%
Profession	Father	Mother
Politicians	10%	-
Gazettedofficer	10%	3%
Officer in bank	10%	5%
Rly.&OtherDept.	-	-
Pvt. Job	50%	12%
Big Business	6%	-
NGO worker	4%	5%
Domestic worker	-	75%
Petty Business	3%	-
Farmer	2%	-
Village level worker	3%	-
Others	2%	-

From the above study it is clear that the adolescents of the nuclear family were more about 68% and those of the joint family was about 32%. It is also clear from the table that 7.8% mothers were illiterate, 18% from high school, 22% were above high school and 60% were B.A. or above in literacy. However the father of the children were 10% of high school, 6% were high school and above and 84% were graduate and above. Mostly the father were doing private job. About 10% were in business, gazette officer or working in railways or banks. NGO, farmers, and others were 4%, 2%, 3% respectively.

Table: 1.5

## Priorities of Activities of Sample

Activities	Boys	Girls
Reading	1	1
T.V. writing	2	4
Playing	3	3
Participation in competition	4	4
STROLLING	5	2
EATING	6	7
SLEEPING	7	6

3. According to Mudambi the child has an alert and hungry expression but may necessarily look miserable. Both Kwashiorkor and Marasmus can be complicated with other infections due to intestinal parasites and Bacteria

Table1.6

## Dietary intake /Day

	<u>BOYS</u>	<u>GIRLS</u>
<u>VEGETARIANS</u>	<u>62%</u>	<u>71%</u>
<u>NON-VEGETARIANS</u>	<u>38%</u>	<u>29%</u>

<u>FOOD GROUPS</u>	<u>BOYS</u>	<u>GIRLS</u>
<u>CEREALS</u>	<u>100%</u>	<u>100%</u>
<u>PULSES</u>	<u>90%</u>	<u>85%</u>
<u>GREEN LEAFY VEGITABLE</u>	<u>54%</u>	<u>56%</u>
<u>FRUITS</u>	<u>20%</u>	<u>18%</u>
<u>MEAT EGG &amp; POULTRY</u>	<u>15%</u>	<u>12%</u>
<u>MILK&amp;MILK PRODUCTS</u>	<u>88%</u>	<u>82%</u>
<u>ROOYS &amp; TUBERS</u>	<u>98%</u>	<u>88%</u>
<u>FATS &amp; OILS</u>	<u>100%</u>	<u>100%</u>
<u>SUGAR &amp; JAGGREY</u>	<u>100%</u>	<u>100%</u>

From the above table and the data it is very clear that the boys were mainly non-vegetarian and the school going girls were mostly vegetarians. The consumption of the cereals, pulses, sugar, fat etc. was used by 100% while milk & milk products was used by 80% of the students. The use of meat & poultry products in the food was only 15%. Leafy vegetables & fruits were used by 50%. This is the reason why there is deficiency of the essential micronutrients & nutrition which leads to malnutrition and ultimately leads to hindrance in the personality development.

## FOOD REQUIREMENTS

Physical and psychological pressures influence adolescent's eating habits. Boy fares better than girl in that his large appetite and sheer volume of food leads him to consume adequate nutrients. The adolescent girl may gain weight easily due to her psychological sex differences associated with fat deposits during this period and comparative lack of physical activity. Social pressure and personal tensions concerning figure control may make her follow unwise, self-imposed crash diets for weight loss. Selfstarvation may result in complex and far reaching eating disorders like anorexia nervosa and bulimia.

Teenagers have the reputation of having the worst eating habits. They may skip a meal particularly breakfast. There are more skippers among girls than boys. Those who take breakfast may consume foods which are nutritionally inadequate. Missing breakfast maybe due to eating disorders, peer pressure, lack of type and no nutritional awareness. They may eat fast foods which are generally inadequate in calcium and vitamin A but high in calories, saturated fat and sodium.

Dieting places adolescence at risk for unhealthful eating and physical activity behaviours. People "go on a diet" often have a time-limited behaviour. Instead they should plan for long term behaviour changes such as avoiding eating binges, eating more fruits and vegetables, starting the day with breakfast and engaging in physical activity.

## DIETARY GUIDELINES

Diet in adolescence is very significant because it influences the nutritional status later in life.

- Adequate well balanced nutritious foods should be taken to prevent obesity or undernutrition.
- An adolescent girl should take enough calcium rich foods in her diet to increase bone density. This helps in delaying the onset of osteoporosis.
- No meal of the day should be missed, as adolescence represents a period of active life. Junk food should be avoided.
- Food should be colourful and attractive.
- Avoid empty calorie foods such as carbonated beverages.
- Iron rich foods may be included in the diet to prevent anaemia.
- Calorie and protein rich foods should be taken to support the growth spurt.
- Include fruits and vegetables in the diet to meet the vitamins, minerals and fibre requirement.
- Eating habits should be independent of emotions.
- Parents should encourage the adolescents (both boys and girls) to cook at home nutritious and tasty food.



- Home based diets are best for children's growth.
- Adolescents need to be encouraged to do physical activity particularly outdoor games. Physical activity regulates appetite.

## SUMMARY AND CONCLUSION

The survey done in the developing country it has been seen that the major population consumes food which has cereals, tubers in major quantity. They have very less quantity of fruits and vegetables in their diet. Milk, meat, fish, eggs in very meager quantity. A very large population does not get even a proper quantity of diet. In their diet the deficiency of protein, calorie and vitamins such as vitamin A, riboflavin, folic acid and minerals like iron and calcium are the main. Thus, it is very clear that the amount of calorie which is being taken by the people is insufficient to fulfill the need of daily requirement. If the daily requirement of the calorie is reduced or decreases by 10-20% of the daily requirement then majority of the people suffer from malnutrition.

It has been usually seen that the guardians give more attention to the studies than to the nutritional requirement of the students. This results in insufficient dietary intake and malnutrition of the students.

It has been seen that in the Indian set-up the boys are generally given more and better food and nutrition compared to the girls. The girls are not provided with good quality and quantity of food which proves to be hindrance to the personality development. It has also been seen that food has relation with earning, education, and the method of preparation of food. It has been seen that due to habit, or due to taste, the adolescents tend to forget their basic food and consume sweets cold drinks, junk food etc. spoil their taste.

These days there is a rise in the "body conciseness" which has further increased the neglect to the balanced diet. This has led to diseases arising from malnutrition.

In the study it was seen that those students whose nutritional state was high participated more in the Extra-curricular activity and suffered less from diseases.

## RECOMMENDATIONS

1. Nutrition has a very important role in the Personality development of the adolescents. For this purpose, the adolescents must be guided to have proper and balanced diet at a proper time, especially the girls who should give special attention to the food related to good health.
2. Food must contain Micronutrients and to fulfill these leafy vegetables, lemon milk, salads, and fruits should be added for proper physical and mental development.

3. Anemia in adolescents can be treated by proper nutrition and balanced diet. In India the general population should be educated towards Balanced diet, so that during pregnancy death and improper development of children is reduced.
4. Nutrition related knowledge should be given in the schools, and efforts should be made to change the views of people regarding girl's nutrition so that girls do not diet unnecessarily and take milk, pulses, etc. and do not leave food or they will be known as the weak citizens of the country.
5. NGO, Social service society should come up with programs to eradicate Malnutrition so that young adults of our country have a proper development of personality so as to perform the national duties properly.
6. **Tips for Tiffin: Protein rich and Satiety;**
  - a. Paneer paratha with fruit.
  - b. Sprout upma/poha with fruit/sprout chat.
  - c. Missy paratha with vegetables (as carrot, peas, pumpkin, aloo methi).
  - d. Palak/bathua/methi/missi paratha with oil-free lemon-ginger pickle.
  - e. Vegetable and peanut idli with low fat dal-gun powder.
  - f. Paneer and vegetable pulao.
  - g. Vegetables and nugget noodle (avoid plain noodles).
  - h. Rajma/paneer low fat patty (presto toaster).

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