

KNOWLEDGE LEVELS ON NUTRITION AMONG ADOLESCENT GIRLS

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ABSTRACT

Adolescence is a stage which attains development and thinking. In the growing world, adolescents constitute to one-fifth of the population. Especially in India 243 billion period effects health, physical growth and sexual maturation. Consumption of adequate diet with required macro and micro nutrients helps to overcome malnutrition. Tirupati town was selected as study area, where equal number of samples we selected randomly from four different educational institutions. Questionnaire method was used to collect the data. It has been analyzed in the study that about 54.5 percent of the respondents have the knowledge on basic five food groups, 62 percent of them know about carbohydrate rich foods, 61 percent of respondents have knowledge about vitamin rich foods, 65.5 percent of the respondents have the knowledge on iron rich foods. The family background literacy rate of families and respondents knowledge on nutrition is not sufficient. Therefore the study aims to educate them on all nutrient aspects and their importance in health and to find their dietary patterns in day-to-day life.

KEYWORDS: Adolescents, Nutrition, Knowledge, Dietary pattern, Growth and Development

1. INTRODUCTION

The term **adolescence** meaning "to emerge", or "achieve identify" is a relatively new concept, especially in development thinking. The origins of the term is from the Latin word, '**adolescence**' meaning "**to grow, to mature**" indicate the defining features of adolescence. The **World Health Organization (WHO, 2017)** identifies adolescence as the period of human growth and development that occurs after childhood and before adulthood, from **10 to 19 years of age**.

Adolescents constitute one- fifth of the population in the world, out of which **84** percent are among the developing countries. According to the **UNICEF, India** is home 243 billion adolescents ranging from 10-19 years .Adolescence is the transitional phase of life from childhood to adulthood, during which period, growth spurt with rapid increase in height and weight, psychological and sexual maturity with cognitive development are observed among adolescents. Adolescence is a very unique stage in life as it brings about intense physical, psychosocial and cognitive development.

The world's adolescent population is 1200 million persons in 10 – 19 years of age about 19 Percent of total population faces a series of serious nutritional challenges, which affect not only their growth and development, but also their livelihood as adults. Yet adolescents remain a largely neglected, difficult to measure and hard to reach population, in which the needs of adolescent girls are particularly ignored (SCN News, 2004).

Adolescence is a particularly unique period in life because it is a time of physical, psycho-social and cognitive development. Increased nutrition at this juncture relate to the fact that adolescents gain up to 50 percent of their

adult weight more than 20 percent of their adult height, and 50 percent of their skeleton during this period (WHO, 2003). The velocity of growth increases gradually and reaches a peak between 12 – 14 years and decline gradually thereafter up to 18 years beyond which growth generally ceases. Basal metabolic rate during adolescent period is higher than in adults. Sexual maturity also occurs during this period with attended alterations in sex hormone secretions and metabolic changes. There are also far reaching psychological changes during the adolescent period and children during this period are highly active.

All these physical and psychological changes that occur during the adolescent period place a great demand on their nutritional requirements. It has been established that many adolescent females due to their current and prior history of poor dietary intakes are at risk for multiple nutrient deficiencies (Story, 1984). The dietary intakes of adolescent females are often below the recommended levels for some nutrients including iron, zinc, folacin, and vitamin B12 (U.S. Dept. of Health education and Welfare Nutrition Survey, 1972).

The main focus in developing countries, particularly among adolescents living in cities anywhere tend to have a common linking for fast food, and they increasingly have access to the same commercial outlets world-wide. Obesity among young people is a growing problem in most countries owing to eating patterns and sedentary lifestyles. Furthermore, micronutrient intake in adequacies is not only to be found in developing countries adolescent girls. Deficiencies are poor diets may be associated with poverty; they may also result from unhealthy eating behaviours, which are observed in well-off and not so well-off groups. Broadly speaking, adolescent's problems are malnutrition, micronutrient deficiencies, and nutrition related chronic diseases, secondary sexual changes and reproductive health. Wide disparities in the relative magnitude of these problems are likely even within a given region or country, with a direct bearing on priorities.

Adolescence is the only period in which growth accelerates, the growth usually depends on their nutrition and that depends on two factors. The first in the availability of food sufficient quantity and quality, and the second is the ability to digest and utilized which has been consumed. The former depends on the level of poverty, cultural traditions, and family structure, the allocation of food etc. The second factor related to the prevalence of infectious disease and also to the metabolic disorders. However it should be noted that adolescent's nutrition reflects the cumulative effects of the childhood health and nutrition and some instances even maternal factors too.

2. MATERIALS AND METHOD

2.1. Study design and sampling

A sample of 200 students in the age group of 13-19 years was randomly selected from the four different educational institutions of the Tirupati town, Chittoor district of Andhra Pradesh, i.e., 50 adolescent girls from each institution.

2.2. Tools for Data Collection

To gather the data, a survey method was used with a questionnaire. Before administering the tool, the purposes of the study were explained to the respondents and rapport was established through informal conversations. Whether the respondents was to be interviewed or could be asked to write down her responses on her own decided on the spot depending upon the level of literacy of the respondent and her choice.

A questionnaire containing relevant questions was designed by the researcher to collect the pertinent details required for the study. All questions were coded. The standard questionnaire consisted of a variety of multiple-choice, open-ended and yes/no questions. In this knowledge test questionnaire was prepared about demographic details and nutritional knowledge. A questionnaire containing 50 questions to collect the data from the respondents. The information was collected under the following headings:

- i. General Information - Information regarding the Name, Age, Sex, Type of Family, Family size, Education level, Occupation, and Income level.
- ii. Information regarding Nutrition Knowledge - Questions related to their Food preferences, Basic Food groups, Nutrient rich foods, Energy rich foods, Protein rich foods, Vitamin rich foods, Mineral and Fiber rich foods and their Hygiene practices are included.

The respondents were interviewed at their educational institutions. Each interview for about 30 minutes. All respondents extended their full Cooperation.

2.3. Data Analysis

The data gathered was appropriate to statistical methods. The data related to knowledge were tabulated. Frequency was calculated for the knowledge levels. The effects are shown graphically by using bar diagrams. Chi-square test is used to test 'Goodness of fit'.

3. RESULTS & DISCUSSION

Healthy eating during adolescence is important as body changes during this time affect an individual's nutritional and dietary needs. Adolescents are becoming more independent and making many food decisions on their own. Many adolescents experience a growth spurt and an increase in appetite and need healthy foods to meet their growth needs. Adolescents tend to eat more meals away from home than younger children. They are also heavily influenced by their peers. Meal convenience is important to many adolescents and they may be eating too much of the wrong types of food (for example, soft drinks, fast-food or processed foods).

The important **nutrients** that need to increase during **adolescence** include energy, protein, calcium, and iron. Energy needs **of adolescents** are influenced by activity level, basal metabolic rate, and increased requirements to support pubertal growth and development.

3.1. Knowledge of Adolescents on Nutrition Levels

Inadequate knowledge on nutrition education is found to be the basic cause for highest maternal mortality prevalent in India. Teenagers have the reputation of having the worst eating habits. They may skip a meal particularly breakfast. Those who take breakfast may consume foods which are nutritionally inadequate. Missing breakfast may be due to eating disorders, peer pressure, lack of time and no nutritional awareness. They may eat fast-food which are generally inadequate in calcium and Vitamin-A but high in calories, saturated fat and sodium.

Nutritional requirement can be defined as the minimum amount of the absorbed nutrient that is necessary for maintaining the normal physiological functions of the body. Balanced diet is one which contains different types of foods in such quantities and proportions so that the need for calories, proteins, minerals, vitamins and the other nutrients is adequately met and a small provision is made for extra nutrients to withstand short duration of leanness. A balanced diet should provide around 60-70

percent of total calories from carbohydrates, 10-12 percent from proteins and 20-25 percent of total calories from fat.

Table – 1 Distribution of the Respondents according to their opinion on Basic Food Groups

S. No.	Basic Food Groups	Frequency(N = 200)	Percentage (%)
1.	5 Groups	109	54.5
2.	3 Groups	49	24.5
3.	2 Good groups	42	21.0

The data in the table No.1 shows that the distribution of the respondents opinion of the Basic Food Groups. The results suggested that majority (54.5 percent) of the respondents were found to possess knowledge about that there are 5 basic food groups, and 24.5 percent of the respondents opined that there are 3 basic food groups. The remaining 21 percent of them opined that there are 2 basic food groups.

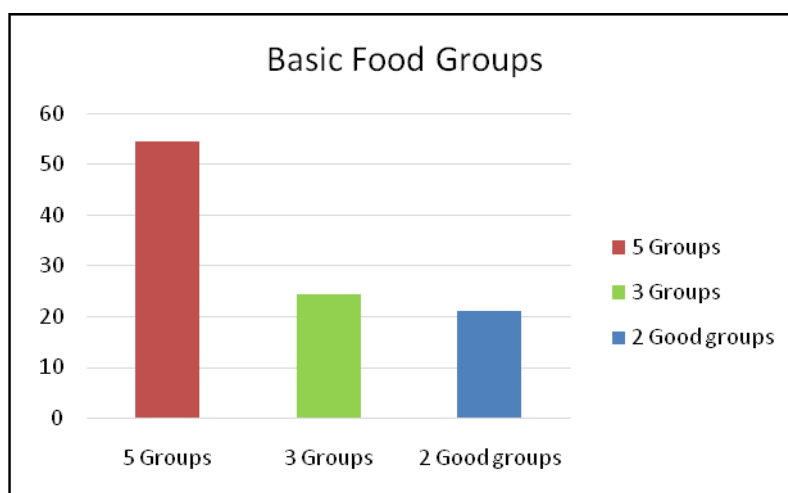


Figure: 1 Respondents opinion on Basic Food Groups

Table – 2 Distribution of the Respondents according to their opinion on Carbohydrate rich Foods

S. No.	Carbohydrate rich Foods	Frequency(N = 200)	Percentage (%)
1.	Vegetables	21	10.5
2.	Rice, Ragi, Wheat, Jowar	124	62.0
3.	Roots & tubers	55	27.5

The major function of carbohydrate and fat is the supply of energy. Therefore in the present context, the energy intakes projected are intended to reflect the macronutrient (carbohydrate, protein, fat) status. In the I Indian

context, cereal foods alone contribute about 60-75 percent of the total calories. Cereals are the richest source of carbohydrate, the energy value of these diets may be considered as direct pointer of carbohydrate intake.

The data in the table No. 2 shows that the respondents opinion on Carbohydrate rich Foods. More than half (62 percent) of the respondents opined that Rice, Ragi, Wheat and Jowar are the Carbohydrates rich foods. While other 27.5 percent of the respondents opined that Roots & Tubers are the Carbohydrates rich foods. A small percentage i.e., 10.5 percent of them opined that Vegetables are the Carbohydrates rich foods.

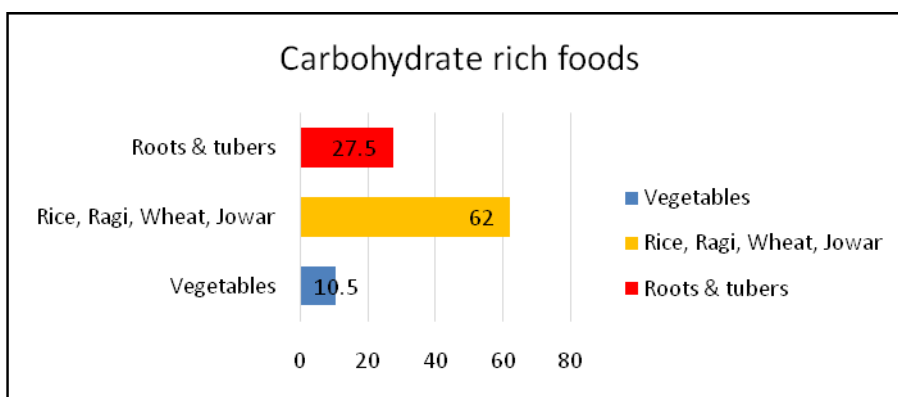


Figure: 2 Respondents opinion on Carbohydrate rich Foods

Table – 3 Distribution of the Respondents according to their opinion on Vitamin rich Foods

S. No.	Vitamin rich Foods	Frequency(N = 200)	Percentage (%)
1.	Fruits & Vegetables	122	61.0
2.	Fats & Oils	22	11.0
3.	Both	56	28.0

Micro nutrients (Vitamins & Minerals) namely Vitamin A and C, Zinc, Calcium and Iron play a significant role in the growth and development of adolescents.

Plants produce vitamins like Vitamin C, β-Carotene and tocopherols. These chemicals are known as high value, low volume chemicals. The secondary plant metabolites other than vitamins are referred to as nutraceuticals. Most of these compounds are flavonoids, polyphenols which are also known to inhibit free radicals generated in the cellular system when they are obtained through the diet.

The data in the above table No. 3 shows that the respondents opinion on Vitamin rich foods. Among the respondents, majority (61 percent) of the respondents opined that Fruits & Vegetables are the Vitamin rich foods and 28 percent of the respondents opined that both Fruits and Vegetables and Fats and Oils are the Vitamin rich foods. Remaining 11 percent of them opined that Fats and Oils are the Vitamin rich foods.

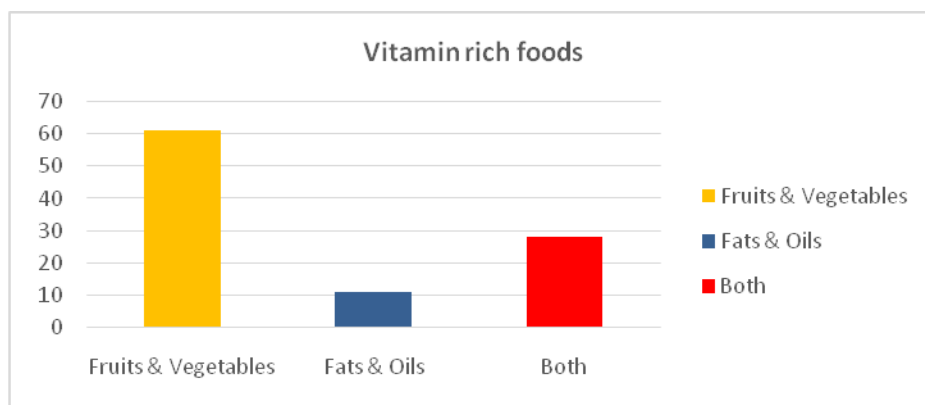


Figure: 3 Respondents opinion on Vitamin rich Foods

Table – 4 Distribution of the Respondents according to their opinion on Iron rich Foods

S. No.	Iron rich Foods	Frequency(N= 200)	Percentage (%)
1.	Jaggery, Nuts	131	65.5
2.	Vegetables	25	12.5
3.	Pulses	44	22.0

Most of the population in Asian Countries had a negligible iron stores as indicated by poor bone marrow, haemosiderin levels and low levels of liver iron. Iron losses during menstruation (15-30 mg very cycle) increase the iron requirement of adolescents and adult woman.

The low intake of iron might be because of absence of iron rich foods in their diets. Further the availability of iron from cereal –legume based diets is very poor. Various factors inhibit iron absorption of which phytates and tannins present in plant foods are most important. The results of the present study reveal that the 65.5 percent of the adolescent girls are aware of the iron rich foods.

The above table No.4 shows that the respondents opinion on Iron rich foods. I t is clear from the above table that considerable number of the respondents (65.5 percent) were found to be aware of the Jaggery & Nuts are the Iron rich foods, and 22 percent of the respondents aware that Pulses are the Iron rich foods. Remaining 12.5 percent of them aware that Vegetables are the Iron rich foods.

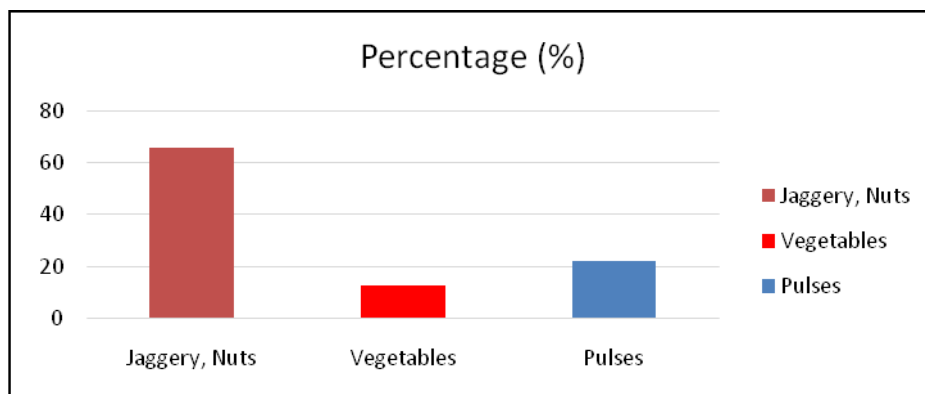


Figure: 4 Respondents opinion on Iron rich Foods

4. CONCLUSION

Normal nutritional needs remain throughout the life. Good nutrition generally can improve the spirit and quality of life, can speed recovery from illness and prolong life. Adolescents are a unique interventions point of life cycle. It is a stage of new ideas and a point at which lifestyle choices may determine an individual’s life course. Although adolescents are well informed about nutrition and good eating practices, this knowledge is often not translated into their daily lives.

The present study reveals that of adolescent age group have knowledge regarding Nutrition but they are not well informed Nutritional needs for maintaining Good Health. They are also not much aware of health effects and consequences of unhealthy eating practices. Therefore, there is a need for Nutritional Intervention Programmes for adolescences. Educating the adolescence on Nutrition and Health aspects will go a long way to lead a better life.

5. REFERENCES

1. Michels N, De Henauw S and Beghin L. Ready-to-eat cereals improve nutrient, milk and fruit intake at breakfast in European adolescents. *European Journal of Nutrition*. 2015; 55(2):771–779.
2. Pedersen S, Gronhoj A and Thogersen J. Following family or friends. Social norms in adolescent healthy eating. *Appetite*. 2015; 86:54–60.
3. Alwyn S Todd, Steven J Street and Jenny Ziviani. Overweight and obese adolescent girls: The importance of promoting sensible eating and activity behaviors from the start of the adolescent period. *International Journal of Environmental Research and Public Health*. 2015; 12(2):2306–2329.
4. WHO child growth standards,2007 (http://www.who.int/childgrowth/en/who2007_stata.zip)
5. Kersting M., Sichert-Hellert W, Vereecken C. A, Diehl J, Beghin L, De Henauw S, Sette S and HELENA Study Group. Food and nutrient intake, nutritional knowledge and diet-related attitudes in European adolescents. *International Journal of Obesity*. 2008. S35-41.
5. World Bank. *Repositioning nutrition as central to development: a strategy for large scale action*. Washington, DC: World Bank; 2006.

6. Kurz KM, Johnson-Welch C. The nutrition and lives of girls in developing countries: findings from the nutrition of adolescent girls research program. Washington, DC: International Center for Research on Women; 1994.
7. www.ccsenet.org/gjhs Global Journal of Health Science Vol. 5, No. 5; 2013 206
8. Fidler Mis, N., Kobe, H., and Stimec, M. (2012). Dietary intake of macro- and micronutrients in slovenian adolescents: comparison with reference values. *Annals of Nutrition and Metabolism*, 2012, 61(4), 305-313.
9. Grant, M. J. (2012). Health, sport and nutritional information: tailoring your approach. *Health Information and Libraries Journal*, 2012, 29(2), 87-89.
10. Hallstrom, L., Vereecken, C. A., Labayen, I., Ruiz, J. R., Le Donne, C., Garcia, M. C and Sjöström, M. (2012). Breakfast habits among European adolescents and their association with sociodemographic factors: the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) study. *Public Health Nutrition*, 2012, 15(10), 1879-1889.
11. Huffman, S. L., & Schofield, D. (2013). Enhancing young child nutrition and development in developing countries. *Maternal Child Nutrition*, vol.9, 6-11.
12. World Health Organization. Global Accelerated Action for the Health of Adolescents (AA-HA!) guidance to support country implementation..Geneva: WHO; 2017
13. UNICEF.Consensus statement on zinc nutrition and public health in developing countries. New York, UNICEF,1993.
14. Das Gupta M, Engelman R, Levy J, Luchsinger G, Merrick T, Rosen JE. The power of 1.8 billion: adolescents, youth, and the transformation of the future. *State of the world population*. New York (NY): UNFPA; 2014.
15. SCN – News 2004. “Nutrition and the Millennium development goals – SCN News 28 – July, 2004.
16. Gong EJ, Spear BA, 1988. Adolescent growth and development: Implications for nutritional needs. *J Nutr Educ* 20: 273-278.
17. Johnson RK, Johnson DG, Wang MQ, Smicidas-Wright H, Guthrie HA.,1994. Characterizing nutrients intakes of adolescents by socio-demographic factors. *J Adolese health*: 15: 149-54.
18. Qamra S.R., Mehta, S., Deodhar, S.D., 1990. A Mixed Longitudinal Study of Physical Growth in Girls – 1. *Ind. Paediatr*. 27: 923-933.
19. Bharati P, Shame S, Chakrabarty S, Bharati S, Pal M (2009). Burden of anaemia and its socio economic determinants among adolescent girls in India. *Food Nutr Bull*. 2009 Sep; 30(3): 217-26.

20. Tarvinder Jeet Kaur, G.K. Kochar & Taru (2007). "Impact of nutrition education nutrient adequacy of adolescent girls", Vol.1, No.1, pp.51-55.