A Study of Nutritional Status of Adolescent Girls in Bijnor District

Prerna Verma

Assistant Professor, Department of Home Science, Vivek College of Education,
Bijnor, Uttar Pradesh, India

Abstract—*Introduction: Adolescent girls are backbone of healthy and progressivefamily and thus future builders of positive health of community. To attain healthy reproductive outcome and efficient physical activity nutritional status of adolescent girl is valuable. In India especially in rural area there is high prevalence of malnutrition amongst adolescent girls. In India adolescents (10-18) constitute 21.4% of population, comprising one fifth of the total population. Growth monitoring by anthropometric measurement during this period is not only a health indicator but also a predictor of various morbidity in the community.*

Objectives: *The objective of the study was to determine the nutritionalstatus of adolescent girls in rural and urban area of Bijnor district and to study the socio-demographic factors affecting the nutritional status of adolescent girls in rural and urban area of Bijnor district.*

Material & Method: *A community based cross sectional study was carried out amongst adolescent girls in the age group of 10-18 years. Two Government schools of Bijnor district were selected for study purpose. Study period was from November to March 20117. Total 120 adolescent girls were included. Variables included were age, Ordinal position, Type of Family, Family Size, socio-economic status, Food habit, weight, Height and dietary intake pattern, BMI (Body Mass Index), Knowledge Index.*

Result: *Amongst all adolescent girls 31.66% of subjects are normal weight, 23.16% of subjects are of grade I Obesity, 16.66% grade II obesity, 16.66% grade III obesity and remaining 5.8% were underweight.*

Conclusion*: It is concluded that majority of adolescent girls were normal weight.There was significant association between socio-economic status (SES) and nutritional status of adolescent girls. Nutritional status has profound effect on health and school performance of adolescent girls.*

Keywords*: Nutritional status, Adolescent girls.*

1. INTRODUCTION

As per WHO, the age group of 10-18 years is considered as adolescence. Adolescence is a time when the body prepares itself for the nutritional demands of pregnancy, lactation, and heavy workloads that girls will soon experience. Adolescent girls are backbone of healthy and progressive family and thus future builders of positive health of community. Adolescence is a crucial part of life. During this period, adolescents gain up to 50% of their adult weight, 20% or more than that of their adult height and 50% of their adult skeletal mass1.To attain healthy reproductive outcome and efficient physical activity nutritional status of adolescent girl is valuable.

Adolescents are the best human resources. But for many years, their health has been neglected because they were considered to be less vulnerable to disease than the young children or the very old. Their health attracted global attention in the last decade only.2 One way to break the intergenerational cycle of malnutrition is to improve the nutrition of adolescent girls prior to conception. The vicious cycle of malnutrition, if not broken, will goes on resulting in more and more severe consequences3. Nutrition is the cornerstone of socio-economic development and that nutritional problems are not just medical problem but multifactorial with roots in many other sectors of developments such as education, demography, agriculture and rural development.4According to NFHS-3 malnutrition level are higher in adolescent girls as almost half of the girls i.e. 46.8% in age 15-19 years are undernourished5. Among women who are thin, almost half (45 per cent)are moderately or severely thin5. Nutritional problems measured in NFHS-3 are particularly serious for rural women. In general adolescent girls are the worst sufferers of the ravages of various forms of malnutrition because of their increased nutritional needs and low social power6.

Unfortunately assessment of nutritional status of adolescent girls has been the least explored area of re-search particularly in rural India.7 Socio-cultural factors, peer influences, craze for trendy foods; mood; body image; and extreme changes in the lifestyle, and food habits of adolescents in recent past have affected both their nutrient intake and needs8.

So, now it is essential to study the dietary pattern of adolescent girls especially in rural area for designing strategy to tackle the problem of poor nutrition. Hence, this study was conducted to know the nutritional status of adolescent girls in rural and urban area of Bijnor.

2. OBJECTIVES

The objective of the study was to determine the nutritional status of adolescent girls in rural and urban area of Bijnor district and to study the socio-demographic factors affecting the nutritional status of adolescent girls in rural and urban area of Bijnor district.

3. MATERIAL & METHOD

A community based cross sectional study was carried out amongst adolescent girls in the age group of 10-18 years. There are two Government schools in which adolescent girls are studying in Bijnor district and we have selected both the schools for study purpose. After taking permission from the principal of the schools, all the adolescent school girls aged 10-18 years who were enrolled in the selected schools and given consent for interview and anthropometric measurements were included in the study. Study period was from November to March 2017. In this study one respondent was considered as a sample unit. Total respondents selected were 120, respondents selected based on regularity on attendance.

Keeping in view the objectives and the variables under study an interview schedule framed to consists farmed to consists three parts in the schedule first part consists of socio characteristics of the respondents , second part is related to assess the food habit of the respondents.

4. VARIABLES

Variables include were age, Socio economic status, ordinal position, type of family, family size, Food habit, height, weight, BMI (Body Mass Index), knowledge index. 24 hours dietary recall method was used to calculate the calories.

5. AGE ESTIMATION

Assessment of age is most essential for conducting growth studies. The accurate age of the adolescent girls was recorded from the school registration books.

6. HEIGHT

Height in centimetres was marked with the help of a measuring tape.

7. WEIGHT

Weight in Kg was marked with the help of a weighing machine.

8. BMI

BMI of each participant was computed by using the formula weight (Kg)/ height (m^2) and were graded in different grades of nutritional status according to proposed criteria for Asians.

Calorie calculation was done by using 24 hr recall method.

9. KNOWLEDGE INDEX

Based on the score obtained by all beneficiaries knowledge index was worked by using the following formula.

$$\frac{\text{SCORE OBTINED}}{\text{OBTAINABLE SCORE}} \times 100$$

10. STATISTICAL TOOLS

Frequency and percentage is used to tabulate and interpret the data normal distribution is used to categories the respondents into low medium and high classes.

11. RESULT AND DISCUSSION

Table 1: Distribution of study subject as per their Age.

Age	F	Percentage
12-14	38	31.6
14-16	34	28.3
16-18	48	40

Table 2: Distribution of study subject as per their Location.

Location	F	Percentage
Rural	87	72.5
Urban	33	27.5

Table 3: Distribution of study subject as per their Ordinal position.

Ordinal Position	F	Percentage
First born	50	41.66
Second born	40	33.33
Third born	20	16.66
Last born	10	8.33

Table 4: Distribution of study subject as per their Family size .

Family size	F	Percentage
Small	46	38.33
Medium	39	32.53
Large	35	29.16

Table 5: Distribution of study subject as per their Family type .

Family type	F	Percentage
Nuclear	35	29.16
Joint	59	49.16
Extended	26	21.66

Table 6: Distribution of study subject as per their Food habit .

Food habit	F	Percentage
Vegetarian	76	63.3
Non-vegetarian	29	25
Ova-vegetarian	15	12.5

Table 7: Distribution of study subject as per their intake of energy.

RDA for energy kcal/ day	F	Percentage
Below RDA 2010	20	16.66
Up to RDA 2010	45	37.5
Above RDA 2010	55	45.83

Table 8: Distribution of study subject as per their intake of Protein.

RDA for Protein Gm./ day	F	Percentage
Below RDA 2010	22	18.33
Up to RDA 2010	50	41.66
Above RDA 2010	48	40

Table 9: Distribution of study subject as per their intake of Fat

RDA for Fat Gm./ day	F	Percentage
Below RDA 2010	20	16.66
Up to RDA 2010	48	40
Above RDA 2010	52	43.33

Table 9: Distribution of study subject as per their Body Mass Index.

BMI	F	Percentage	Category
18.50	7	5.8	Underweight
18.50-24	38	31.66	Normal
25.0-29.0	35	29.16	Over weight
29.9-39.9	20	16.66	Grade I obesity
Above 40	20	16.66	Grade II obesity

The nutritional status of adolescent girls, the future mothers, contributes significantly to the nutritional status of the community. The nutritional requirement increases during adolescent period. In this present study that 40% of respondents were 16-18 years, 31.6 % were 12-14 years and remaining 28.3% were in the age group of 14-16 years.

72.5% respondents belonged to rural area and remaining 27.5% were of urban area with reference to ordinal position it can be elucidated that 41.66% students were first born,33.33% were second born 16.66% were third born and remaining 8.33% were last born. More number of respondents 38.33% were students belonged to a small family, 32.53% were medium family, and 29.16% were belonged to large family size. Among family type majority of the respondents 49.16% were belonged to joint family 29.16% were nuclear family, 21.66% were extended family type.

Out of total subject 63.3% respondents were vegetarian, 25% were non-vegetarian and remaining 12.5% were ova-vegetarian. The energy intake of 45.88% respondents were above RDA 37.5% were up to RDA 16.66%were below RDA.The proteinintakes of 41.66% respondents were up to RDA 40% was above RDA 18.33%was below RDA. The Fatintakes of 43.33% respondents were above RDA 40% was up to RDA 16.66%was below RDA.

Out of total subject 31.66%of subject are normal weight 29.16% of subject were overweight 16.66% were grade I obesity 16.66% were grade II obesity and remaining 5.8% were underweight.

12. LIMITATION

As this is a school based study, we could not find the difference regarding nutrient intake among the school and non-school going adolescent girls.

13. CONCLUSION

It is concluded that majority of adolescent girls were normal weight. There was significant association between socio-economic status (SES) and nutritional status of adolescent girls. Nutritional status has profound effect on health and school performance of adolescent girls.

REFERENCES

[1] NeyamulAkhter, Farida YasminSondhya. Nutritional status of adolescent'sinbangladesh: Comparison of severe thinness status of a low-income family's adolescentsbetween urban and rural Bangladesh. J Edu Health Promot 2013;2:27.

[2] Kalhan M, Vashisht B, Kumar V, Sharma S. Nutritional status of adolescent girls ofrural Haryana. Internet J Epidemiol 2010; 8(1).

[3] AfeworkMulugeta et al. Nutritional Status of Adolescent Girls from ruralcommunitiesof Tigray, Northern Ethiopia.Ethiop.J.Health Dev. 2009;23(1):5-11.

[4] K. Park. Park's Text Book of Preventive and Social Medicine, 22nded.Jabalpur: BanarasidasBhanot Publication; 2013. P 563.

[5] International Institute for Population Sciences and Macro International. National familyhealth survey India(NFHS-3), 2005-06,volume I.Mumbai:IIPS; 2007.p304.

[6] Choudhary S, Mishra CP, Shukla KP. Correlates of nutritional status of adolescent girlsin the rural area of Varanasi. The Internet J of Nutr and Wellness2009;7(2).

[7] H.R. Shivaramakrishna, A.V. Deepa and M. Sarithareddy. NutritionalstatusofadolescentGirls in Rural Area of Kolar District -A Cross-Sectional Study.AlAmeen.J Med Sci(2011);4 (3):243-246.

[8] National Nutrition Monitoring Bureau. Diet and nutritional status of rural population,Hyderabad: National institute of Nutrition, Indian Council of medicalresearch;2002. P91 .

[9] SoumyajitMaiti, KauhikChattterjee, KaziMonjur Ali, DebidasGhosh, shyamapadapaul. Assessment of nutritional status of ru-ral early adolescent schoolgirls in dantan-iiblock, paschimmedinipur district, West Bengal. National Journal of Commu-nitymedicine2011;2(1): p14-18

[10] Venkaiah K, Damayanti K, Nayak MU, Vijayaraghavan K. Diet and nutritional statusof rural adolescents in India. European J ofclinicalNutr 2002; 56: 1119–1125

[11] Goyle A. Nutritional status of girls studying in a government school in Jaipur city asdetermined by anthropometry. Anthropologist 2009; 11: p225-227.

[12] CH Maliyeetal. Nutrient Intake Amongst Rural Adolescent Girls of Wardha.Indian J Community Med. 2010 July; 35(3): 400–402.

[13] BeenaSachan, M.Z. Idris, Savita Jain, ReemaKumari, Ashutosh Singh. Nutrient Intake Among School going Adolescent Girls in Lucknowdistrict,India.Journal of Biomedical and Pharmaceutical Research 2013;2(4):p20-25.

[14] YogeshSaxena, Vartikasaxsena. Nutritional Status in Rural Adolescent Girls Residing at Hills of Garhwal in India. Internet Journal of Medical Update 2011 July;6(2):p3-8.