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A STUDY TO ASSESS THE NUTRITIONAL STATUS AMONG ADOLESCENT GIRLS IN SELECTED RURAL AREA, KANPUR

Mr. Minu S R, Ms. Preeti Shukla, Mr. Ashwani Kumar, Mr. Manu Chacko, Mr. Satheesh A

Rama College of Nursing, Rama University, Kanpur, Uttar Pradesh, India

Email Id: dean.nursing@ramauniversity.ac.in

Abstract: Nutritional deficiencies have for reaching consequences, especially in adolescent girls. If their nutritional needs are not met, they likely to give birth to undernourished children, thus transmitting under nutrition of future generations. The aim of this study is to assess the Nutritional status among adolescent girls in selected rural area, Kanpur. A descriptive research design with cross sectional survey approach was used. Study was conducted in rural area of Shivrajpur Primary Health Center, Kanpur. Non probability convenient sampling technique was used to select 120 adolescent girls who fulfilled inclusion criteria. Result: most of the samples BMI falls between normal range and highest percentage of manipulation is found among the age group of 11-12 years and rest of the adolescent girls fall in various degree of malnutrition.

Key words: Malnutrition, Adolescent girls, Nutritional status

Introduction

Malnutrition is a condition that result from eating a diet in which nutrients are either not enough or too much such that the diet causes health problem[1]. It is a category of diseases which includes under nutrition and over nutrition.[2]

Adolescence is an important time for gain in height ,weight as well as both muscle and fat increases.[3] It is also a period of emotional and psychological changes during which there is a tendency to conventional dietary habits.[4] During adolescence 20% of final adult height and 50%of adult weight are attained, bone mass increases to 45% and dramatic bone remodeling occur and soft tissues organs and even red blood cell mass increase in size.[5] Girls gain relatively more fat and boys gain relatively more muscle. Thus the requirement to energy as well as proteins increases considerably during this period. Both energy and protein needs correlate more closely with the growth pattern than with the chronological age[3], their actual nutritional needs also vary with physical activity. They encounter a series of serious nutritional challenges, not only affecting their growth and development but also their living hood as adult yet adolescent remain a largely neglected and hard to reach population specially girls[6,] This situation is further complicated when adolescents are often exposed to infections and parasites that can compromise nutritional status. Increased risk of infection from sexually transmitted disease is found among those sexually active.

The consequences of Nutritional deficiencies are seen especially among adolescent girls. If their nutritional needs are not met, they are likely to give birth to undernourished children and thus there is a chances transmitting under nutrition of future generations.[7] Malnutrition predisposes to infection and infection to malnutrition and the morbidity arising there from as a result of complication from such infectious disease as tuberculosis and gastro-enteritis is not inconsiderable. The high rate of maternal mortality, still birth and low birth weight are all associated with malnutrition.[8]

One way to break the intergeneration cycle of malnutrition is to improve the nutrition of adolescent girls prior to conception.[9] Therefore, monitoring weight, height and body mass index (BMI) (weight /height) is essential to determine the adequacy of energy intake for individual adolescent. [10] In recent years, increasing concern for the nutritional status of adolescents by nutritionals, health care professionals, politicians and administrators.[11]

Nutritional indicates of adults in India, reveals more than one third (36%) of women have a BMI below 18.5 indicating a high prevalence of nutritional deficiency among women who are thin. Forty percent

of women are moderately or thin. Thirteen percent of women and nine percent of men are overweight or obose.[12]

Objectives

- Assess the nutritional status of adolescent girls
- Associate nutritional status with selected demographic variables

Methodology

A descriptive research design with cross sectional survey approach was used. Study was conducted in rural area of Shivrajpur Primary Health Center, Kanpur. Non probability convenient sampling technique was used to select 120 adolescent girls who fulfilled inclusion criteria.

The tool contains samples demographic profile, standardized weighing machine and height scale. Validity of the weighing scale was measured by measuring one person in a standard weighing machine and same time weighing the person with the weighing machine used for the present study. Reliability of the weighing instrument was found by weighing the same person two times at the interval of ten minutes and the result found similar both times.

Data collection procedure

Assessment of the nutritional status was done by measuring height, weight and BMI from 120 samples. Before data collection written permission was obtained from the Medical officer of PHC and adolescent girls was identified through house to house survey and then verbal consent was taken from the adolescent girls. All the girls were assembled at one place and height, weight were measured simultaneously for every girl. Per day around 30 adolescent girls were assessed for 4 days.

Results

Socio demographic variables shows that majority 30.8% of adolescent girls were aged between 11-12 years, 54% were studying in 8th standard, almost all 100% were belonging to Hindu religion and vegetarian (table-1).

Percentage wise classification of adolescents according to BMI shows that most of the samples 75.8% were between the normal values 18.5 to 25 and lowest 4.1% of samples were above normal BMI value. Hence it can be interpreted that most of the samples BMI levels falls between normal values (table-2).

Percentage wise classification of adolescents according age and BMI shows that highest 13.3% of samples 11-12 year and lowest 1.6% of samples 17-18 years had below normal value, where as highest 16.6% of samples 11-12 year and lowest 13.3% of samples 17-18 years had normal BMI value. Highest 1.6% of samples 13-14 year, lowest 0.8% samples 11-12 year, 15-16 year and 17-18 year had above normal BMI value. Hence it is interpreted that most of the samples BMI level falls in normal range (table-3). There was no association found with selected demographic variable age and malnutrition level (table-4).

Table-1: Classification of adolescent girls according to demographic characteristics

Demographic variable		Frequency	Percentage
Age in years	11-12	37	30.8
	13-14	36	30
	15-16	33	27.5
	17-18	14	11.6
Class in which studying	8th	45	54
	9th	30	36
	10th	25	30
	11th	11	13
	12th	09	11
Religion	Hindu	120	100
Diet	Vegetarian	120	100

Table-2: Percentage wise classification of adolescents according to BMI

N=120

BMI level	Frequency	Percentage
Below 18.5	24	20
Between 18.5 to 25	91	75.8
Above 25	5	4.1

Table-3: Percentage wise classification of adolescents according to age and BMI

Age (in yrs)	Below 18.5	%	Between 18.5 to 25	%	Above 25	%
11-12	16	13.3	20	16.6	1	0.8
13-14	9	7.5	26	21.6	2	1.6
15-16	6	5	20	16.6	1	0.8
17-18	2	1.6	16	13.3	1	0.8

Table- 4: Association between age and malnutrition level

Age (in yrs)	Below 18.5	Between 18.5 to 25	Above 25	Chi-square value	Significance
11-12	16	20	1	8.028	Not significant p>0.05 level
13-14	9	26	2		
15-16	6	20	1		
17-18	2	16	1		

Discussion

- In the present study it was found that 39.8% of adolescent girls were aged between 15-19 years. This is similar to the study conducted by Varum Galki, Vasant Wagle who found that 48.5% were of age group 15-19 years.
- In the present study it was found that all adolescent girls were vegetarian, however Malhotra A Pass S found that only 49.3% of adolescent girls were vegetarian.
- In the present study it was found that almost all adolescent girls belong to Hindu religion which is similar to the study conducted by Patil S.N, Waink V, Wadke R, who found that almost 91.7% of adolescent girls belong to Hindu religion.
- In the present study it was found that 54% of adolescent girls were studying in 8th class which is similar to study conducted by Varun Galki, Vernal Wagh who found that 37.14% were studying in 8th class.
- In the present study it was found that 75.8% of adolescent girls had normal BMI between 18.5 to 25, however Patil S.N, Wadke R in their study found that only 25.9% of adolescent girls had normal BMI.
- In the present study it was found that 13.3% of adolescent girls aged between 11-12 years and had below normal BMI which is contrary to study conducted by Youfa Wang and Beydoum A, who found that 24.5% of adolescent girls between 11-12 years had BMI below normal which is almost double compare to present study.

Conclusion

Nutritional problem among adolescent girls will affect the health status and overall development. Study concluded that most of the samples BMI fall between normal range and highest percentage of malnutrition is found among the age group of 11-12 years and rest of the adolescent girls fall in various degrees of malnutrition.

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