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# STUDY ON NUTRITIONAL STATUS OF ADOLESCENT GIRLS IN RURAL FIELD PRACTICE AREA OF A TERTIARY CARE TEACHING HOSPITAL OF JHARKHAND

Community Medicine

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## ABSTRACT

**Background & Objectives:** Adolescence is the age group between 10 – 19 years, a phase of transition between childhood and adulthood. It is the 2nd most critical phase of physical growth after 1st year of life. The present study aims to describe the socio demographic profile and to assess the nutritional status and various nutritional problems among adolescent girls.

**Methods:** This was a descriptive cross sectional study done among adolescent girls attending AWCs. Three AWCs ( Chakla, Dardag, Jhiri) were randomly selected in the field practice area of Rajendra Institute of Medical Sciences, Ranchi. Duration of study was 3 months ( June 2017 to August 2017). Total sample size was 151. Templates were generated in MS Excel and data analysis was done using SPSS software.

**Result & Conclusion:** We found that out of 151 adolescent girls 41 (27.15%) were malnourished and 43(28.47%) among them were anemic. Most 108(71.34%) were from non tribal ethnicity. All the adolescent girls were availing Government schemes at school or at AWCs in the form of food rations, IFA supplements, and cash assistance.

## KEYWORDS

Nutritional status, Adolescents, Rural

**Introduction:**

Adolescent is the period of life between 10-19 years of age. It is one of the most rapid phases of human development, a stage of transition between childhood and adulthood. The term adolescence is derived from Latin word "adolescere" meaning to grow and to mature[1]. Although adolescence is a continous process, it is devided into 3 phases-

**Early** adolescence (10 – 13 years), **Mid** adolescence (14- 16 years) and **Late** adolescence (17 – 19 years).[1] During this period, individuals gain about 50% of adult body weight and height with a unique pattern of sexual dimorphism[2] It is a window of opportunity for the improvement of nutritional status and correcting poor nutritional practices. During this time, physical changes affect the body's nutritional needs. Adolescent nutrition is therefore important for supporting the physical growth of the body and for preventing future health problems[3].

Adolescent girls are the vital bridge between present and future generation so, adolescent nutrition is a major concern all over the world[4]. Inadequate quality and/or quantity of food are the prime determinants of nutritional problems. Nutrition is especially essential for adolescent girls as any nutritional deficiency experienced during this critical period of life can have an effect on the future health of the individual and their offspring. The rapid physical changes of adolescence have a direct influence on a person's nutritional needs. The growth spurt that occurs in adolescence creates increased demands for energy and nutrients[3].

Adolescents therefore constitute a nutritionally vulnerable group for several reasons, including their high requirements for growth, their eating patterns, and their susceptibility to environmental influences. Compounded with growth, adolescent pregnancy exposes both mother and child to adverse health and socioeconomic consequences, particularly if the mother is stunted or undernourished. Girls are particularly at high risk because of gender discrimination. In addition to this, adolescent girls may be at risk for inadequate intake of iron and calcium. The main nutritional problems of adolescents are undernutrition and Iron deficiency anaemia along with other micronutrient deficiencies[2]. There are various programs run by the government of India for the improvement of nutrition and health status of adolescent girls like- National Nutritional Anaemia Prophylaxis programme, ICDS Scheme, Nutrition Program for Adolescent Girls, Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (SABLA), Kishori Shakti Yojna etc.

Adolescents constitute over 21.4% of the population in India and adolescent girls constitute about 10 percent of the Indian population[5]. India has the highest underweight adolescent girls population of 47% in the age group of 15-19 years[6].

Since studies on nutrition of adolescent girls are rare from a tribal predominant state so this study was carried out to assess the nutitional status of adolescent girls and to find out their nutritional problems.

**Methods:**

A descriptive cross sectional study was carried out in the 3 randomly selected AWCs (Chakla, Dardag, Jhiri) of the rural field practice area of Rajendra Institute of Medical Sciences, Ranchi from June 2017 – August 2017 (3 months). All the adolescent girls registered in these AWCs and giving consent for the study were included. Total sample size came out to be 151(Jhiri-46, Dardag-65, Chakla-40).

**Study tool** comprised of a semi structured questionnaire containing the socio demographic variables and for Anthropometric measurement: Height and weight of the participants were measured by the standard technique. Height was measured to the nearest of 0.1 cm by making the girls stand against the wall and the distance between topmost point on the head (marked on the wall) and floor in centimeters and weight was taken to the nearest of 0.1 kg using a portable weighing machine. By measuring the height and weight of the respondents, the body mass index (BMI) was computed. WHO classification was used for the assessment of malnutrition and general physical examination was carried out. Templates were generated on MS Excel sheet and data analysis was done using SPSS software (version 20). The study was approved by the Ethics committee of the Institution.

**Results:**

The socio demographic profiles of the respondents are shown in Table 1. About 49.67% of the respondents belonged to the age group of 14-16 years. Most of the girls ( 95.4%) were enrolled in the school. Only 16.56% of the girls were involved in some form of occupations like housemaid, hand crafts, grazing of animals etc for financial assistance.

Table 2 shows the anthropometric measurements of the adolescent girls in terms of mean height, weight and BMI. Out of 3 AWCs the mean BMI of Jhiri AWC was found maximum.

Table 3 shows the distribution of malnutrition in the three AWCs. Total of 41 out of 151 (27.15%) of the girls were found to be malnourished (under nourished) on the basis of BMI.

About 43 out of 151(28.47%) of the adolescent girls were found to be anemic which is shown in figure 1.

All the adolescent girls were availing the government schemes for nutritional supplementation in the form of food rations, IFA supplements and cash assistance.

**Table 1: Socio demographic profile of the adolescent girls (n=151)**

| S. no. | Variable category | variables | Frequency | Percentage (%) |
|---|---|---|---|---|
| 1 | Age (years) | 10 – 13 years | 53 | 35.10% |
| | | 14 – 16 years | 75 | 49.67% |
| | | 17 – 19 years | 23 | 15.23% |
| 2 | Ethnicity | Tribal | 43 | 28.66% |
| | | Non Tribal | 108 | 71.34% |
| 3 | Religion | Hindu | 93 | 61.59% |
| | | Muslim | 09 | 5.96% |
| | | Christian | 31 | 20.53% |
| | | Others | 18 | 11.92% |
| 4 | Education | School going | 144 | 95.4% |
| | | Not school going | 07 | 4.6% |
| 5 | Occupation | Unskilled occupation | 25 | 16.56% |
| | | No occupation | 126 | 83.44% |
| 6 | Marital Status | Married | 09 | 6% |
| | | Un married | 142 | 94% |

**Table 2: Anthropometric measurements of the Adolescent girls:**

| S. No. | AWC'S | MEAN HEIGHT (cms) | MEAN WEIGHT (Kgs) | MEAN BMI ($kg/m^2$) |
|---|---|---|---|---|
| 1. | Chakla | 138.24 | 29.14 | 15.06 |
| 2. | Dardag | 142.6 | 33.80 | 16.81 |
| 3. | Jhiri | 151.09 | 42.27 | 18.54 |

**Table 3: Distribution of malnutrition (under nutrition) in the 3 Anganwadi Centres (n=41)**

| S. No. | AWC'S | Frequency | Percentage |
|---|---|---|---|
| 1. | Chakla | 33 | 80.49% |
| 2. | Dardag | 7 | 17.07% |
| 3. | Jhiri | 1 | 2.44% |
| | Total | 41 | 100% |

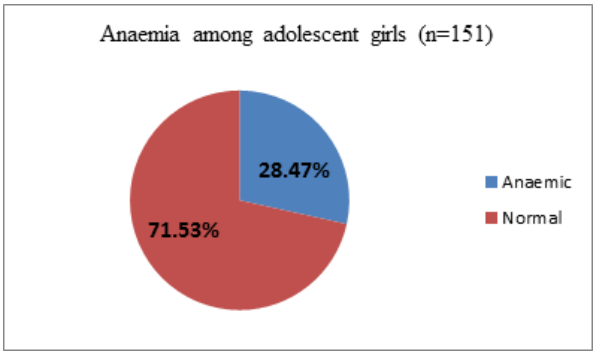


**Figure 1: Pie Chart showing distribution of anemia among adolescent girls.**

**Discussion:**

In the present study we found that maximum number(49.67%) of participants were in the age group 14-16years whereas in a study done by Ashish joy in Rajasthan 68% were in the age group 16-19 years[6].

In this study it was found that 27.15% of the adolescent girls were malnourished (under nourished) whereas in a study done by Kankana De in west Bengal, 30.61% of the adolescent girls were under nourished[2].

In the present study we found 28.47% of the adolescent girls to be anaemic which is approximately similar to the findings in another study done by Dr. Shivaramakrishna et al in Karnataka in which they found 34.8% 0f the adolescent girls to be anaemic[7].

**Conclusion:**

We conclude that 27.15% of the adolescent girls were suffering from malnutrition (under nutrition) on the basis of BMI. Literacy rate was found to be very high i.e 95.4%. Most of the adolescent girls were school going. Only 6% of the adolescent girls were married because most of them were aware about the legal age of marriage. Inspite of all the adolescent girls availing government schemes in the form of food rations, IFA tablets and cash assistance, 28.47% of the girls were found anemic.

**Limitations:**

Since the adolescent girls themselves were the respondents, and we did not interview the parents, socio economic status could not be calculated because total income could not be elicited. Also we did not assess total energy consumption per day and other micro nutrient deficiencies due to constraints of time and logistics.

**Conflict of Interest:** Nil
**Financial Support:** Nil

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