

# Prevalence and Knowledge on Anemia and Malnutrition among Early Adolescent Girls

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**Abstract:** Background: The 11 to 19 year old age is called adolescence. This is the period of rapid change and maturation when the child grows into the adult. One of the main problems during this phase of growth is the inadequate calorie intake. Studies have shown that girls in rural areas take a mean of 1355K.Cals/day in the 13-15 years and 1292 K.Cals/day in the 16-18 years which is much below the recommended age-groups. The health status of an adolescent determines the health status in his/her adulthood. Aims/objective: To assess the knowledge and prevalence of malnutrition and anemia among early adolescent girls. Material and methodology: A descriptive survey approach was adopted for the study. Method of sampling was randomized with 60 in size. Data was collected by using structured knowledge questioner and prevalence of anemia by estimation of HB% and anthropometric measurement to assess the malnutrition. Result: Regarding demographic variables 40 % samples were in the age group of 11 yrs., 63.33% of mothers were educated. Regarding level of knowledge 70% of samples were having inadequate knowledge, 12(20%) of them were malnourished and 14(23.33%) of them were anemic. Conclusion: The overall finding of the study reveals that early adolescent girls were having lack of knowledge regarding anemia and malnutrition, and prevalence of anemia and malnutrition is also high among this age group, hence there is a need to educate the adolescent girls regarding anemia and malnutrition to improve their knowledge and develop healthy life skills. Problem statement: "Study to assess the prevalence and knowledge on anemia and malnutrition among early adolescent girls in selected rural community area, Kolar".

## 1. Introduction

Adolescence is defined as period of personal development during which value system and preparing for adult role. It is a changing stage of physical, physiological and psychological development from puberty to adulthood. At present, more than 1.2 billion are adolescents in the world, this means that roughly one in every six persons is an adolescent. India has the largest adolescent population in the world. 21% of Indian population is adolescents (about 243 million). They are the future of the nation, forming a major demographic and economic force.

One of the most common health concerns among adolescent girls in our country is under nutrition and anemia. One third of the adolescent girls in India are underweight and as per the NFHS 3 data, 56 % are anemic. Poor nutrition, worm infestations and menstrual abnormalities,

Increased nutritional needs during adolescence relate to the fact that they gain, 20% of final adult height and 50% of adult. Girls required additional iron to compensate with menstrual blood loss. Around 40% of adolescent girls are anemic and 56% are severely under weight for age. It indicates high prevalence of nutritional deficiency which leads to anemia and malnutrition.

### Objectives of the Study

- 1) To assess the level of knowledge on anemia and malnutrition among early adolescent girls.
- 2) To assess the prevalence of anemia and malnutrition among early adolescent girls on the basis of hemoglobin and anthropometric parameters
- 3) To Determine the Association between Level of Knowledge of Early adolescent Girls on Anemia and malnutrition with selected Socio demographic Variable.

## 2. Material and Methods

A descriptive design with survey approach was adopted for the study. The study was conducted at Keeluhohalli village under Devarayasamudhra PHC, Mulabagal Taluk. By using simple random sampling technique 60 early adolescent girls were selected. Based on the objectives of the study a structured knowledge questionnaire was prepared on knowledge regarding anemia and malnutrition and prevalence of anemia assessed by checking HB% using Taliquest method and malnutrition is calculated by using the formula. The tool has 03 Sections, Section-A demographic data (07 items) Section-B Knowledge questionnaire (40items) and section -C Anthropometric measurement & hemoglobin level.

After obtaining permission from parents the researcher approached selected early adolescent girls & explained them about statement of problem & objectives of the study. After obtaining confidentiality data was collected from 60 students who met the inclusion criteria. and assessed there hemoglobin level & anthropometric measurements were recorded. Then the collected data analysis was done by using Descriptive statistics & inferential statistics

Descriptive analysis presented as Frequency, Percentage Mean and Standard deviation. Inferential statistics, Chi-square analysis was done to test the association between the level of knowledge and selected socio demographic variables. Two sided significance tests were used throughout, and the level of significance was set at  $p \leq 0.05$ .

## 3. Results

**Section: A Socio demographic variables of early adolescent girls**

Volume 7 Issue 8, August 2018

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**Table 1:** Distribution of samples based on their frequency & percentage of, N=(60)

SlNo	Socio demographic variables		Frequency	Percentage
1	Age	10yrs	02	3.33
		11yrs	24	40
		12yrs	22	36.66
		13yrs	04	6.66
		14yrs	08	13.33
2	Type of food	Vegetarian	7	11.66
		Mixed diet	53	88.34
3	Type family	Nuclear family	36	60
		Joint family	24	40
4	Education of mother	Less than SSLC	38	63.34
		More Than SSLC	22	36.66
5	Occupation of mother	Self employee/house wife	48	80
		Employee	12	20
6	Family income	<5000/month	20	33.33
		5001-10,000/month	18	30
		>10,000/month	22	36.66

The above table debits that majority (40%) of the samples were in the age group of 11years, 36.66% of samples were in 12 years, 6.66% of samples were in 13years,13.33% of samples were in 14years age and 3.33% were in 10years age group. With regard to type of food maximum (88.34%) of them take mixed diet and only 11.66% of them take vegetarian diet. In relation with type of family, 60% samples belong to nuclear family and 40% of them were from joint family. With regard to educational status of mother, 63.34% mother of adolescent girls were with below SSLC qualification and 36.66% of their mother were with above SSLC qualification.

With regard to occupation of mother 80% of mother of adolescent girls were self employee (working in their own fields) house wife and 20% of them were working in private sectors. Maximum (36.66%) of adolescents girls family income is more then 10,000/month, and 33.33% of adolescent girls family income is less than 5000/month.

**Table 2:** Distribution of samples based on level of knowledge on anemia and malnutrition

Sl. No.	Knowledge score	Frequency	%
1	Inadequate < 50%	42	70
2	Moderate 50 – 75%	18	30
3	Adequate >75%	-	-
<b>Total</b>		<b>60</b>	<b>100</b>

Above table shows that overall knowledge scores of adolescent girls on anemia and malnutrition. Majority (70%) of the adolescent girls had inadequate knowledge where as 30% of them had moderately adequate knowledge and none of them had adequate knowledge.

**Table 3:** Distribution of samples based on aspect wise level of knowledge on anemia and malnutrition

S no	Knowledge bases	Statement	Range	Mean	Standard deviation
1	Physiological changes during adolescent	06	4-1	0.66	0.81
2	Anemia	18	14-7	0.77	0.87
3	Malnutrition	16	15-5	0.93	0.96
4	Total	40	33-11	0.78	2.55

The above table-3 shows that the aspect wise mean value of adolescent girls. The above table depicts area wise mean knowledge scores on anemia and malnutrition. There were 3 areas. The highest mean 0.93 was seen in the area of “**malnutrition**” and the lowest 0.66 was seen in the area on “**physiological changes during adolescent period**”. Whereas the mean 0.77 seen in the area of Anemia.

**Section-2:- Prevalence of anemia and malnutrition among early adolescent girls on the basis of hemoglobin and anthropometric parameters**

Based on WHO Classification, anemia is classified as follows:

- HB: > 11 gm/dl – normal
- HB: 9-11gm/dl - mild anemia,
- HB: 7- 9- moderate anemia and
- HB: < 7 severe anemia

Based on the above HB % collected from adolescent girls were presented in table -4.

**Table 4:** Distribution of adolescent girls based on their HB%, n=(60)

HB%	10 yrs		11yrs		12yrs		13yrs		14yrs	
	f	%	F	%	f	%	f	%	f	%
Normal	2	1	4	16.68	4	18.18	2	50	4	50
Mild anemia	0		10	41.66	08	36.36	-		2	25
Moderate anemia			10	41.66	10	45.46	2	50	2	25
Severe anemia	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>02</b>	<b>100</b>	<b>24</b>	<b>100</b>	<b>22</b>	<b>100</b>	<b>04</b>	<b>100</b>	<b>08</b>	<b>100</b>

The above table shows that, majority (100%, 16.68%, 18.18%, 50% and 50%) of adolescent girls were having normal Hb% in all age groups(10years, 11 year 12years 13years and 14years) , whereas 41.66%, 36.36% and 25% of them were having mild anemia, 41.66%, 45.46% 50% and 25% of them were having moderate anemia and none of them were severe anemia.

Based on WHO Classification, malnutrition is classified as follows:

- 1) > 80% – normal
- 2) 70-80%- mild malnutrition
- 3) 60-70%-moderate malnutrition and
- 4) < 60 severe malnutrition

Based on the above degree of malnutrition adolescent girls were presented in table-5.

**Table 5:** Distribution of adolescent girls based on degree of malnutrition, N=(60)

S. No	Age	Normal	Mild	Moderate	Severe
1	10yrs	0	0	2	0
2	11yrs	2	8	6	8
3	12yrs	6	6	8	2
4	13yrs	0	0	4	0
5	14yrs	6	0	0	2
	<b>Total</b>	<b>14</b>	<b>14</b>	<b>20</b>	<b>12</b>

The above table reveals that out of 60 samples 14 adolescent girls were normal, fourteen adolescent girls were with mild malnutrition, 20 of them were with moderate malnutrition and 12 of them with severe malnutrition.

**Section –III: Association between level of knowledge on anemia and malnutrition with selected socio demographic variables.**

Chi-square was used to determine the association between the level of knowledge score and selected socio demographic variables. It is found that there is no association between knowledge scores selected socio demographic variables.

#### **4. Discussion**

In present study total 06 socio demographic variables were there, out of 60 adolescent girls 40% adolescent girls are in the age group of 11 years, 88.34% of adolescent girls diet pattern mixed diet, 60% of adolescent girls comes from nuclear family, 63.34% of adolescent girls mother educational status is less than SSLC and main occupation of their mother is 80% self employee and 36.66% of adolescent girls family income is >10000/month. Regarding level of knowledge 70% adolescent girls were having inadequate knowledge on anemia and malnutrition and prevalence of anemia out of 60 samples 24 of them were with moderate anemia and only 14 of them with normal HB%. With regard to malnutrition, out of 60 samples 14 members with normal weight for their age and 12 samples were with severe malnutrition.

It is found that from the entire socio demographic variable there is no association between knowledge scores with selected socio demographic variables. So null hypothesis (Ho2) was accepted for these variables.

#### **5. Conclusions**

The overall finding of the study reveals that early adolescent girls were having lack of knowledge regarding anemia and malnutrition, and prevalence of anemia and malnutrition is also high among this age group, hence there is a need to educate the adolescent girls regarding anemia and malnutrition to improve their knowledge and develop healthy life skills.

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