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A Study to Assess the Knowledge of adolescents' Girls Regarding the Prevention of Iron Deficiency Anemia in Modern Government Girls Inter College Pantnagar U.S. Nagar, Uttarakhand With A View to Develop an Information Booklet on Prevention and Management of Iron Deficiency Anemia

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Abstract

A study was carried out to find out the existing knowledge of adolescent's girls and to develop, implement an evaluation for adolescents' girls about knowledge about prevention of iron deficiency anemia among adolescent's girls. In the present study non- experimental design was used. The study was conducted at Modern Government Girls Inter College Pant Nagar U. S. Nagar, Uttarakhand. 100 adolescents' girls were selected as sample by non–probability convenient sampling technique. data were collected in two parts: Part A includes the question regarding their demographic variables and part-B the knowledge questionnaire regarding prevention of iron deficiency anemia. Section A: Description of sample in term of demographic variables. This study that out of 100 samples most of adolescents' girls 49% was having moderate knowledge, 22% adolescents' girls having adequate knowledge and 29% adolescents' girls having inadequate knowledge. It was revealed that majority of adolescents girls majority of the girls age (1%) belonged to the age group 12 years age, (4%) belonged to the age group 13 years, (15%) belonged to the age group 14 years, (20%) belonged to the age group 15 years while (34%) belonged to the age group 16 years and only (26%) of them belonged to 17 years age group. Maximum numbers of girls (85%) were Hindu and (15%) were Muslim, maximum numbers of girls 43% were belonged 11th standard and 26% were belonged 12th standard and 16% were belonged 9th standard and 15%were belonged 10th class, maximum numbers of girls (55%)of girls menarche age is 10-13 years and (45%) girls menarche age is 14-16 years, majority that is 88% had previous knowledge while only 12% do not have previous knowledge about prevention regarding iron deficiency anemia. On the basis of present study, the researcher concluded that most of the adolescents' girls had moderate knowledge about prevention of iron deficiency anemia. Researcher assessed the knowledge regarding prevention of iron deficiency anemia. Researchers also open –up new pathway for future studies on the topic for more generalization. This concluded that the how many adolescent's girls have knowledge regarding the prevention on iron deficiency anemia.

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INTRODUCTION

Anemia accounts for a majority of the

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nutritional problem across the globe and it is principally engendered by deficiency of iron. Although it occurs in all the age group, prevalence is on a higher side among women of childbearing age [1]. Its prevalence is inordinately higher among developing nations, because of low socioeconomic status and indigent access [2]. In developing countries, the adolescent group is more exposed to nutritional challenges and adolescent girls are more vulnerable to the disease. Studies showed that adolescent anemia was the greatest nutritional problem encountered in developing countries [3]. India had reported high prevalence of anemia among adolescent girls, which is apparently higher when compared with the other developing nations [4]. In developing countries, the adolescent group is more exposed to nutritional challenges and adolescent girls are more vulnerable to the disease. Studies showed that adolescent anemia was the greatest nutritional problem encountered in developing countries. India had reported high prevalence of anemia among adolescent girls, which is apparently higher when compared with the other *developing nations [5]*. The period between 10 and 19 years of Age has been defined as adolescence by the World Health Organization. This period has been considered as the transitional phase from childhood to adulthood. During this phase, major psychological, behavioral, and physical developments ensue; because of marked physical activity and rapid growth spurt adolescence needs additional nutritional requirements [6]. According to recent statistics, there were about 1.2 billion adolescents worldwide, who constitute one-fifth of the total world's population and the figures are escalating [7]. Developing countries account for about 5 million adolescents of the total adolescent population, and in India about 21% of the total population are adolescents. Presently, the prevalence of anemia among adolescent girls is on the rise in India. Since adolescent period signalizes the beginning of menstrual period in girls, they are at a higher risk for nutritional anemia [8]. In rural areas of India, girls get married and become pregnant during the late adolescent period, thus increasing the risk of adolescent anemia and low birth weight babies. There were many studies focused on anemia among pregnant women and children, but only few studies were available on anemia among adolescent girls. This study was aimed to find out the prevalence of anemia among adolescent girls and to correlate with socio demographic status in a rural area of south India. Adolescent girls are chosen for the study as by improving anemia and awareness among adolescent girls, maternal morbidity and mortality especially during pregnancy can be improved [9]. There are only few studies focusing on adolescent anemic girls. In view of the above, this study was carried out to find out the prevalence and factors associated with anemia among adolescent girls [10]. Health and Nutritional needs of adolescent girls are mostly ignored. The cumulative effect of poverty, under nourishment and neglect is reflected by their poor body size, growth and narrow pelvis as they grow into adolescence, making child bearing a risk. Girls between 13-18 years of age show lower percentage of iron, and with the onset of menarche become highly susceptible to anemia. Adolescent girls' health plays an important role in determining the health of future population, because adolescent girls' health has an intergenerational effect [11]. The cumulative impact of the low health situation of girls is reflected in the high maternal mortality rate, the incidence of low birth babies, high perinatal mortality, foetal wastage and consequent high fertility rates. WHO (2005) had reported that iron deficiency anemia is the common nutritional disorder in the word [12]. Globally anemia affected 1.62 billion people which correspond to 24.85% of the population. However the population with the greater number of individuals that is nearly 95% of them was non-pregnant woman [13]. National nutritional anemia control programme In India implemented through the primary health centers and sub centers. It aims at decreasing the prevalence and incidence of anemia in woman of reproductive age. Iron deficiency is the most prevalent micro nutrient deficiency and anemia were associated with impaired cognitive functioning, lower school achievement and most likely lower physical work capacity. Adolescent girls are at risk of developing iron deficient anemia because of the increased iron requirement for growth.

STATEMENT OF THE PROBLEM

"A study to assess the knowledge of adolescents' girls regarding the prevention of iron deficiency anemia in Modern Government Girls Inter College Pant Nagar of U.S. Nagar, Uttarakhand with a view to develop an information booklet on prevention and management of Iron deficiency Anemia." [14]

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OBJECTIVES OF THE STUDY

- To develop and provide an information booklet on prevention and management of Iron deficiency Anemia.
- To assess the knowledge of adolescents girls regarding the Iron deficiency Anemia.
- To find out association between adolescents girls and their demographic variables [15].

MATERIALS AND METHODS

Hypothesis

H-0: There will be no significant association between level of knowledge regarding prevention of iron deficiency anemia among adolescents' girls and their specific personal variables.

H-1: There will be significant association between level of knowledge regarding prevention of iron deficiency anemia among adolescents' girls and their specific personal variables [16].

METHODOLOGY

Research Approach

Descriptive survey approach

Research Design

Non experimental survey research design

Research Setting

Modern Government girls Inter College Pant Nagar U. S. Nagar Uttarakhand

Sample

Adolescent girls

Sample Size

100

Sampling Technique

Non probability convenient sampling technique

Data Collection Instruments

Tool A

It consist of demographic variables include Age (12-17 years), Religion, Standard, Occupation of the father, Living status, Type of the family, Family income, Type of Residence, Food pattern, Birth order, Number of sibling, Age of menarche, Duration of menses, Previous knowledge regarding anemia, If yes Source of information.

Tool B

It consists of 32 Questionnaires regarding the prevention of iron deficiency anemia**.**

Methods of Data Collection

1. Written permission was obtained from the Principal of Modern Government girls Inter College Pant Nagar U. S. Nagar Uttarakhand**.**
2. The sample was selected based on the sampling criteria and using Non probability convenient sampling technique.
3. 100 Adolescent girls assessed by structured knowledge questionnaire regarding the prevention of iron deficiency anemia.
4. Information booklet regarding the prevention of iron deficiency anemia distributed among these sample.

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Data Analysis

1. Descriptive: frequency, percentage, mean and standard deviation
2. Inferential: chi square test were used for the analysis and interpretation of data [17]

SECTION A

Description of Sample'S Demographic Variables in Terms of Frequency and Percentage

The Table 1 shows the percentage distribution of adolescents girls according to age 1% belonged to the age group of 12 years, 4% of them belonged to the age group of 13 and 15% of them belonged 14 years, 20% of them belonged to the age group of 15 years, 34% of them belonged to the age group of 16 years while 26% of them belonged the age group of 17 years and the data percentage of distribution of religion, this data shows that 85% of girls belong to Hindu and only 15% of girls belong to Muslim, this data shows that 37% of girls were belonged to rural area and 57% of girls were belonged to urban area and only 6% were belonged to other area, this data shows that girls 34% of girls were belonged to joint family and 66% were belonged to nuclear family, this data shows that 3% of girls family income were less than 15000, 66% of girls family income were 15000 to 20000, 12% of girls family income were 20000-30000 and 19% of girls family income were more than 30000, this data shows that 27% of girls were vegetarian, 9% of girls were vegetarian and 64% of girls were both, this data shows that 45% of girls have own residence,32% of girls have rented residence, and only 23% of girls have other residence, this data shows that 3% of girls have 1 sibling, 21% of girls have 2 sibling, 74% of girls have 3 to 5 siblings and only 2% of girls have more than 5 siblings, this data shows 55%of girls menarche age is 10-13 years and only 45% of girls menarche age is 14-16 years, this data shows that 88% of girls have previous knowledge and only 12% of girls have no previous knowledge [18]

Table 1. Frequency and percentage distribution of demographic variables of sample:

1. Demographic Data Table				
S.N.	***Demographic data***	***Details***	***No. of persons***	
			Frequency	*Percentage*
1	Age	12	1	1%
		13	4	4%
		14	15	15%
		15	20	20%
		16	34	34%
		17	26	26%
2	Religion	Hindu	85	85%
		Muslim	15	15%
3	Standard	9th	16	16%
		10th	15	15%
		11th	43	43%
		12th	26	26%
4	Occupation of Father	Govt. job	21	21%
		private job	53	53%
		Agriculture	9	9%
		others	17	17%
5	Living Status	Rural area	37	37%
		Urban area	57	57%
		Any others	6	6%
6	Type of Family	Joint	34	34%

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1. Demographic Data Table				
S.N.	***Demographic data***	***Details***	***No. of persons***	
			Frequency	*Percentage*
		Nuclear	66	66%
7	Family Income	Less than 15000/month	3	3%
		15000-20000	66	66%
		20000 -30000	12	12%
		More than 30000	19	19%
8	Food pattern	Vegetarian	27	27%
		Non vegetarian	9	9%
		Both	64	64%
9	Type of residence	Own	45	45%
		rented	32	32%
		Others	23	23%
10	Birth order	1 child	33	33%
		2 child	33	33%
		3 child	32	32%
		5 child	2	2%
11	Number of siblings	1	3	3%
		2	21	21%
		3 to 5	74	74%
		more than 5	2	2%
12	Age of menarche	10-13 years	55	55%
		14-16 years	45	45%
13	Durations of menses	7-8 days	11	11%
		6-5 days	41	41%
		4-3 days	46	46%
		Less than 3 days	2	2%
14	Previous Knowledge	Yes	88	88%
		No	12	12%
15	if yes sources of information	Book	6	6%
		Internet	21	21%
		Taught in class	64	64%
		Health magazines	4	4%
		Library	5	5%

SECTION B

Table 2 shows knowledge regarding the prevention on iron deficiency anemia among adolescents' girls in that 29% of girls have inadequate knowledge, 49% have moderate knowledge & only 22% have adequate knowledge.

Table 2. Frequency and percentage distribution of knowledge about the prevention of iron deficiency anemia.

Inadequate knowledge (0-16)		**Moderate knowledge (17-24)**		**Adequate knowledge (more than 24)**	
Frequency	***Percentage***	***Frequency***	***Percentage***	***Frequency***	***Percentage***
29	29%	49	49%	22	22%

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Table 3 present the results of association between knowledge score and demographic variables of adolescents girls like age, religion standard, occupation of father, family type, food pattern, residence, no. of siblings, age of menses, duration of menses, previous knowledge, if yes source of information regarding prevention of iron deficiency anemia and non – association found with living status, income of father and birth order.

Table 3. Association of Knowledge About Iron Deficiency Anemia

1. Demographic Data Table									
S.N.	***Demographic Data***	***Details***	***Frequency***	***Percentage***	***Mean***	***SD***	***Chi-Square (X^2)***	***P Value***	***LOS***
1	Age	12	1	1%	1	0	12.782	18.31	NS
		13	4	4%	2.5	1.118			
		14	15	15%	8	4.320			
		15	20	20%	10.5	5.766			
		16	34	34%	17.5	9.810			
		17	26	26%	13.5	7.5			
2	Religion	Hindu	85	85%	43	24.535	0.038	5.99	NS
		Muslim	16	16%	8	4.320			
3	Standard	9th	16	16%	8.5	4.609	15.213	12.59	S
		10th	15	15%	8	4.320			
		11th	43	43%	22	12.409			
		12th	26	26%	13.5	7.5			
4	Occupation of Father	Govt. job	21	21%	11	6.055	13.068	12.59	S
		private job	53	53%	27	15.297			
		Agriculture	9	9%	5	2.581			
		others	17	17%	9	4.898			
5	Living Status	Rural area	37	37%	19	10.677	27.017	9.41	S
		Urban area	57	57%	29	16.451			
		Any others	6	6%	3.5	1.707			
6	Type of Family	Joint	34	34%	17.5	9.810	3.060	5.99	NS
		Nuclear	66	66%	33.5	19.050			
7	Family Income	Less than 15000	3	3%	25	24.341	24.891	12.59	S
		15000-20000	66	66%					
		20000-30000	12	12%					
		More than 30000	19	19%					
8	Food pattern	Vegetarian	27	27%	14	7.788	5.575	9.49	NS
		Non vegetarian	9	9%	5	2.581			
		Both	64	64%	32.5	18.472			
9	Type of residence	Own	45	45%	23	12.987	4.680	9.49	NS
		Rented	32	32%	16.5	9.233			
		Others	23	23%	12	6.633			
10	Birth order	1 child	33	33%	17	9.521	6.759	12.59	NS
		2 child	33	33%	17	9.521			
		3 child	32	32%	16.5	9.233			
		5 child	2	2%	1.5	0.5			

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1. Demographic Data Table									
S.N.	***Demographic Data***	***Details***	***Frequency***	***Percentage***	***Mean***	***SD***	***Chi-Square (X^2)***	***P Value***	***LOS***
11	Number of siblings	1	3	3%	4.665	1.658	1.763	12.59	NS
		2	21	21%					
		3 to 5	74	74%					
		more than 5	2	2%					
12	Age of menarche	10-13 years	55	55%	18.75	2.487	2.777	5.99	NS
		14-16 years	45	45%					
13	Durations of menses	7-8 days	11	11%	7.305	1.950	7.335	12.99	NS
		6-5 days	41	41%					
		4-3 days	46	46%					
		Less than 3 days	2	2%					
14	Previous Knowledge	Yes	88	88%	44.5	25.401	1.959	5.91	NS
		No	12	12%	6.5	3.452			
15	If yes sources of information	Book	6	6%	3.5	1.707	7.089	15.51	NS
		Internet	21	21%	11	6.055			
		Taught in class	64	64%	32.5	18.472			
		Health magazines	4	4%	2.5	1.118			
		Library	5	5%	3	1.414			

RESULTS

- Highest percent of adolescence girls were 34% in the age group of 16 years.
- Highest percent of adolescence girls for 85% in the religion group of Hindu.
- Highest percent of adolescence girls 43% in the in standard group of 11^{th}.
- Highest percent of adolescence girls were 53% in category occupation of father that is private job.
- Highest percent of adolescence girl were 57% in the category living standard of urban area.
- Highest percent of adolescence girls were 66% in the category of type of family which is nuclear family.
- Highest percent of adolescence girls in the category of family income were 66% in the range of 15000 to 20000.
- Highest percent of adolescence girls in the category birth order were 33% for first child and second child.
- Highest percent of adolescence girl in the category of number of siblings were 74% in 3 to 5 siblings.
- Highest percent of adolescence girls in the category of age of manage were 55% in 10 to 13 years.
- Highest percent of duration of menses in adolescence girls were 46% in 4 to 3 days [19].

DISCUSSION

Structured knowledge questionnaire was used to assess the knowledge regarding prevention of iron deficiency anemia among adolescents' girls'. It deals with self-structured knowledge questionnaire about iron deficiency anemia. Majority of adolescents girls were having inadequate knowledge that is (29%), followed by (49%) had moderate knowledge and (22%) of them had adequate knowledge regarding iron deficiency anemia [20]. The present study includes socio demographic variables such as age, religion, standard, occupation of father, living status, family type, income of father, food pattern, residence, birth order, no of siblings, age of menarche, duration of menses, previous

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knowledge, and source of information about knowledge regarding prevention of iron deficiency anemia [21].

It was found that adolescents girls had significant association with demographic variables like age, religion standard, occupation of father, family type, food pattern, residence, no. of siblings, age of menses, duration of menses, previous knowledge, if yes source of information regarding prevention of iron deficiency anemia by using inferential statistics knowledge level of adolescents girls were associated with their selected demographical characteristics in age the chi square value was found (p= 12.56)which is less than the table value at (p=18.31) [22], In religion the chi square value was found (p=0.0382) which is less than table value at (p= 5.99), In standard the chi square value was found (p= 10.12) which is less than table value at (p=12.59), In occupation of father the chi square value was found (p=11.94) which is less than the table value at (p=12.59)In family type the chi square value was found (p=0.289) which is less than the table value at (p=5.99), In food pattern the chi square value was found (p=1.806) which is less than the table value was found (p= 9.49),In residence the chi square value was found (p=4.215) which is less than the table value was found (p= 9.49) [23], In the number of siblings the chi square value was found (p= 2.76) which is less than the table value was found (p=12.59), In age of menarche the chi square value was found (p= 2.77) which is less than the table value was found (p=5.99), In duration of menses the chi square value was found (p= 7.31) which is less than the table value was found (p= 12.59), In previous knowledge the chi square value was found (p= 1.941) which is less than the table value was found (p=5.91), In the source of information the chi square value was found (p= 8.51) which is less than table value was found(p= 15.51) which is clearly indicated that there is association between the these above demographical variables and knowledge of adolescents girls [24]. However, demographical variables such as living status and income of father were found to be non-sufficient. According to living status chi square value was found (p= 27.01) which is more than the table value (p=9.49) which is clearly indicates that there is no association between the living status and knowledge of adolescents girls. In the income of father the chi square value was found (p=23.35) which is more than the table value (p=12.59), which is clearly indicated that there is no association between the income of father and knowledge of adolescents girls [25].

NURSING IMPLICATIONS

Nursing Education

- A student nurses can update their knowledge in new innovation regarding awareness of iron deficiency anemia.
- Nursing student have to participate in health education programmes for awareness regarding iron deficiency anemia.
- As today's nursing student are tomorrow's staff nurses, educationists administratorsand supervisor nursing teachers should emphasize on health education and various methods of imparting education during student's training period.

Nursing Administration

- Motivate subordinate to participate in various programmes and improve their knowledge.
- Nurses' administrator can organize seminars on affect and prevention of iron deficiency anemia.
- Nurse administrator can create awareness among people regarding consequence of iron deficiency anemia.
- Nurses administrator can encourage nurses conduct health awareness programme and regular health visit to people.

Nursing Research

- Extensive research can be conducted to find the iron deficiency problems that occur due to lack of knowledge.

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- The impact of iron deficiency should be subjected and finding can communicated and utilized in practice.

LIMITATIONS OF THE STUDY

The present study is limit to:

- Modern Government Girls Inter College, pant Nagar,Uttarakhand adolescent girls between age group of 12-17 years.
- Present during study period.
- Student willing to participate in study.
- The sample size was limited to 100.
- No randomization.

RECOMMENDATIONS

1- A similar study can be conducted to assess knowledge and practice among other females of other age group regarding iron deficiency anemia.
2- A comprehensive study can be conducted among people of slum area.
3- A study can be conducted to find out present knowledge regarding iron deficiency anemia

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