



Original Article

A Study to Assess the Knowledge Regarding Anaemia and Its Prevention Among Adolescent Girls in Selected Senior Secondary School at Jaipur with A View to Develop an Information Booklet

Manmohan Sharma¹, Jitendra Sharma²¹Assistant Professor, MT College of Nursing, Jaipur²Professor IMTNE, Jaipur

Abstract

Background: The prevention of anaemia depends on a reciprocal link between education and protection. Teenage females must be completely safeguarded against anaemia, but as they get older, their need for parental protection decreases. Safe behaviour is a learnt behaviour that is progressively picked up over time as one gets older and more experienced. Parental protection and supervision of the child gradually changes with evidence of the children's increasingly responsible behaviour. Rather than being shaped by restrictions, the behaviour is formed in responsibility to handle personal freedom and thus develop justified self-confidence.

Methodology: Cambridge court school Mahesh Nagar Jaipur and Royal Academy Sr. Sec. school Mahesh Nagar Jaipur was the site of the study. A non-experimental study design and a descriptive research methodology were used. 60 teenage girls were chosen for the sample using a non-probability convenience sampling method. A structured knowledge questionnaire created by the researcher was used to gather data. There were two sections to the tool: Section B evaluated knowledge about anemia and its prevention, including introduction and definition, causes and types, signs and symptoms, prevention, and management; Section A included demographic variables such as age, class, religion, type of family, monthly family income, area of residence, and source of information. Descriptive and inferential statistics, such as frequency, percentage, mean, standard deviation, and Chi-square test, were used to analyze the gathered data.

Results: The findings showed that adolescent girls had the highest knowledge regarding anaemia and its prevention in the overall area (63.5%), followed by introduction and definition (51.4%), causes and types (45.72%), and prevention and management (43.33%). A significant association was found between knowledge level and class, religion, monthly family income, area of residence, and source of information.

Discussion: The results showed that a significant percentage of teenage females lacked sufficient understanding about anemia and how to prevent it. The study emphasizes the necessity of health education to raise teenage girls' knowledge of the causes, symptoms, prevention, and nutritional treatment of anemia. Based on the observed knowledge gaps, an information pamphlet was created to offer straightforward and easily accessible health education.

Keywords: Assess; Knowledge; Anaemia, Adolescent, Information booklet

INTRODUCTION

Between puberty and legal adulthood, adolescence is a period of physical and psychological growth. The second stage of life is adolescence. "Coming of age" refers to a child's physical, mental, and social development into an adult. The adolescent groups are between the ages of 10 and 19.¹

They make up more than one-fifth of India's total population. The emergence of secondary sex traits marks the start of adolescence, which concludes when bodily development is finished and the person is psychologically developed enough to contribute to society.²

At this age, girls start to menstruate. The girl should be between 155 and 169 cm tall and weigh between 42 and 64 kg. Adolescence is a time of rapid growth and development, necessitating a rise in total nutritional requirements. Nutritional deficiencies, particularly

iron deficiency illnesses, can be avoided by eating the proper foods at the right times.³

One of the micronutrients is iron. It is involved in the production of hemoglobin, the movement of oxygen, the development of the brain, the control of body temperature, and the activity of muscles. Iron deficiency is the term used to describe the loss of iron in the human body.⁴

The most frequent cause of anemia is iron deficiency. Iron deficiency anemia is the term used to describe the deceased

Address for Correspondence: Manmohan Sharma, MT College of Nursing, Jaipur

E-mail: gaurmanmohanzoo@gmail.com

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hemoglobin level.

The World Health Organization (WHO) states that teenage girls should have a hemoglobin level of 12 g/dl. Iron deficiency anemia is defined as a hemoglobin level of less than 12 g/dl. According to the WHO, a hemoglobin level of 10 g/dl is classified as mild iron deficiency anemia, a hemoglobin level between 7 and 10 g/dl as moderate iron deficiency anemia, and a hemoglobin level below 7 g/dl as severe iron deficiency anemia.⁵

The main causes of iron deficiency anemia in teenage girls include decreased dietary iron intake, poor absorption, worm infestation, increased body demand, and menstruation.

The signs and symptoms of iron deficiency anemia include pallor of the eyes, irritability, exhaustion, husky voice, loss of appetite, desire to gnaw solid substances (pica), ice (pagophagia), or clay (geophagia), dry, brittle nails, concave, angular stomatitis, irritation of the tongue, sore mouth, difficulty swallowing, difficulty breathing because the blood's oxygen carrying capacity is reduced, and it also affects the immune system. Due to an increase in blood volume and muscle mass, iron deficiency anemia is a serious issue for teenage girls.⁶

Due to their altered lifestyles, which include consuming fast food, junk food, snacking, and skipping meals—all of which are prevalent among urban adolescent girls—adolescent girls confront numerous challenges. Some are malnourished as a result of ignorance about dietary iron, low socioeconomic position, low-income families, which are prevalent in rural regions, and the fact that teenage girls used to lose 45 milliliters of blood (or 22 milligrams of iron) throughout their menstrual cycle.⁷

Green leafy vegetables like amaranth, spinach, coriander leaves, drumstick leaves, radish leaves, vegetables like beet, drumstick, cereals like ragi, barley, cholam (Sorghum), rice (raw milled), legumes like Bengal gram dhal, Black gram dhal, soyabean, nuts and oil seeds like dates, cherry, and fruits like chickoo, pomegranate, and jaggery will all help prevent iron deficiency anemia. Every six months, periodic de-worming should be promoted, along with hygiene habits like hand washing and wearing appropriate footwear when using the bathroom.⁸

Iron deficiency anemia can be avoided by educating rural communities about inexpensive, iron-rich foods including drumstick leaves, dates, jaggery, ragi, green leaves, and chickoo. They should also refrain from skipping meals in favor of cheap foods and fast food. Early detection of iron deficiency anemia can be achieved with routine hemoglobin screening testing.⁹

OBJECTIVE

1. To assess the knowledge regarding anemia and its prevention among adolescent girls.
2. To associate the knowledge of adolescent girls with selected demographic variables.
3. To develop the information booklet regarding anaemia and its prevention.

Hypothesis

H₁ – There will be significant association between pretest knowledge score regarding anaemia and its prevention among adolescent girls with selected demographic variables such as age, studying in class, religion, type of family, monthly income, area and source of information.

METHODOLOGY

Research Approach: - In order to find new meaning, describe what exists, ascertain the frequency with which something occurs, and classify information, descriptive research approaches describe situations as they exist in the world and provide accurate data of the characteristics of specific individuals, situations, or groups in life situations. Future quantitative research can build upon the findings of descriptive research.

Research Design: - The research design includes some of the most crucial methodological choices the researcher takes when conducting a research study and outlines the fundamental techniques the researcher uses to produce accurate and comprehensible data. In order to create an information booklet, the current study used a descriptive survey research design to gauge teenage girls' knowledge of anaemia and how to prevent it in a chosen senior secondary school in Jaipur.

Setting of the Study: - To determine the level of awareness among teenage girls in a particular Jaipur school about anaemia and how to prevent it. The sample availability, time availability, geographic accessibility, and topic population of the chosen Jaipur school comprised the chosen environment.

Variables: - Variables are qualities, properties or characteristics of the person, things or situation that change or vary.

Demographic/ Extraneous Variable:

- Age, studying in Class, Religion, Type of Family, Monthly Income, Area of Residence, Source of Information Regarding Anaemia.

POPULATION:

Population is defined as an entire group or objects or events which will have at least one characteristic in common and must be defined specifically and unambiguously.

The population for the present study comprised of the adolescent girls selected school at Jaipur.

Sample and Sample Size:

A sample size is a small portion of a population selected for the study. It constitutes a subset of total population. A sample of the present study comprised of 60 adolescent girls in selected school at Jaipur.

Sampling Technique:

Sampling is the process in which representative units of a population are selected for study in a research investigation. Convenience sampling technique, a type of non-probability sampling approach was used to select the sample 60 adolescent girls.

Sampling Criteria:

➤ Inclusion criteria:

The study included,

- Adolescent girls who are available at the time of study.
- Adolescent girls willing to participate in the study.
- Adolescent girls who are able to read Hindi or English.

➤ Exclusion Criteria

The study excluded

- In this study below 15 years and above 17 year girls are excluded.

- Adolescent girls who are not available at the time of data collection.
- Adolescent girls who are not willing to participate in the study.

Selection and Development of the Tools and Information Booklet:

Selection of the Tool:

The instrument selected in research must be the vehicle to obtain the best data for drawing conclusions of the study.

A structured questionnaire schedule was selected on the basis of the objectives of the study, as it was considered to be the most appropriate instrument to elicit responses from the participants.

Development of the Tool:

The following steps were carried out in the preparation of the instrument.

- Related literature was reviewed in preparing of the instrument.
- Guidance and consultation of the Nursing experts and medical experts were taken for the construction of instrument.

Description of the Tool:

Tool consists of two parts-

Part I: Structured questionnaire consists of demographic variables of adolescent girls. It consist of 7 items regarding age, studying in class, religion, area, monthly income (parents), type of family, source of information regarding anaemia.

Part II: Structured questionnaire consists of 30 items regarding anaemia and its prevention of adolescent girls which were

divided into 4 sections-

Section A: Knowledge regarding introduction and definition of anemia.

Section B: Knowledge regarding causes and type of home anemia.

Section C: Knowledge regarding sign and symptom of anemia

Section E: Knowledge regarding prevention and management of anemia.

Reliability of the Tool: The final tool after validation was tested for its reliability. The tool was administered to 6 adolescent girls and data was tabulated. The reliability of the tool was established by using split half method with Alfa chrom banch formula.

The reliability of the tool was found to be 0.89 which indicate that the tool was reliable.

Pilot Study: After obtaining permission from the concerned authority a pilot study was conducted in the month of October 2024 from 04-10-2024 to 10-10-2024 {one week} six adolescent girls were selected Cambridge Sr. Sec. Schoo, Mahesh Nagar, Jaipur.

RESULT

Organization of Findings:

The data obtained was analysed and presented in 3 different sections:

SECTION I: - Description of demographic variables of adolescent girls.

SECTION II: - Analysis of existing knowledge score of adolescent girls.

SECTION III: - Association between knowledge regarding anaemia and its prevention and selected demographic variables.

TABLE 01: Distribution of adolescent girls according to the demographic variables N = 60

S. N.	Variables	Frequency	Percentage %
1	Age in years:		
	a. 14-15 year	21	35.00%
	b. >15-16 year	18	30.00%
	c. >16-17 year	14	23.3%
2	Studying in Class		
	a. 9 th	18	30.00%
	b. 10 th	20	33.3%
	c. 11 th	15	25.00%
3	Religion		
	a. Hindu	31	51.7%
	b. Muslim	21	35.0%
	c. Christian	4	6.7%
4	Family income		
	a. < 10000 Rs	17	28.3%
	b. 10001-15000 Rs	5	8.3%
	c. 15001-20000 Rs	15	25.0%
5	Type of family		
	a. Nuclear family	25	41.7%
	b. Joint family	35	53.3%
6	Area of residence		
	a. Urban	28	46.7%
7	Source of information regarding anaemia		
	a. Health personnel	9	15.0%
	b. Friends and relatives	8	13.3%
	c. Teacher	4	6.7%
	d. No information	39	65.0%

TABLE 02: FREQUENCY AND PERCENTAGE DISTRIBUTION OF AGE IN YEARS:

S.no	Age in year	Frequencies	Percentage
1	14-15	21	35.00%
2	>15-16	18	30.00%
3	>16-17	14	23.3%
4	>17-18	7	11.7%
Total		60	100.0

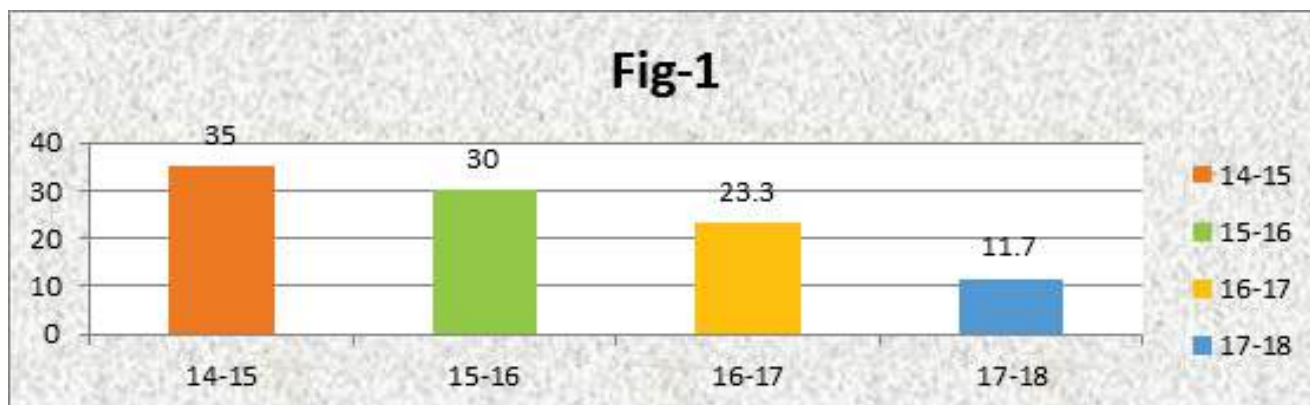


FIG-1: Percentage distribution of A study to assess the knowledge regarding anaemia and its prevention among adolescent girls in selected senior secondary school at Jaipur.

TABLE: 03 FREQUENCY AND PERCENTAGE DISTRIBUTION OF STUDYING IN CLASS

S.no	Studying in Class	Frequencies	Percentage
1	9 th	18	30.0
2	10 th	20	33.3
3	11 th	15	25.0
4	12 th	7	11.7
Total		60	100.0

TABLE: 04 FREQUENCY AND PERCENTAGE DISTRIBUTION OF RELIGIONS

Serial No	Religion	Frequencies	Percentage
1	Hindu	31	51.6
2	Muslim	21	35.0
3	Christian	4	6.7
4	Others	4	6.7
Total		60	100.0

TABLE 05: FREQUENCY AND PERCENTAGE DISTRIBUTION OF TYPE OF FAMILY

S.no	Type of family	Frequencies	Percentage
1	Joint-	25	41.7
2	Nuclear	35	58.3
Total		60	100.0

Table 06: FREQUENCY AND PERCENTAGE DISTRIBUTION OF MONTHLY INCOME (PARENTS)

S.no.	Monthly income(parents)	Frequencies	Percentage
1	< 10000 Rs	17	28.3
2	10001-15000 Rs	5	8.3
3	15001-20000 Rs	15	25.0
4	> 20000 Rs	23	38.3
Total		60	100

TABLE 07: FREQUENCY AND PERCENTAGE DISTRIBUTION OF AREA OF RESIDENCE

S.no	Area of residence	Frequencies	Percentage
1	Urban	28	46.7
2	Rural	32	53.3
Total		60	100.

TABLE 08: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOURCE OF INFORMATION REGARDING ANAEMIA

S.No.	Source of information regarding anaemia	Frequencies	Percentage
1	Health personnel	9	15.0
2	Friends and relatives	8	13.3
3	Teacher	4	6.7
4	No information	39	65.0
Total		60	100

Table 09: Analysis of existing knowledge level of the adolescent girls regarding anaemia and its prevention.

S. N.	Level of knowledge	Score	No. of adolescent girls	% of adolescent girls
1.	Poor	0 –14	33	55%
2	Average	14-23	12	20%
3.	Good	24 – 30	15	25%

TABLE 10: Analysis of area wise knowledge score of adolescent girls regarding anaemia and its prevention.

S.no	Area	No of items	Max score	Range of score	Mean	Median	S.D.	Mean%
1	Introduction and definition of anaemia	8	8	0-8	5.08	5	1.344	63.5
2	Causes and types of anaemia	6	6	9-14	2.60	2	1.777	43.33
3	Sign and symptom of anaemia	5	5	15-19	2.57	2	1.533	51.40
4	Prevention and management of anemia	11	11	20-30	5.03	4	2.538	45.72
	Total	30			15.32		5.130	51.06

TABLE: 11 : Description of overall knowledge score, Mean, Median, SD and Mean Percentage of adolescent girls regarding anaemia and its prevention of adolescent girls.

No of items	Maximum score	Range of score	Mean score	Median score	S.D.	Mean %
30	29	9 - 29	15.32	15	5.130	51.06

SUMMARY:

The obtained values are greater than the table values at the 0.05 level of significance, the null hypothesis rejected and there is significant association between the studying in class, religion and monthly income (parents) and knowledge scores of participants.

The obtained values are less than the table values at the 0.05 level of significance, the null hypothesis accepted and there is no significant association between the age, type of family, no. of child and knowledge scores of participants. The results indicate that the adolescent girl's demographic variables such as studying in class, religion and monthly income (parents) have significant

effect on the knowledge level of adolescent girls regarding anaemia and its prevention of adolescent girls.

DISCUSSION

The study findings revealed that the majority of adolescent girls were aged 14–15 years (35.0%), studying in 9th class (36.7%), Hindu (51.7%), and belonged to nuclear families (58.3%). Most respondents had a parental monthly income of more than ₹20,000 (38.3%), while 65.0% had no prior information regarding anaemia.¹⁰

Regarding knowledge, 55% of adolescent girls had poor knowledge, 20% had average knowledge, and 25% had good

knowledge regarding anaemia and its prevention. The overall knowledge score was 63.5%, indicating inadequate knowledge among many participants.¹¹

A significant association was found between knowledge and class of study, religion, and parents' monthly income ($p < 0.05$), whereas no significant association was found with age and type of family ($p > 0.05$). The findings emphasize the need for structured health education programmes to improve awareness regarding anaemia and its prevention among adolescent girls.¹²

CONCLUSION

The following conclusions were drawn based on the findings of the study:

- Level of knowledge of adolescent girls showed that 55% of the adolescent girls had poor knowledge regarding anaemia and its prevention, 20% had average knowledge, and 25% of the adolescent girls had good knowledge anaemia and its prevention.
- Overall knowledge of adolescent girls was (63.5%) in the area of assess the knowledge regarding anaemia and its prevention with mean and SD of 5.08 ± 1.344 , in the area introduction and definition of anaemia, the mean percentage was 51.40% with mean and SD of 2.57 ± 1.533 , in the area of causes and type of anaemia mean percentage was 45.72% with mean and SD of 5.03 ± 2.538 , in the area of prevention and management of anaemia signs mean percentage was 43.33% with mean and SD of 2.60 ± 1.777 .
- There was an association between educational status and knowledge of adolescent girls at 0.05 level of significance and $p < 0.05$. It shows that adolescent girls had good knowledge regarding anaemia and its prevention.

RECOMMENDATIONS

Based upon the findings of the study, following recommendations were made for further study:

- Similar studies can be conducted in community settings.
- A similar study can be conducted on a large sample.
- An experimental study can be conducted using control and experimental group.
- Follow-up study can be conducted to evaluate the effectiveness of planned teaching programme.

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CONFLICT OF INTEREST: None

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