Original Research Article

Examine the Knowledge and Practices of Adolescent Girls about the Prevention of Anemia

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Abstract: This study aimed to assess the knowledge and practices related to the prevention of anemia among adolescent girls at a selected nursing college in Bengaluru. Anemia, a significant public health concern, especially for adolescent girls, can lead to serious health issues. The study objectives included evaluating the level of knowledge about anemia prevention, understanding the practical measures adopted, and analyzing the association between these factors and various demographic variables. A descriptive research design was used, and data were collected from 50 participants through a structured questionnaire. The results indicated that 70% of the participants had an adequate understanding of anemia prevention, while 14% had moderate knowledge, and 16% demonstrated inadequate knowledge. In terms of practical application, only 8% of the participants practiced good preventive measures, with 46% showing moderate practices and 46% displaying poor practices. Statistical analysis revealed significant associations between knowledge levels and certain demographic factors, such as type of family and dietary habits, while no significant relationship was observed between practical measures and socio-demographic factors. The findings underscore the need for improved education and practical interventions to enhance anemia prevention practices among adolescent girls.

Keywords: Anaemia, Adolescent girls, Nursing college, Knowledge, Prevention practices.

1. INTRODUCTION

Anemia, characterized by a deficiency of red blood cells or hemoglobin, remains a significant public health concern globally, particularly in developing countries. Among vulnerable groups, adolescent girls are disproportionately affected due to rapid growth, menstruation, and the onset of reproductive maturity, which increase their iron requirements. In India, the prevalence of anemia among adolescent girls is alarmingly high, with nearly 59.1% of girls aged 15-19 years suffering from this condition, as reported by the National Family Health Survey (NFHS-5) (2019-2021). This not only impairs physical and cognitive development but also elevates the risk of complications during pregnancy and childbirth, perpetuating a cycle of poor health outcomes.

The prevention of anemia during adolescence is critical, as this period provides a window of opportunity to address nutritional deficiencies before they lead to severe health consequences. While numerous public health initiatives have been implemented to reduce the burden of anemia, the effectiveness of these interventions depends largely on the awareness and preventive practices adopted by the target population.

This study aims to assess the knowledge and practical measures related to anemia prevention among adolescent girls in a nursing college in Bengaluru. By evaluating the existing knowledge levels and prevention practices, this research seeks to identify gaps and inform future educational interventions that could contribute to reducing the prevalence of anemia in this demographic.

2. MATERIAL AND METHODS

Research Approach
This study employed a descriptive survey approach to assess the knowledge and practices regarding the prevention of anemia among adolescent girls. A descriptive approach was chosen because it provides a structured way of collecting, analyzing, and interpreting data related to the current status of the subjects without manipulating any variables.

Research Design
A descriptive research design was utilized to achieve the objectives of the study. This design allowed for an accurate collection of information regarding the level of knowledge and practical measures undertaken by adolescent girls to prevent anemia.

Variables
- **Research Variable**: The level of knowledge regarding anemia prevention.
- **Demographic Variables**: Age, sex, and religion.

Setting of the Study
The study was conducted among adolescent girls in their second semester of B.Sc. Nursing at Smt Nagarathnamma College of Nursing, Bengaluru. This institution was chosen due to its accessibility and relevance to the target population.

Population
The target population consisted of adolescent girls enrolled in the second semester of the B.Sc. Nursing program at SMT Nagarathnamma College of Nursing. These students represent a critical group for understanding the preventive measures against anemia, given their age and health education background.

Sample and Sampling Technique
A sample of 40 adolescent girls was selected from the second semester of the B.Sc. Nursing program. The sampling technique used was convenient sampling, where participants were selected based on availability and willingness to participate in the study.

Sampling Criteria
Inclusion Criteria:
- Adolescent girls aged between 18-20 years enrolled in the B.Sc. Nursing program.
- Students willing to participate and available during the data collection period.

Exclusion Criteria:
- Students unwilling to participate or unavailable at the time of data collection.

Data Collection Tool
The data was collected using a structured self-administered questionnaire. This tool was deemed appropriate to capture both the knowledge and practices of participants regarding anemia prevention. The questionnaire was divided into two main sections:
- **Section A**: Six demographic items, including age, type of family, locality, religion, and previous sources of information.
- **Section B**: 30 items designed to assess knowledge on anemia, scored as either correct (1 point) or incorrect (0 points).

Development of the Tool
The tool was developed following these steps:
1. Review of literature on anemia prevention and related topics.
2. Consultation with the study guide and subject matter experts.
3. Incorporation of findings from previous research studies and resources from libraries and the internet.

Data Collection Procedure
Prior to data collection, formal permission was obtained from the principal of SMT Nagarathnamma College of Nursing. The data collection took place on July 29, 2024. After introducing the purpose of the study, participants were

given instructions on how to complete the questionnaire. The investigator provided guidance to ensure clarity and consistency in responses.

Plan for Data Analysis

Descriptive statistics were used to analyze the data. The following steps were followed:

1. **Data entry and editing**: Data collected from the questionnaire was coded, grouped, and tabulated.
2. **Descriptive statistics**: The data was analyzed using frequency, mean, and mean percentage to assess the variables of interest.
3. **Summary and interpretation**: Results were aligned with the study objectives to provide meaningful insights into the knowledge and practices of anemia prevention among adolescent girls.

This structured approach ensured that the data was systematically collected and analyzed, providing a clear understanding of the levels of knowledge and practice among the study population.

3. RESULTS AND DISCUSSION

The study revealed that 70% of the participants had a adequate level of knowledge about anemia and its prevention, while 14% had moderate knowledge and 16% had inadequate knowledge. Practical measures, were good practiced by 8% of the participants, while 46% showed moderate practices and 46% demonstrated poor practice

SECTION 1:

Section A: Socio demographic variables frequency and percentage distribution of subjects

Table 1: Frequency and percentage distribution of subjects regarding socio-demographic variables; n=50

Sl. No	Socio-demographics variables	Frequency	Percentage
1.	**Age in years**		
	18-20	50	100.0
	21-22	0	-
2.	**Type of family**		
	Joint	12	24.0
	Nuclear	38	76.0
	Locality		
	Urban	19	38.0
	Rural	31	62.0
	Religion		
	Hindu	21	42.0
	Muslim	10	20.0
	Other	19	38.0
3.	**Dietary habits**		
	Veg	1	2.0
	Non-veg	5	10.0
	Mixed	44	88.0
4.	**Previous source of information**		
	Mass media	33	66.0
	Journal	2	4.0
	Newspaper	4	8.0
	Others	11	22.0

Table 1 shows that all of the subjects 100%(50) belongs to the age group of 18-20. Majority 76%(38) are in nuclear family and only 25%(12) in joint family. The maximum 62%(31) were from rural area and 38%(19) were from urban area. The 42%(21) identify as Hindu, 20%(10) identify as Muslim and 38%(19) belongs to other religions.

A majority of 88% (44) have mixed dietary habits, 10% (5) consume a non - vegetarian diet and only 2% (1) follows a vegetarian diet. A maximum 66% (33) reported mass media as their previous source of information, 4%(2) had obtained information from journals, 8% (4) cited newspapers as their source of information and 22% (11) mentioned other sources of information.

Section B: Table 2 Frequency and percentage distribution regarding level of knowledge and practice.

Table 2.1: Frequency and percentage distribution regarding level of knowledge; N=50

Sl. No	Level of knowledge	Score	Frequency	Percentage
1.	Inadequate knowledge (<50%)	0-10	8	16.0
2.	Moderately knowledge (51-75%)	11-14	7	14.0
3.	Adequate knowledge (>75%)	15-20	35	70.0

Table 2.1 the analysis of the collected data revealed that 70% of the participants had a adequate level of knowledge about anemia and its prevention, while 14 % had moderate knowledge and 16% had inadequate knowledge.

Table 2.2: Frequency and percentage distribution regarding level of practice

Sl. No	Level of Practice	Score	Frequency	Percentage
1.	Poor Practice (<50%)	0-10	23	46.0
2.	Moderately Practice (51-75%)	11-20	23	46.0
3.	Good Practice (>75%)	21-30	4	8.0

Table 2.2 the analysis of collected data revealed that Practical measures, were good practiced by 8% of the participants, while 46% showed moderate practices and 46% demonstrated poor practices.

Section C:

Table 3: Association of level of knowledge with selected socio- demographic variables

Sl. No	Socio-demographic Variables	Adequate knowledge	Moderately knowledge	Inadequate knowledge	Chi square Value (χ2)	P value
1	**Locality**					
	Urban	12	5	2	4.099	0.129
	Rural	23	2	6	df =1	NS
2	**Type of family**					
	Joint family	5	4	3	6.826	0.033
	Nuclear family	30	3	5	df =2	S
3	**Religion**					
	Hindu	17	2	2	5.751	0.219
	Christian	4	3	3	df =4	NS
	Muslim	14	2	3		
4	**Diet Habit**					
	Veg	1	0	0	10.364	0.035
	Non-Veg	2	3	0	df =4	S
	Mixed	32	4	8		
5	**Source of Information**					
	Mass Media	27	4	2	9.330	.156
	Journal	1	0	1	df =6	NS
	Newspaper	2	1	1		
	Others	5	2	4		

Table 3 shows that significant associations were found between the level of knowledge and the type of family as well as diet habits. However, no significant associations were observed with locality, religion, or source of information.

Table 4: Association of level of Practice with selected socio-demographic variables

Sl. No	Socio- demographic variables	Poor Practice	Moderately Practice	Good Practice	Chi square value (χ2)	P value
1	**Locality**					
	Urban	11	6	2	2.573	0.276
	Rural	12	17	2	df =2	NS
2	**Type of family**					
	Joint family	4	7	1	1.075	0.584
	Nuclear family	19	16	3	df =2	NS
3	**Religion**					
	Hindu	11	9	1	4.910	0.297
	Christian	3	7	0	df =4	NS
	Muslim	9	7	3		

Sl. No	Socio- demographic variables	Poor Practice	Moderately Practice	Good Practice	Chi square value (χ2)	P value
4	**Diet Habit**					
	Veg	0	1	0	9.160 df =6	0.057 NS
	Non-Veg	1	2	2		
	Mixed	22	20	2		
5	**Source of Information**					
	Mass Media	18	13	2	11.042 df =6	0.087 NS
	Journal	0	1	1		
	Newspaper	0	4	0		
	Others	5	5	1		

Table 4 shows that none of the socio-demographic variables showed a significant association with the level of practice regarding anemia prevention among the participants.

Discussion

There is a significant difference in the level of knowledge and practice regarding the prevention of anemia among adolescent girls at the selected nursing college. To assess the knowledge of adolescent girls regarding prevention of anemia.

The findings of the study reveals that 70% of the participants had a adequate level of knowledge about anemia and its prevention, while 14 % had moderate knowledge and 16% had inadequate knowledge. 352. To assess the practice prevention of anemia in adolescent girls. The Practical measures, were good practiced by 8% of the participants, while 46% showed moderate practices and 46% demonstrated poor practices.

To find out association between knowledge scores and practice scores with selective demographic variables. The significant associations were found between the level of knowledge and the type of family as well as diet habits. However, no significant associations were observed with locality, religion, or source of information. The none of the socio-demographic variables showed a significant association with the level of practice regarding anemia prevention among the participant.

4. CONCLUSION

The findings of this study highlight critical insights into the knowledge and practices related to anemia prevention among adolescent girls in their second semester of the B.Sc. Nursing program at Smt Nagarathnamma College of Nursing, Bengaluru. While the majority of participants demonstrated an adequate level of knowledge about anemia, particularly in understanding its causes, symptoms, and preventive measures, a significant gap was observed in their practical application of this knowledge. Only 10% of the participants were found to practice good preventive measures, while 50% exhibited poor practices.

The study also identified significant associations between knowledge levels and certain demographic variables such as family type and dietary habits. Participants from nuclear families and those with mixed diets had better knowledge about anemia prevention. However, there was no significant relationship between socio-demographic variables and preventive practices.

This study underscores the importance of improving educational interventions targeted at adolescent girls to enhance both their knowledge and practices related to anemia prevention. Despite their theoretical understanding, many participants fail to translate this knowledge into effective daily habits, particularly in terms of dietary practices. Addressing this gap through focused health education programs is critical to reducing the high prevalence of anemia in this vulnerable population.

Further research with a larger sample size and diverse settings is recommended to generalize these findings and to explore the long-term impact of educational interventions on behavior change.

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Competing Interest

The authors declare that there are no competing interests related to this research. The remaining authors declare no competing interests.

Ethical Clearance

Every procedure in this investigation complied with equivalent ethical standards or the 1964 Helsinki Declaration and its revisions. "The ethical aspect of the study has been institutionally reviewed". Informed consent has been procured by all respondents in this study.

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