International Journal of Applied Research 2022; 8(6): 201-205

ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 8.4
IJAR 2022; 8(6): 201-205
www.allresearchjournal.com
Received: 11-03-2022
Accepted: 06-05-2022

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A quasi experimental study to assess the effectiveness of planned teaching programme on knowledge regarding anemia and its prevention among adolescent girls in selected government Senior Secondary Schools of District Kangra, (H.P)

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Abstract
Introduction: The entire period of transition from childhood to adulthood is considered as adolescence. Adolescence begins with pubescence – the earliest signs of development of secondary sexual characteristics and continues until morphological and psychological changes approximate adult status. Iron deficiency anemia (IDA) is still a public health problem in the world and its prevalence remains especially high in developing countries. Iron deficiency anemia among adolescents (especially girls) is a large health problem. The serious consequences of IDA on affected individuals are known to be decreased physical capacity and work performance of adolescents and adults, impaired cognitive performance, behavior and growth of children. Also, it results in increased morbidity from infections.
Aim: This study was carried out to improve the knowledge regarding anemia and its prevention among adolescent girls in selected government Senior Secondary Schools of District Kangra, (H.P).
Methodology: A study was conducted in the month of August to September 2021 on 120 adolescent girls of selected Sen. Sec. School of distt. Kangra, Himachal Pradesh. Data were collected using pretested structured questionnaire. Planned teaching programme was implemented. Posttest was taken. SPSS version 20 was used to analyze data. Descriptive statistics and Inferential analysis were used to describe data.
Result: Maximum 60% of adolescent girls were having poor knowledge and 40% of adolescent girls were having average knowledge regarding anemia and its prevention**.** Place of residence and source of information were significant association with pretest knowledge score ($p< 0.05$). Thus it is revealed that place of residence and source of information had some impact on knowledge level of adolescent girls regarding anemia and its prevention**.**
Conclusion: it was concluded that implementation of planned teaching program showing effectiveness of tool to enhance the knowledge of adolescent girls regarding anemia and its prevention.

Keywords: Anemia, Adolescent girls

Introduction
The entire period of transition from childhood to adulthood is considered as adolescence. Adolescence begins with pubescence – the earliest signs of development of secondary sexual characteristics and continues until morphological and psychological changes approximate adult status. It is the period when 35% of the adult weight and 11-18% of the adult height is acquired. This crucial period of transition is identified by a range of age of 10-19 years by the World Health Organization [1]. Iron deficiency anemia (IDA) is still a public health problem in the world and its prevalence remains especially high in developing countries. Iron is necessary for maintaining normal structure and function of virtually all cells. In advanced stages of iron deficiency (ID), low hemoglobin (Hb) levels lead to anemia. Iron deficiency anemia among adolescents (especially girls) is a large health problem. The serious consequences of IDA on affected individuals are known to be decreased physical capacity and work performance of adolescents and adults, impaired cognitive performance, behavior and growth of children. Also, it results in increased morbidity from infections. A dose response relationship between Hb and cognitive function in children with ID has been reported. Also, a possible association between depression and decreased ferritin level before the occurrence of anemia has been suggested [2].

Material and Method

This study was undertaken to assess the knowledge regarding anemia and its prevention among adolescent girls of selected senior selected school of distt. Kangra. This study was carried out to improve the knowledge regarding anemia and its prevention among adolescent girls in selected government Senior Secondary Schools of District Kangra, (H.P). A quantitative research approach was adopted for the study and quasi- experimental research design used. The purposive sampling technique was used to select the sample.

Data collection procedure

- The data was collected in the month of august and September 2021 in Govt. Sen. Sec. School of distt. Kangra. (H.P.)
- Written permission was taken from principal of Guru Dronacharya college of nursing yol cantt Dharamshala
- Written permission was taken from principal of Govt. sen. Sec. school of distt. Kangra.
- 120 adolescent girls were selected by Non probability purposive sampling technique.
- Study subject were informed about the study
- Interpersonal relationship was build up with subjects before data collection
- The investigator collected the base line data by structured questionnaire.

Result

Table 1: Frequency and percentage distribution of socio demographic variables of adolescent girls

S. No.	Socio-demographic variables	f	%
1.	**Age (in years)**		
	12-14	32	26.6
	15-17	83	69.2
	18-19	5	4.2
2.	**Class**		
	9th	15	12.5
	10th	23	19.2
	11th	35	29.2
	12th	47	39.1
3.	**Monthly Family income (in rupees)**		
	≤10,000	54	45.0
	10,001-20,000	26	21.7
	20,001-30,000	22	18.3
	≥30,001	18	15.0
4.	**Education Status of Mother**		
	Non formal education	6	5.0
	Primary	25	20.8
	Secondary	70	58.4
	Graduation and above	19	15.8
5.	**Education Status of Father**		
	Non formal education	10	8.3
	Primary	23	19.2
	Secondary	63	52.5
	Graduation and above	24	20.0
6	Place of residence		
	Rural	101	84.2
7.	Urban	19	15.8
	Eating Habit		
	Vegetarian	83	69.1
	Non-vegetarian	32	26.7
	Eggetarian	5	4.2
8.	**Types of family**		
	Nuclear	65	54.2
	Joint	52	43.3
	Extended	3	2.5
9.	**Religion**		
	Hindu	114	95.0
	Muslim	3	2.5
	Christian	2	1.7
	Other	1	0.8
10.	**Menstruation had begun**		
	Yes	120	100.0
	No	00	00
11.	**If yes, duration of menstruation**		
	< 5days	69	57.5
	5-7 Days	57.5	39.2
	>7days	47	3.3
12.	**Previous knowledge**		
	Yes	73	60.8

	No	47	39.2
13.	**Source of informatio**		
	Mass media	17	23.3
	Relatives	10	13.7
	Teachers	34	46.6
	Others	12	16.4

The data present on table 1, depicted about frequency and percentage distribution of adolescent girls according to their demographic variables. The inferences made are:

With respect to age maximum of adolescent girls 69.1% were in the age group of 15-17 years, 26.7% were in the age group of 12-14 years and 4.2% were in the age group of 18-19 years.

With respect to class maximum adolescent girls 39.1% were in the 12th class ,29.2% were in the 11th class ,19.2% were in the 10th class and 12.5% were in the 9th class.

According to monthly family income (in rupees) 45% families of adolescent girls had income ≤10000, 21.7% had income 10,001-20,000 , 18.3% had income 20,001-30,000 and 15% had income ≥30,001.

According to education status of mother 58.4% mothers of adolescent girls having secondary education, 20.8% mothers of adolescent girls having primary education, 15.8% mothers of adolescent girls having graduation and above and 5.0% mothers of adolescent girls having were having non formal education. According to education status of father 52.5% fathers of adolescent girls having secondary education, 20% fathers of adolescent girls having graduation and above, 19.2% fathers of adolescent girls having primary education and 8.3% fathers were having non formal education. According to place of residence 84.2% adolescents girls resides in rural area and 15.8% girls resides in urban area. According to eating pattern 69.1% adolescent girls were vegetarian ,26.7% adolescent girls are non vegetarian and 4.2% adolescent girls were eggetarian.

According to type of family 54.2% adolescent girls belongs to nuclear family, 43.3% adolescent girls belongs to joint family and 2.5% girls belongs to extended family. Religion based distribution shows that majority of 95% adolescent girls were Hindu, 2.5% were Muslim, 1.7% were Christian and 0.8% were others.

According to menstruation had begun 100% of adolescent girls were have menstruation. Majority of adolescent girls 57.5% were in the duration of >5 days, 39.2% were in the duration of 5-7 days and 3.3% were in the duration of >7 days. According to previous knowledge 60.8% adolescent girls were having previous knowledge regarding anemia and its prevention and 39.2% were having no knowledge.

46.6% adolescent girls having source of information form teachers, 23.3% adolescent girls having source of information from mass media, 16.4% adolescent girls having source of information from others and 13.7% having source of information from relatives.

Table 2: Frequency and percentages distribution of pre test knowledge scores of adolescent girls

Level of knowledge	Pre test knowledge score	F	%
Good	21-30	00	00
Average	11-20	48	40
Poor	00-10	72	60

Maximum score = 30
Minimum score = 00

Data presented in the table 2 depicts the frequency and percentage of pre test knowledge score of adolescent girls regarding anemia and its prevention. Maximum 60% of adolescent girls were having poor knowledge and 40% of adolescent girls were having average knowledge and none of them having good knowledge regarding anemia and its prevention during pre test.

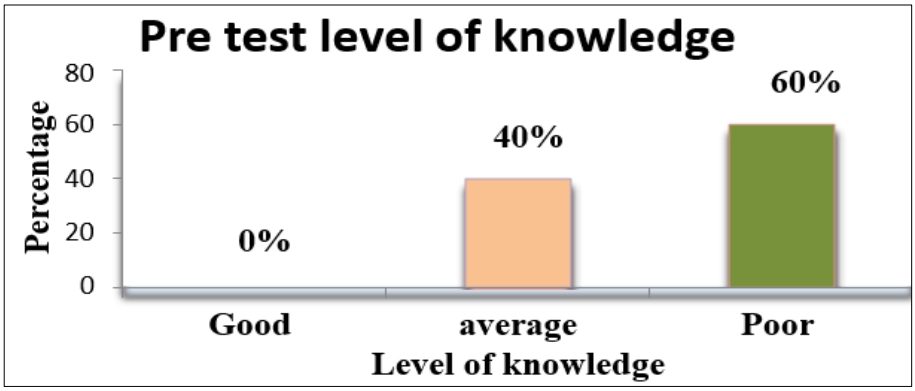

Fig 1: Bar diagram showing percentage of pre test level of knowledge score of adolescent girl regarding anemia and its prevention

Table 3: Frequency and percentages distribution of post test knowledge scores of adolescent girls N = 120

Level of knowledge	Post test knowledge score	F	%
Good	21-30	83	69.16
Average	11-20	35	29.16
Poor	00-10	2	1.66

Maximum score = 30 Minimum score = 00

Data presented in the table 3 depicts the frequency and percentage of post test knowledge score of adolescent girls regarding anemia and its prevention. Maximum 69.16% of adolescent girls were having good knowledge and 29.16%

of adolescent girls were having average knowledge and 1.66% of adolescent girls were having poor knowledge regarding anemia and its prevention during post test.

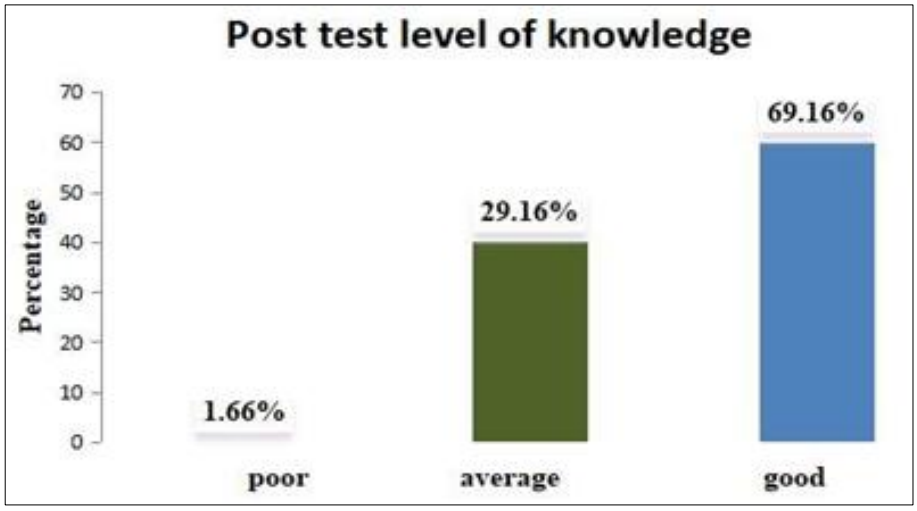

FIG 2: Bar diagram showing percentage of post test level of knowledge score of adolescent girl regarding anemia and its prevention

Table 4: Comparison of mean pre- test and post- test knowledge scores of adolescent girls regarding anemia and its prevention N = 120

Level of knowledge	Mean	Mean diff.	Median	Standard Deviation	df	t	P Value
Pre test	9.93	12.07	10	3.64	119	23.287*	1.98
Post test	22		23	4.2			

*significant at (p≤0.05)
** NS-Non significant (*p*> 0.05)

This data depicts in table 4 shows the effectiveness of planned teaching programme on knowledge regarding anemia and its prevention. The knowledge mean pre test knowledge score was 9.93 and mean post test knowledge score was 22. And t value is obtained (23.287) was found to be statistically highly significant at 0.05 level of significance.

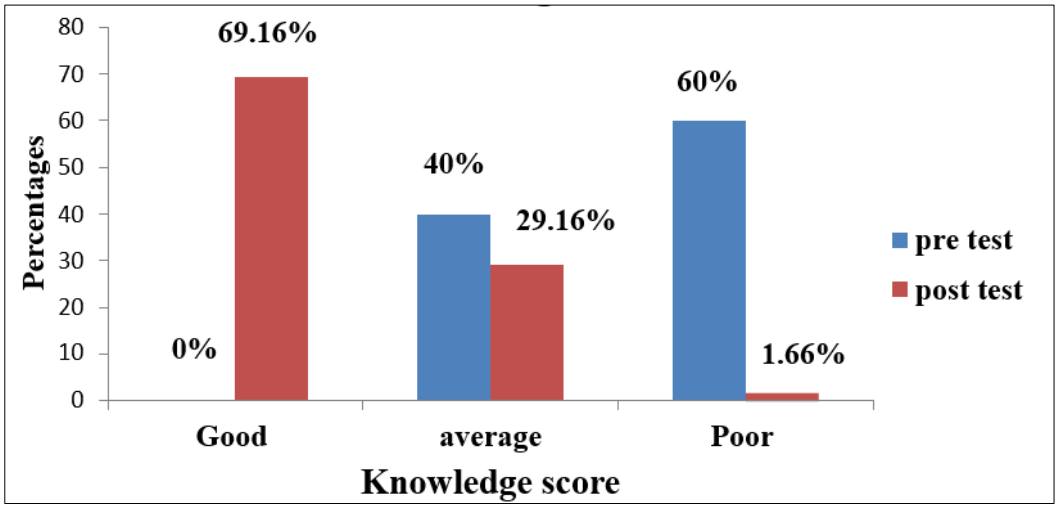

Fig 3: Knowledge score

The data reveal that there was significant association of level of knowledge with place of residence and source of information and they were found statistically significant at 0.05 level of significance. Thus it is revealed that place of residence and source of information had some impact on level of knowledge score of adolescent girls.

There was no significant association of level of knowledge with socio demographic variables i.e age, class, family monthly income, educational status of mother, educational, eating habit, menstruation had begun, duration of menstruation and previous knowledge.

Discussion

1. To assess the pretest knowledge score of adolescent girls.
2. The result of present study shows that in pretest 60% adolescent girls were having poor knowledge and 40% adolescent girls were having average knowledge.
3. To assess the post test knowledge score of adolescent girls.
4. In post test 69.16% were having good knowledge, 29.16% were having average knowledge and 1.66% were having poor knowledge

5. To evaluate the effectiveness of panned teaching programme by comparing pre test and post test knowledge score.
6. Mean post test knowledge score was significantly higher ($p<$ 0.0001) following implementation of planned teaching program showing effectiveness of the tool to enhance the knowledge
7. To associate the pre test knowledge score of adolescent girls with selected demographical variables.
8. The data reveal that there was significant association of level of knowledge with place of residence and source of information and they were found statistically significant at 0.05 level of significance.

Conclusion

It was concluded that implementation of planned teaching program showing effectiveness of tool to enhance the knowledge of adolescent girls regarding anemia and its prevention.

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