"Effectiveness Of Stuctured Teaching Programmme On Knowledge Regarding Iron Deficiency Anemia Among Adolescent Girls"

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ABSTRACT

INTRODUCTION

Anaemia is the commonest haematological disorder that may occur in pregnancy. Iron deficiency is the most prevalent single deficiency state on a worldwide basis. It is important economically because it diminishes the capability of individuals who are affected to perform physical labour, and it diminishes both growth and learning in children . Iron is an important micronutrient which is Very Important for various functions in the human body. It is essential for cellular growth and differentiation, oxygen binding, transport and storage, enzymatic reactions, immune function, cognitive function, mental and physical growth etc. So, iron deficiency due to physiological or pathological reasons can affect mental and physical growth, resulting in decreased learning capacity and work productivity. Iron Deficiency Anemia is characterized by a defect in haemoglobin synthesis, resulting in hypochromic and microcytic red blood cells. Iron deficiency can result either due to less nutritional supply, increased demand or blood loss due to any reason. There are many reasons for iron deficiency and Iron Deficiency Anemia in adolescent girls. These may be deficient intake or absorption of iron, increased demand during adolescence, heavy blood loss during menstruation, parasitic infestation etc. More than half of the world's undernourished population lives in India. Although Iron Deficiency Anemia occurs at all ages and involves both sexes, adolescent girls are more prone to it. The World Health Organization (WHO) defined adolescents as the population of 10-19 years of age. About three fourth of adolescent females do not meet the dietary requirements.

Majority of the adolescents think that they are in good health and show little concern for protecting their health. The main nutritional problems of adolescents are micronutrient deficiencies like iron deficiency, folate and vit.A. According to a study by WHO on anaemia during 1993-2005, the worldwide prevalence of anaemia was 25%. According to WHO guidelines for the control of IDA, nutritional anaemia is a major public health problem in India and is primarily due to iron deficiency. The National Family Health Survey-3 (NFHS-5,19-2021) data suggests that the prevalence of anaemia in adolescent girls (15-19 years) is 59.1%. According to the National Nutrition Monitoring Bureau Survey (NNMBS) 2006, the prevalence of anaemia in adolescent girls (12-14 years) is 68.6% whereas in (15-17 years) it is 69.7%. Aim of the study was to assess the effectiveness of Structured Teaching Programme On Knowledge Regarding Management Of Iron Deficiency Anaemia Among adolescent girls .

PROBLEM STATEMENT

"A study to assess the effectiveness of stuctured teaching programmme on knowledge regarding iron deficiency anemia among adolescent girls at selected schools , Indore , M.P."

OBJECTIVES OF STUDY

1. To assess the pre test knowledge score among adolescent girls regarding Iron deficiency anemia before and after administration of STP.

2. To assess the post test knowledge score among adolescent girls regarding Iron deficiency anemia before and after administration of STP.

3. To assess the effectiveness of structured teaching programme on knowledge regarding Iron deficiency anemia by comparing pre-test and post test knowledge.

4. To find an association between pre-test knowledge score among adolescent girls with their selected demographic variables.

HYPOTHESIS

RH1- There will be significant difference between pre test knowledge score and post test knowledge scores of adolescent girls on Iron deficiency anemia, $(P<0.05)$.

RH2- There will be a significant association between pre- test attitude scores of adolescent girls with selected demographical variables at the level of $P<0.05$.

RESEARCH METHODLOGY

RESEARCH APPROACH: The approach used in the present study was quantitative approach. Quantitative approach most often uses deductive logic, in which researcher start with hypothesis and then collects data which can be used to determine whether empirical evidence to support that hypothesis exists.

RESEARCH DESIGN: The research design selected for the study was pre experimental one group pre test post-test design. It judges the effectiveness of the structured teaching programme by the difference of adolescent girls pre and post test knowledge score regarding iron deficiency anemia Diagrammatic representation of the design is given below

The diagrammatic representation of this design is as follows,

Group	Pre-test	Intervention	Post-test
Experimental Group	O1	X	O2

O1: Pre Test

X: Intervention

O2: Post Test

SAMPLE & SAMPLING TECHNIQUE: Sample comprised of of 60 adolescent girls of selected schools of Indore, (M.P.). Non probability purposive sampling technique was used.

CRITERIA FOR THE SELECTION OF THE SAMPLES

Inclusion Criteria

- Adolescent girls of selected schools of Indore

- Adolescent girls who are willing to participate in study

- Those who can read and write Hindi and English.

Exclusion Criteria

- Adolescent girls who are not willing to participate in the study.

- Adolescent girl those who were not available at the time of data collection.

DESCRIPTION OF TOOL

Part A: Demographic variables: It consists of demographic variables such as Age, Religions, Educational Status of the Parents, Occupation of the Parents,, Type of Family, Family Income and Previous Knowledge on Anemia.

Part B: Self Structured knowledge questionnaire: It consists of 30 Iron deficiency anaemia related questions including causes, symptoms, diagnosis, treatment, management of anemia. Each question has 4 options in which one is correct answer which is scored 1 and maximum score is 30.

SCORING OF TOOL:

Poor (0-7)

Fair (8-15)

Good (16-23)

Excellent (24-30)

VALIDATION AND RELIABILITY OF THE TOOL: The tool was submitted to 8 experts from the field of child health nursing along with the blue print criteria checklist, answer key, module to establish the content validity. The reliability was calculated using test retest method. The tool was found reliable r= 0.80.using Karl Pearson formula. The tool found to be clear and understandable.

DATA COLLECTION PROCEDURE: The investigator obtained written permission from the concerned authority prior to the data collection at the schools. Pre test knowledge was assessed using structured knowledge questionnaire to assess the existing knowledge of adolescent girls regarding iron deficiency anemia on the first day. on the same day informational booklet was distributed among the samples and instruction to use informational booklet was explained and the date for the post test was priorly informed to them. Post test knowledge assessment was done using the same questionnaire among the adolescent girls after 5 days.

RESULT AND INTERPRETATION

Table No. 1 Distribution of adolescent girls according to demographic variables

S. No.	Demographic Variables	No.	Percentage
1.	**Age in years**		
	a. 12-13 years	7	11.7
	b. 13-14 years	18	30.0
	c. 14-15 years	17	28.3
	d. 15-16 years	18	30.0
2.	**Education of parents**		
	a. Illiterate	13	21.7
	b. High school	16	26.7
	c. Higher secondary	14	23.3
	d. Graduate	17	28.3
3.	**Place of living**		
	a. Urban	41	68.3
	b. Rural	19	31.7
4.	**Monthly income of parents**		
	a. 10000-20000	41	68.3
	b. 20000-30000	11	18.3
	c. 30000-40000	5	8.3
	d. 40000-50000	3	5.0
6.	**Religion**		
	a. Hindu	57	95.0
	b. Muslim	1	1.7
	c. Sikh	1	1.7
	d. Christian	0	0.0
	e. Others	1	1.7
6.	**Previous knowledge about Iron defiociency anemia**		
	a. Yes	0	0.0
	b. No	60	100.0

The above table shows the distribution of adolescent girls according to demographic variables.

There were 7 (11.7%) adolescent girls in the age group 12-13 years, 18 (30.0%) were in the age group 13-14 years, 17 (28.3%) were in the age group 14-15 years and 18 (30.0%) were in the age group 15-16 years.

13 (21.7%) parents were illiterate, 16 (26.7%) had done their high school, 14 (23.3%) had done their higher secondary and 17 (28.3%) were graduates. Majority of the parents were graduates.

41 (68.3%) adolescents were from urban area and 19 (31.7%) were from rural areas. Majority of the adolescent participants were from urban area.

41 (68.3%) adolescents were having Rs. 10000-20000 monthly income of parents, 11 (18.3%) adolescents were having Rs. 20000-30000 monthly income of parents, 5 (8.3%) adolescents were having Rs. 30000-40000 monthly income of parents and 3 (5.0%) adolescents were having Rs. 40000-50000 monthly income of parents.

57 (95.0%) adolescents were Hindus, 1 (1.7%) adolescents were Muslim, 1 (1.7%) adolescents were Sikh and 1 (1.7%) adolescents were from other religion. Majority of the adolescents were Hindus.

None of the adolescents (100%) were having no previous knowledge about Iron deficiency anemia.

Table No. 2 Comparison Of The Pretest And Posttest Knowledge Grades

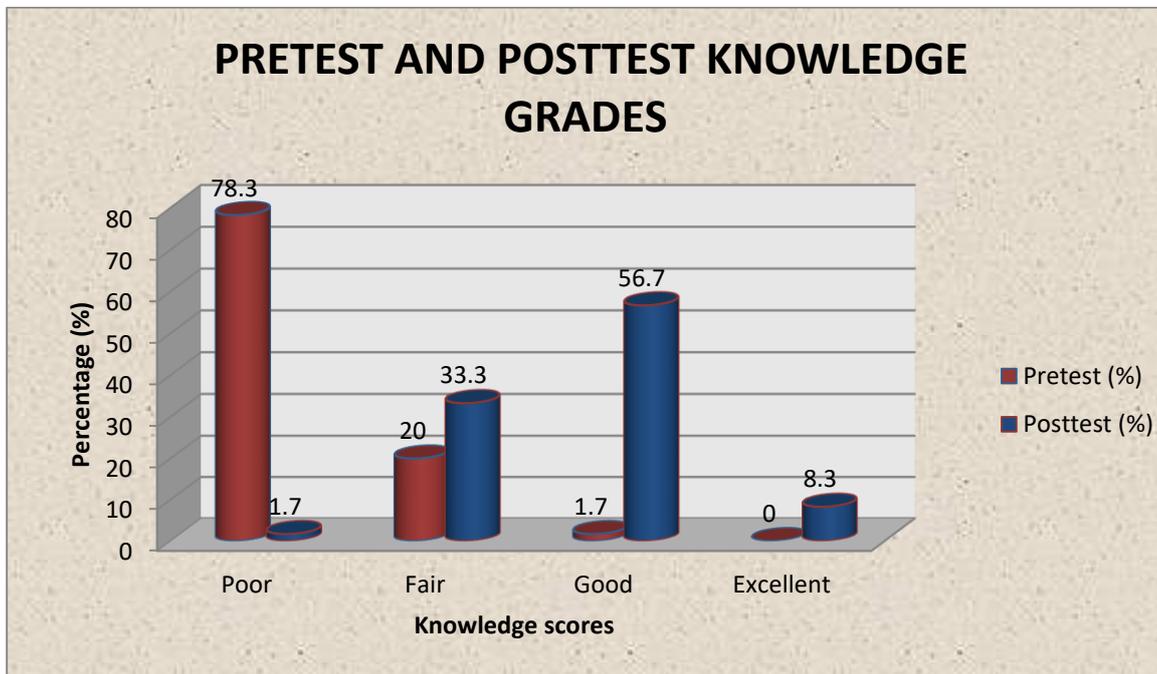| S. No.	Knowledge score		Pretest		Posttest	
			No.	%	No.	%
1.	Poor	(0-7)	47	78.3	1	1.7
2.	Fair	(8-15)	12	20.0	20	33.3
3.	Good	(16-23)	1	1.7	34	56.7
4.	Excellent	(24-30)	0	0.0	5	8.3
	Total		60	100.0	60	100.0

Paired 't' test applied. P value = 0.000, Significant

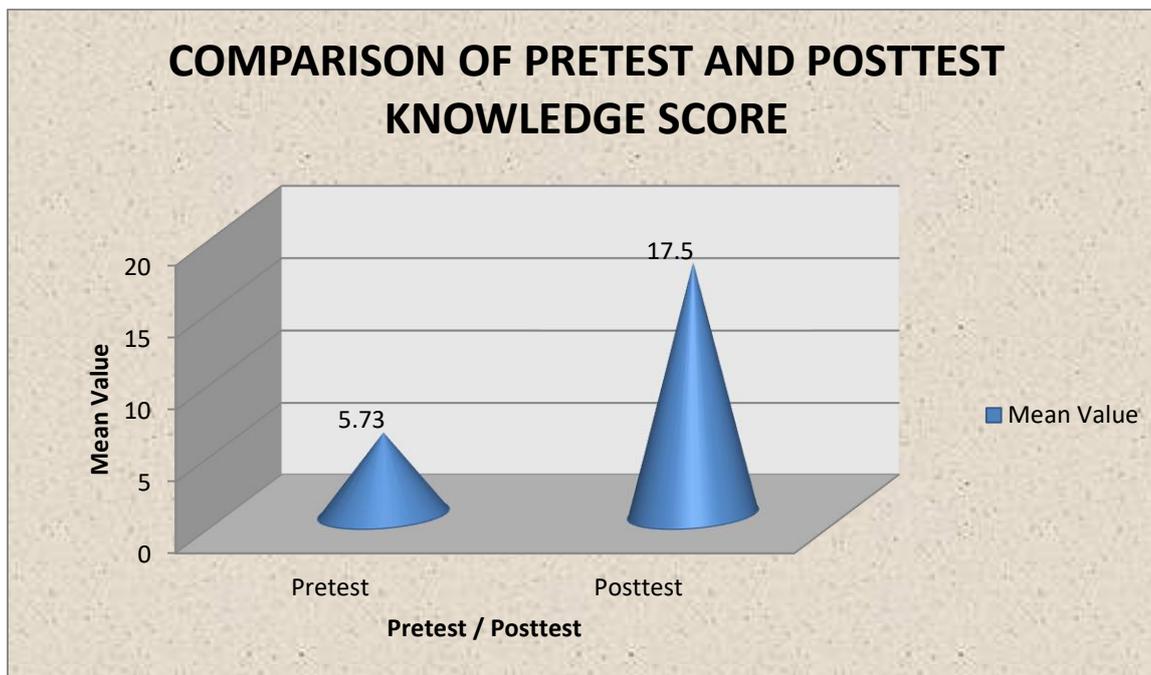*Figure : Bar diagram showing pretest and posttest knowledge score*

Table No. 3 Comparison of the pretest and posttest knowledge score

S. No.	Knowledge Score	Mean ± SD	't' value	P value
1.	Pretest	5.73 ± 3.39	-18.666, df=59	0.000*
2.	Posttest	17.50 ± 4.30		

Paired 't' test applied. P value = 0.000, Significant

The above table shows the comparison of pretest and posttest knowledge score.

The pretest knowledge score was 5.73 ± 3.39, while the posttest knowledge score was 17.50 ± 4.30. The difference was found to be statistically significant ('t' value = -18.666, df=59, p value=0.000, Significant), showing a higher posttest knowledge score.

Graph : Bar diagram showing comparison of pretest and posttest knowledge score

After the assessment of knowledge, In the posttest, 1 (1.7%) adolescent girl got poor knowledge grade, 20 (33.3%) adolescent girls got fair knowledge grade, 34 (56.7%) adolescent girl got good knowledge grade and 5 (8.3%) adolescent girls got excellent knowledge score. So, my study shows that the intervention improved the knowledge level of the adolescent girls regarding Iron deficiency anemia.

The pretest knowledge score was 5.73 ± 3.39, while the posttest knowledge score was 17.50 ± 4.30. The difference was found to be statistically significant ('t' value = 18.666, df=59, p value=0.000, Significant), showing a higher posttest knowledge score. Hence the hypothesis no. 1 that there will be a significant difference between pretest and posttest knowledge score at the level of p value o.05 is proved and statically accepted.

There is no statistically significant association seen between pretest knowledge score and the demographic variables, showing that pretest knowledge score is independent on the demographic variables of the adolescent girls . Hence the hypothesis no.2 is rejected and null hypothesis accepted.

Table No. 4 Association of pretest knowledge with sociodemographic varriables Association of pretest knowledge grade with age

S. No.	Age	Pretest Knowledge grade				$\chi 2$	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
1.	**Age in years** a. 12-13 years b. 13-14 years c. 14-15 years d. 15-16 years	6 16 10 15	1 2 7 2	0 0 0 1	0 0 0 0	8.870, df=6	0.181, NS
	Total	47	12	1	0		

$\chi 2$=8.870, df=6, P value = 0.181, Not Significant

The above table shows the association between pretest knowledge grade and age.

There is a statistically no significant association seen between pretest knowledge grade and the age ($\chi 2$=8.870, df=6, P value = 0.181, Not Significant), showing that pretest knowledge grade is independent of the age of the adolescent girls.

Association of pretest knowledge grade with Education of parents

S. No.	Education of parents	Pretest Knowledge grade				$\chi 2$	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
2.	**Education of parents** a. Illiterate b. High school c. Higher secondary d. Graduate	9 13 13 12	3 3 1 5	1 0 0 0	0 0 0 0	6.262, df=6	0.395, NS

| Total | 47 | 12 | 1 | 0 | | |

χ2=6.262, df=6, P value = 0.395, Not Significant

The above table shows the association between pretest knowledge grade and education of parents.

There is a statistically no significant association seen between pretest knowledge grade and the education of parents ($\chi2$=6.262, df=6, P value = 0.395, Not Significant), showing that pretest knowledge grade is independent of the education of parents of the adolescent girls.

Association of pretest knowledge grade with Place of living

S. No.	Place of Living	Pretest Knowledge grade				χ2	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
3.	**Place of living** a. Urban b. Rural	33 14	7 5	1 0	0 0	1.095, df=2	0.578, NS
	Total	47	12	1	0		

χ2=1.095, df=2, P value = 0.578, Not Significant

The above table shows the association between pretest knowledge grade and place of living.

There is a statistically no significant association seen between pretest knowledge grade and the place of living ($\chi2$=1.095, df=2, P value = 0.578, Not Significant), showing that pretest knowledge grade is independent of the place of living of the adolescent girls.

Association of pretest knowledge grade with Monthly income of the parents

S. No.	Monthly income of the parents	Pretest Knowledge grade				χ2	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
5.	**Monthly income of parents**					3.261, df=6	0.775, NS
	a. 10000-20000	34	6	1	0		
	b. 20000-30000	7	4	0	0		
	c. 30000-40000	4	1	0	0		
	d. 40000-50000	2	1	0	0		
	Total	47	12	1	0		

χ2=3.261, df=6, P value = 0.775, Not Significant

The above table shows the association between pretest knowledge grade and monthly income of parents.

There is a statistically no significant association seen between pretest knowledge grade and the monthly income of parents (χ2=3.261, df=6, P value = 0.775, Not Significant), showing that pretest knowledge grade is independent of the monthly income of the parents.

Table No. 4
Association of pretest knowledge grade with Religion

S. No.	Religion	Pretest Knowledge grade				χ2	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
6.	**Religion**					0.873, df=6	0.990, NS
	a. Hindu	44	12	1	0		
	b. Muslim	1	0	0	0		
	c. Sikh	1	0	0	0		
	d. Christian	0	0	0	0		
	e. Others	1	0	0	0		

Total	47	12	1	0	

χ2=0.873, df=6, P value = 0.990, Not Significant

The above table shows the association between pretest knowledge grade and religion.

There is a statistically no significant association seen between pretest knowledge grade and the religion (χ2=0.873, df=6, P value = 0.990, Not Significant), showing that pretest knowledge grade is independent of the religion of the adolescent girls.

**Association of pretest knowledge grade with
Previous knowledge about Iron defiociency anemia**

S. No.	Previous knowledge about Iron defiociency anemia	Pretest Knowledge grade				χ2	P value
		Poor (0-7)	Fair (8-15)	Good (16-23)	Excellent (24-30)		
8.	**Previous knowledge about Iron deficiency anemia** a. Yes b. No	0 47	0 12	0 1	0 0	-	-
	Total	47	12	1	0		

χ2=could not be applied.

The above table shows the association between pretest knowledge grade and previous knowledge about Iron defiociency anemia,

The test of association could not be applied as one of the parameters was a constant.

There is no statistically significant association seen between pretest knowledge score and the demographic variables, showing that pretest knowledge score is independent on the demographic variables of the adolescent girls. Hence the hypothesis no.4 is rejected and null hypothesis accepted.

CONCLUSION

The pretest knowledge score was 5.73 ± 3.39, while the posttest knowledge score was 17.50 ± 4.30. The difference was found to be statistically significant ('t' value = -18.666, df=59, p value=0.000, Significant), showing a higher posttest knowledge score. . Hence the hypothesis no. 1 that there will be a significant difference between pretest and posttest knowledge score at the level of p value o.05 is proved and statically accepted.

From the above results we can conclude that there was statistically significant gain in knowledge among adolescent girls regarding iron deficiency anemia. Thus , the intervention was effective.

REFRENCES

1. Ashtarian, H., Marzbani, B., Almasi, A., Marzbani, B., Khezeli, M. and Shahabadi, S., 2018. The Effect Of Educational Intervention Based On The Theory Of Planned Behaviour On Consumption Of Iron Supplement In High School Girls. Journal Of Evolution Of Medical And Dental Sciences-Jemds, 7(39), pp.5091-5098.

2. Biswas, U.N., 2020. Adolescent Reproductive Health in South Asia: Issues and Challenges. Gender Equality Eds, pp.1-10.

3. Deepti, M., Chaudhary, P., Kaur, M.R. and Chitra, M.P., 2021. A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention and Prevalence of Anemia among Adolescent Girls in Selected Areas.

4. Dhanya, V.J., Elsamma, C.S. and Fijo, S., 2019. Effectiveness of Structured Teaching Program on Knowledge about Anaemia among Tribal Adolescent Children with Anaemia. International Journal of Nursing Education, 11(3).

5. Kamalaja, T., Prashanthi, M. and Rajeswari, K., 2018. Effectiveness of health and nutritional education intervention to Combat anemia problem among adolescent girls. Int. J. Curr. Microbiol. Appl. Sci, 7(9), pp.3152-3162.

6. Kapil, U., Kapil, R. and Gupta, A., 2019. Prevention and control of anemia amongst children and adolescents: theory and practice in India. The Indian Journal of Pediatrics, 86(6), pp.523-531.

7. KHAN, A., SHAN, A. and ISLAM, D., 2020. A Study To Assess The Effectiveness Of Structured Teaching Program Regarding Anemia And Its Prevention Among Antenatal Mothers In Selected Hospital Of Greater Noida. Galgotias University.

8. Kotkar, M., 2021. A study to assess the effectiveness of self-instruction module regarding knowledge on prevention of iron deficiency anemia among 8th–10th standard girls in selected school, Pune.

9. Malathi, K.V. and Vijayalakshmi, G., 2018. Study Assess the Effectivness Planned Teaching Programme Knowledge Adolsecent Girls Regarding Management Menstrual Disorders Nutritional Anemia Selected High School Rural Kolar.

10. Masih, S.D. and Linson, C.C., 2020. Evaluate the effectiveness of planned teaching Programme on knowledge of adolescent girls regarding prevention and management of iron deficiency anemia in selected English medium School Bilaspur. Trends in Nursing Administration and Education (23482141), 9(2), pp.11-16.

11. Meena, S. and Yashaswinideepak, M., 2018. Effectiveness of Structured Teaching Programme on

12. Knowledge Regarding Iron Deficiency Anemia Among Adolescent Girls In Higher Secondary School. IOSR Journal of Nursing and Health Science, 7(2), pp.76-80.

13. Riyanti, R.N., 2018. The use of education booklet for anemia prevention on teenage girls. Indian Journal of Public Health Research & Development, 9(11), pp.230-234.