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Effectiveness of Structured Teaching Program on Knowledge about Anaemia among Tribal Adolescent Children with Anaemia

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Abstract

Introduction: Anemia is a very common problem in pediatric age group in many developing countries with an estimated prevalence of 43% of the World's children. School children constitute 20.25% of total population in India and they are more vulnerable to this disease due to their rapid growth need of high iron.

Method: Quantitative experimental approach with pre-test post-test design was adopted for the study. The main study was conducted among 90 tribal adolescent children, 60 from Govt, Aralam farm high school and 30 from government H.S.S Pala. The samples were selected by purposive sampling technique. The tools used were format for hemoglobin estimation, demographic Performa of the sample, knowledge questionnaire regarding anemia and structured teaching programme on anemia.

Results: This study reveals that majority of tribal adolescent children were anaemic.61.1% of adolescent children had moderately adequate knowledge regarding anemia before the teaching programme and 76.6% had adequate knowledge regarding anemia after the teaching programme. The analysis of the data showed that the pre-test knowledge scores of the tribal adolescent children are significantly higher than that of post test scores ($t=13.575$, $p<0.00$).This emphasizes that the structured teaching programme was effective in improving the knowledge regarding anemia. Further, there was no significant association between the pre-test knowledge scores and selected demographic variables.

Conclusion: The study concluded that the structured teaching programme was effective in improving the knowledge of tribal adolescent children regarding anemia.

Keywords: *Anemia, knowledge, effectiveness, tribal adolescent children, structured teaching programme*

Introduction

Adolescence is a period of transition between childhood and adulthood and it is a significant period of human growth and maturation[1]. The health of adolescents attracted global attention in the past decade. Adolescence being rapid growth period, is at risk of developing nutritional deficiencies including anemia[2]. In India adolescent constitute approximately 21% of the population. Anemia gains increased importance among tribal who are already disadvantaged socioeconomically and face a slow pace of growth.

Generally speaking by the term "tribe" means, a group of people who that live at a particular place from time immemorial. Tribals are indigenous people. Original or native inhabitants of a country known as indigenous people. These aborigines in the Indian languages are known as "Adibasi"- Adi standing for original and Basi standing for inhabitants respectively. These human groups or Adibasis are known as 'scheduled tribe (ST)

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Tribals are found in almost all the states of country. Currently there are between 258 and 540 scheduled tribe communities exists in India. India has the second largest concentration of tribal population in the world. Tribal population of 67.8 million distributed in different states and union territories. Tribals are characterized by a distinctive culture, primitive traits, and socio-economic backwardness[3].

Anemia is a very common problem in pediatric age group in many developing countries with an estimated prevalence of 43% of the World's children. School children constitute 20.25% of total population in India and they are more vulnerable to this disease due to their rapid growth need of high iron. Anemia is a condition in which the number of red blood cells or the amount of hemoglobin is low. Red blood cells contain hemoglobin protein that it enables them to carry oxygen from the lungs and deliver it to all parts of the body.[4]. Iron deficiency is the most common nutritional disorder in the developing world and the most common cause of nutritional anemia in young children and women of reproductive age.

Objectives of the Study

1. Identify tribal adolescent children with anemia based on their measured haemoglobin level

2. Assess the knowledge level of tribal adolescent children regarding anemia.

3. Determine the effectiveness of structured teaching program on knowledge of tribal adolescent children regarding anemia.

4. Find out the association between pre-test knowledge score and selected demographic variables like age, sex, education, father's job, mother's job and monthly income per month.

Material and Method

Research Approach

The present study adopted a quantitative experimental approach.

Research Design

The research design selected for this study was Pre-experimental one group pre-test, post-test design.

Variables

· Independent variable was the structured teaching programme.

· Dependent variable was the knowledge of tribal adolescent children regarding iron deficiency anaemia.

· The demographic variables considered in this study were age, sex, educational status, family structure, father's job, mother's job, and monthly income per month

Setting of the Study

Selected Tribal schools of Aralam Panchyath, in Kannur.

Population

All the tribal adolescent boys and girls studying in tribal schools.

SAMPLE

All the tribal adolescent boys and girls studying in selected tribal schools who met the inclusion criteria.

SAMPLE SIZE

90 tribal adolescent children.

SAM PLING TECHNIQUE

Purposive sampling technique

Inclusion Criteria

- Tribal adolescent children studying in selected schools in Aralam
- Tribal adolescent children in the age group of 12-16years
- Tribal adolescent children present in the school during the days of data collection

Exclusion Criteria

Tribal adolescent children who are not willing to participate in the study

Description of the Tool

Tool- 1: Demographic proforma of the sample

Tool -2: Structured knowledge questionnaire regarding anaemia

Tool -3: Format for haemoglobin estimation

Data collection process

Two schools were randomly selected. After obtaining the official permission from the concerned authorities and informed consent from the samples ant their parents. The haemoglobin estimation was done by using Sali's haemoglobin method. A pre test knowledge questionnaire was then distributed among the adolescent children and was collected back after 30 minutes. A 45minutes long structured teaching programme regarding anaemia prepared by the researcher with the help of the guide, was given to all adolescent children. Teaching was given using lecture cum demonstration method. During the teaching programme, the researcher demonstrated the method of preparing raggi porridge. Post test was conducted on the seventh day after pretest by administering using the same questionnaire

Plan for Data Analysis

· Descriptive and inferential statistics used for data analysis, using SPSS version 19.

Descriptive statistic methods

· The sample characteristics would be analyzed using methods like frequency and percentage and will be depicted in frequency tables and graphs.

· The mean score of the pre-tests and post tests conducted would be calculated.

Inferential statistic methods

· The pre test scores would be compared with the post test scores using paired t-test

· The association between the pre test scores and the selected demographic

Variables would be analysed using Chi-Square test.

Findings

Section 1: Description of demographic characteristics

Table I: Frequency and distribution of demographic variables N=90

Sl.no	Demographic variables	Frequency	Percentage
1	Age of tribal adolescent children		
	12 – 13 years	16	17.8
	13 – 14 years	33	36.7
	14 – 15 years	2	24.7
	15 – 16 years	19	21.1
2	**Sex**		
	Male	42	46.6
	Female	48	53.3
3	**Education**		
	7^{th} std	15	16.70
	8^{th} std	41	45.60
	9^{th} std	34	37.80
	10^{th} std	0	0.00
4	**Type of family**		
	Nuclear family	50	55.60
	Joint family	40	44.40
5	**Father's job**		
	Agriculture	4	4.4
	Cooli worker	79	87.8
	Government job	4	4.4
	Other jobs	3	3.3
6	Mother's job		
	Agriculture	3	3.3
	Cooli worker	79	87.8
	Government job	1	1.1
	Other's job	7	7.8
7	**Monthly income**		
	<1000	28	31.1
	2000 – 3000	38	42.2
	3000 – 4000	18	20
	>5000	6	6.70

Data presented in the table 1 shows that majority of the adolescent children belonged to the age group of 13-14 years. Most of the samples were females, 45.6% of samples were in of 8th standard and majority of the sample belonged to the nuclear family.87.8% of fathers and mothers were collie worker and majority of sample had monthly income between 2000-3000 rupees.

Section II: Analysis of haemoglobin estimation

This section describes the analysis of haemoglobin estimation of tribal adolescent children. The cut off point of haemoglobin level of adolescent children was below 11gm/dl in boys and below 10gm/dl in girls as recommended by WHO.

Table 2:Distribution of sample based on haemoglobin level N=90

Categorization of haemoglobin level	Frequency		Percentage	
	Boys	Girls	Boys	Girls
7-8	0	0	0	0
8.1 – 9	0	2	0	2.2
9.1-10	0	18	0	20
10.1-11	2	11	2.2	12.2
11.1- 12	16	6	17.7	6.6
>12	24	11	26.6	12.2

Data presented in the table 2 shows that majority (26.6%) of the adolescent boys and girls (12.2%) had haemoglobin level within normal range.20% of the girls and 2.2% of the boys had haemoglobin range less than the cut off point

WHO grading of anemia

Hb – 10 - 12gm/dl – Mild anaemia

Hb – between 7 to 10gm/dl – Moderate anaemia

Hb - <7gm/dl – Severe anaemia

Table 3: Categorisation of anaemia based on WHO grading N=90

Categorization of anemia	Frequency		Percentage	
	Boys	girls	boys	girls
Mild anaemia	18	17	20	18.8
Moderate anaemia	0	20	0	22.4
Severe anaemia	0	0	0	0

Data presented in the table 3 shows that 22.4% of girls were moderately anaemic.20% adolescent boys and 18.8% girls were with mild anaemia. None of them had severe anaemia. 38.8% of children were not anaemic.

Section III: Analysis of the pre-test knowledge scores of tribal adolescent children regarding knowledge on anaemia.

This section describes the analysis of the pre-test knowledge scores obtained by the tribal adolescent children on anaemia. The scores were rated as inadequate knowledge (0-10marks), moderately adequate knowledge (11-21marks) and adequate knowledge (22-32marks) and mean pre-test scores are calculated.

Table 4: Description of pre-test knowledge scores of adolescent children regarding anaemia N=90

Categorisation of knowledge	Frequency (f)	Percentage
Inadequate knowledge (0-10 marks)	31	34.4
Moderately adequate knowledge(11-21marks)	55	61.1
Adequate knowledge (22-32 marks)	4	4.4

Data presented in table 4 indicate that the majority (61.1%) of the adolescent children had moderately adequate knowledge regarding anaemia before the teaching programme.

Section IV: Analysis of the post knowledge scores of tribal adolescent children regarding knowledge on anemia.

Table 5: Description of post-test knowledge scores of tribal adolescent children regarding anaemia.

N=90

Categorization of knowledge	Frequency	Percentage
Inadequate knowledge (0-10 marks)	0	0
Moderately adequate knowledge (11-21 marks)	21	23.3
Adequate knowledge (22-32marks)	69	76.6

Table 5, shows that majority (76.6%) of the adolescent children had moderately adequate knowledge regarding anaemia after the teaching programme.

Section V: Effectiveness of structured teaching programme on knowledge of tribal adolescent children regarding anemia

This section compares the pre-test and post-test knowledge scores of the adolescent children in the tribal school to identify whether there is any significant difference between the pre-test scores and post test scores. For this paired 't 'test is used with a confidence interval of 95%.

H01: There is no significant difference between the mean pre -test and post -test knowledge of the tribal adolescent children regarding anaemia.

Table 6: Comparison of pre-test with post-test knowledge scores of tribal adolescent children regarding anaemia. **N=90**

	Mean	SD	df	t	p
Pre test scores	12.64	4.455	89	13.575	0.00 *
Post test scores	19.14	3.885			

*significant at 0.05 level

The data presented in the table 6, indicate that there was significant difference in the mean pre-test and post-test knowledge scores of adolescent children regarding anemia. An examination of't' value and 'p' value shows that the difference in mean pre test and post test knowledge scores of adolescent children regarding anemia was statistically significant. Hence the research hypothesis was accepted and it is inferred that the teaching programme was effective in improving the knowledge of adolescent children regarding anemia.

Section VI: Analysis of association between pre test knowledge scores with selected demographic variables of adolescent children

In this section analysis of association of pre test knowledge scores of adolescent children of tribal areas with selected demographic variables such as age, sex, educational status, family structure,occupation and monthly income per month was done. The statistical method used is Chi-Square at 0.05 level.

H02: There is no statically significant association between the pre-test knowledge scores with selected demographic factors

Table 7: Association between pre test scores of adolescent children with selected demographic variables N=90

Demographic Variables	χ^2	Df	P
Age	11.048	9	0.272
Sex	2.103	3	0.551
Education	3.042	6	0.804
Family structure	1.869	3	0.600
Father's occupation	9.741	9	0.372
Mother's occupation	1.617	9	0.996
Monthly income	12.053	9	0.210

*0.05level of significance

Data presented in the table 7, shows that there is no significant association between the pre test knowledge of adolescent children and selected demographic variables such as age, sex, education, father's job, mother's job and monthly income

Discussion

The present study revealed that 61.2% of adolescent children were anaemic.22.4% of the adolescent girls were moderate anemia. 20% adolescent boys and 18.8%girls were mild anaemia.38.8% of children are not anaemic. Similar studies have done among adolescent girls in Tribal area of Visakhapatnam district .The result showed that, About 88.9% of adolescent girls were anemic and among them 17.8% were severely anemic. Highest prevalence was seen in the age group of 12-13years and 14-15 years of age group that is 85% and 86.5% respectively[5].

In the present study, 61.1% of adolescent children in pre-test had moderately adequate knowledge, where as in post-test majority 76.6% of the adolescent children exhibited adequate knowledge after the structured teaching programme. Similar studies done in Karnataka, Hassan and Bangalore reviewed by the researcher had shown the same results[46] .Another study was conducted in Belgaum among adolescent girls, the result revealed that 100% of adolescent girls in pre-test had average knowledge, where as in post –test majority 73.33% of the adolescent girls had good knowledge[6].

The present study revealed that there is no association between the knowledge level of adolescent children and the selected demographic variables such as age, sex, education status, father's job mother's job and monthly income. A similar study conducted to determine the prevalence of anemia in adolescent Nepalese girls in a semi urban setting, concluded that the prevalence of anemia was not related to girls age, body mass index, menarcheal status, and socio-demographic factors including parental education or occupation[7].

Conclusion

The study concluded that 61.2% of sample were anaemic. More than 61.1% of the adolescent children had a moderately adequate knowledge regarding anaemia before the teaching programme and majority (76.6%) of the adolescent children's knowledge become adequate after the structured teaching programme. Also, there was no association between the knowledge level and selected demographic variables such as age, sex, education, type of family, father's job, mother's job and monthly income.

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Source of Funding: Self

Ethical Clearance: Ethical clearance for conducting the study was obtained from the research committee of Koyili College of Nursing, Kannur. The permission for the study was obtained from District educational officer, Thalassery, Medical officer, Keezhapally, Sub collector, Site manager, Headmaster of the selected tribal school. Informed consent was taken from the participants and their parents of children.

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