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Education

KEY WORDS:
GROUP C Anaemia, computer assisted teaching program, asses, knowledge, prevention, adolescent, pre-test, post-test, management

A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING PROGRAM (CATP) ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF ANEMIA AMONG ADOLESCENT GIRLS IN A SELECTED HIGHER SECONDARY SCHOOL OF CHRAR-I-SHARIEF BUDGAM, J&K

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ABSTRACT

Anaemia is a major health problem throughout the world, in that Iron Deficiency Anaemia is one of the commonest forms of anaemia. Nearly 400 million women were suffering from Iron Deficiency Anaemia worldwide. 5 In India according to The National Family Health Survey – 3 which was undertaken between 2005-06 reports showed that, more than 55% of the women in India were anaemic. The main aim of the present study was to evaluate the effectiveness of Computer Assisted Teaching Program(CATP)on knowledge regarding prevention and management of anaemia among the adolescent girls in the selected Higher Secondary School of Charar-i-Sharief Budgam.

METHOD A quasi experimental study with one group pretest posttest design was used to assess the effectiveness of CATP on knowledge regarding the prevention and management of anemia among adolescent girls. Simple random technique was used to to collect data from 30 respondents from government girls higher secondary school Chararisharief Budgam and the data was collected and interpreted to assess the effectiveness of CATP on knowledge regarding prevention and management of anemia among adolescent girls(students)

RESULT The findings of study with regard to pre-test knowledge assessment revealed that the mean percentage was 12.9% with standard deviation 2.09 in pre-test knowledge 90% of subjects had inadequate knowledge. In post-test significant increase in knowledge level was found. However, in post-test the mean percentage of knowledge was 22.80% with standard deviation of 1.91. In post-test knowledge level, 76.7% have moderate knowledge and 23.3% have adequate knowledge, which revealed the effectiveness of computer assisted teaching program.

INTERPRETATION AND CONCLUSION: The study proved that respondents had inadequate knowledge the finding of the study showed that CATP was effective in prevention and management of anaemia

INTRODUCTION

Anaemia is one of the public health problems, affecting both developed and developing countries. Around 25% of the population have anaemia about 50% of which is caused due to iron deficiency. Iron deficiency is thought to be the most common cause of anaemia globally, this affects all age groups. In addition, deficiencies of foliate, vitamin B12 and vitamin A and chronic inflammation, parasitic infections and inherited disorders can also cause anaemia. According to WHO estimates, India is one of the countries in the world that has higher prevalence of anaemia

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Anaemia is defined as reduction in the volume of red blood cells or in the concentration of haemoglobin, below lower limit of the normal range for age and sex of the individual.[1] Anaemia is derived from a Greek word 'anaemia' meaning, lack of blood. Anaemia is a term that indicates a low red blood cells count and haemoglobin level less than 10g/dl. It is not a disease but rather reflects a disease state or altered body functions. Physiologically anaemia exists when there is an insufficient amount of haemoglobin to deliver oxygen to the tissue.

Iron is of great importance in human nutrition. The adult human body contains between 3-49g of iron of which about 60-70% is present in the blood as circulating iron and rest as storage iron. Each gram of haemoglobin contains about 3.34mg of iron. The iron requirement for adolescents, girls are 2.4gms and boys 1.2gms of iron. The report by WHO (2002) states that adolescents aged between 10-19 years account for more than one fifth of the world populations in which over 1200 million accounting to 19% of the global populations are affected by nutritional anaemia. Similarly, one half of the non-pregnant women and two thirds of the pregnant women in developing countries have haemoglobin levels below 12gms per decilitre. Iron deficiency, anaemia is one of the primary causes for the wastage of human resource and subsequent degradation of the society. Girls often enter their reproductive years in late adolescence with poor iron status. Iron deficiency can result in negative reproductive consequences associated with premature birth, low birth weight and maternal mortality. The iron deficiency anaemia reduces the work capacity of the individuals and the entire population bringing serious economic consequences and obstacles to national development. By treating the anaemia which prevails among the poorest and least educated, who are the most vulnerable group to iron deficiency, the national productivity could be raised by 20% on the whole. Anaemia increases the risk of foetal mortality and morbidity. In India, 20 to 40 per cent of maternal deaths are due to anaemia. The burden of anaemia is high though the remedy is so transparent for the health care personnel to take up the challenge. World health organisation (WHO 2002) reports that iron deficiency is the most common nutritional disorder in the world. As many as 4-5 million people, [66-80%] of the world's population suffer from anaemia. Two million people over 30% of the world population suffer from anaemia mainly due to iron deficiency. In developing countries anaemia is mainly exacerbated by malaria, worm infestations and less dietary intake.[2]

Causes of anaemia can be lack of balanced diet rich in iron folic acid and vitamin b12, impairment in red blood cell production due to deficiency of hemopoietic factors in nutritional deficiency (nutritional anaemia). excess blood loss due to external bleeding like in road traffic accidents or internal bleeding as in hookworm infestation, excess bleeding during menstruation, autoimmune conditions like rheumatoid arthritis.

The early symptoms of anaemia are physical or mental exertion (fatigue), an inability to be still or comfortable (restlessness) and loss of appetite. Late symptoms may include pallor skin, nail bed and mucous membrane, weakness, loss of balance (vertigo), headache, a feeling of discomfort (malaise) and state of heavy sleepiness (drowsiness). Other features are sore tongue, gastrointestinal problems, increased respiratory rate (tachypnoea), shortness of breath on exertion, increased heart rate (tachycardia), abnormal beating of heart (palpitations), etc. yellowish discoloration of skin (Jaundice) and bleeding underneath skin (ecchymosis) may present in some cases. Long standing or chronic iron deficiency anaemia causes epithelial changes in some patients like koilonychias (spoon shaped nails), inflammation of tongue (glossitis) and inflammation of one or both corners of mouth (angular stomatitis). Reduced attention span, constipation and even cardiac failure may also occur.[3]

Assessment of anaemia can be done by assessing general

appearance (nourishment- malnourished), health (poor health), activity (less active), mental status (conscious, well oriented, anxious and weak), face (puffiness), skin condition (pallor, no jaundice, no bluish colour (cyanosis), little dryness, poor capillary refilling), white and pallor nails.

Anaemia can be managed by dietary changes such as iron rich foods (liver, red meat, beans, lentils, fish, dried fruit and dark green leafy vegetables such as spinach). Foods rich in vitamin B12, vitamin C and folic acid (eggs, bananas, fortified breads, cereals, pastas, citrus fruits) are necessary for red blood cell production also help in managing anaemia. Exercising regularly, avoid exposure to chemicals, washing hands often to avoid infection. In severe cases of anaemia medication like erythropoietin injections, iron and folic acid supplements which are available at health centres are prescribed. Sometimes blood transfusions may be required in severe cases.

METHOD

A quasi experimental study with one group pretest posttest design was used to assess the effectiveness of CATP on knowledge regarding the prevention and management of anemia among adolescent girls. Convenient sampling technique was used to collect data from 30 respondents from government girls higher secondary school Charar i sharief Budgam and the data was collected and interpreted to assess the effectiveness of CATP on knowledge regarding prevention and management of anemia among adolescent girls (students)

DATA COLLECTION PROCEDURE:

Prior to data collection permission was obtained from principal, Government Girls Higher Secondary School ChahariSharief Budgam. The data Collection period was 7 days. The researcher approached target population and purpose of study was explained and confidentiality was assured. In this study 30 Subjects were Selected by convenient sampling technique. Informed consent was taken. Data was collected using structured knowledge questionnaire by the students of Alamdar memorial ***college of Nursing***

Data analysis and interpretation

Table 1 : Frequency distribution of study subjects according to demographic variable(age)

	Characteristics	Percentage	Frequency
AGE	15 years	10.0%	**3**
	16 years	13.3%	**4**
	17 years	40.0%	**12**
	18 years	36.7%	**11**

INFERENCES: The above table shows that,10% of the study subjects were in the age group of of 15 years, 13.3% of the study subjects were in the age group of 16 years, 40% of the study subjects were in the age group of of 17 years and 36.7%of the study subjects were in the age group of of 18 years

Table 2: Frequency distribution of study subjects according to demographic variable (monthly income)

	Characteristics	Percentage	Frequency
MONTHLY INCOME	Below 20,000	40.0%	**12**
	20000-50,000	40.0%	**12**
	50-1 lakh	20.0%	**6**
	Above 1 lakh	0.0%	**0**

INFERENCES: The above table shows that, **40.0%** of the study subjects were those who were having income below 20000,**40.0%** of the study subjects were those who were having 20,000-50,000**, 6 (20%)** of the study subjects were those who were having income between 50,000-1lakh and **0 (0%)** of the study subjects were those who were having income above 1lakh.

Table 3: Frequency distribution of study subjects according to demographic variable (educational status of father).

	Characteristics	Percentage	Frequency
EDUCATIONAL STAUS OF FATHER	Illiterate	40.0%	**12**
	Matric	40.0%	**12**
	Graduate	20.0%	**6**
	Post Graduate	0.0%	**0**

INFERENCES: The above table shows that **12 (40.03%)** of the study subjects were those whose father is illiterate,**12 (40.03%)** of the study subjects who had studied up to matric class,**6 (20%)** of the study subjects were those who were having qualification up to graduation level, **0 (0%)** of the study subjects were having post graduate level of educational qualification.

Table 4: Frequency distribution of study subjects according to demographic variable (educational status of mother).

	Characteristics	Percentage	Frequency
EDUCATIONAL STAUS OF MOTHER	Illiterate	50.0%	**15**
	Matric	43.3%	**13**
	Graduate	3.3%	**1**
	Post Graduate	3.3%	**1**

INFERENCES: The above table shows that, **15 (50%)** of the study subjects were those who whose mother is illiterate, **13 (43.3%)** of the study subjects were those whose mother is having educational qualification up to matric level, **1(3.3%)** of the study subjects were those who were having educational qualification up to graduate level and **1 (3.3%)** of the study subjects were those who were having educational qualification up to post graduate level.

Table 5: Frequency distribution of study subjects according to demographic variable (Occupation of father).

	Characteristics	Percentage	Frequency
OCCUPATION OF FATHER	Unemployed	30.0%	**9**
	Labour	30.0%	**9**
	Business	26.7%	**8**
	Govt./ Private job	13.3%	**4**

INFERENCES: The above table shows that, **9 (30.0%)** of the study subjects were those whose father is unemployed, **9 (30.0%)** of the study subjects were those whose father is labour,**8 (26.7%)** of the study subjects were those whose fathers' occupation is business and **4(13.3)** of the studysubjects were those whose fathers' occupation is either government or private job.

Table 6: Frequency distribution of study subjects according to demographic variable (Occupation of mother).

	Characteristics	Percentage	Frequency
OCCUPATION OF MOTHER	Unemployed	76.7%	**23**
	Labour	0.0%	**0**
	Business	13.3%	**4**
	Govt./ Private job	10.0%	**3**

INFERENCES: The above table shows that, **23 (76.7%)** of the study subjects were those whose mother is unemployed, **0 (0%)** of the study subjects were those whose mother is labour, **4(13.3%)** of the study subjects were those whose mother is businesswoman and **3 (10%)** of the study subjects were those who were having either government or private job.

Table 7: Frequency distribution of study subjects according to demographic variable (Source of information).

	Characteristics	Percentage	Frequency
SOURCE OF INFORMATION	Electronic media	76.7%	**23**
	Print media	23.3%	**7**
	Professional programmes	0.0%	**0**
	Any other	0.0%	**0**

INFERENCES: The above table shows that, **23 (76.7%)** of the study subjects were those who were having source of information through electronic media, **7(23.3%)** of the study subjects were those who were having source of information through print media, **0 (0%)** of the study subjects were those who were having source of information through professional programs and **0 (0%)** of the study subjects were those who were having source of information through any other means.

Mean and SD of the Pre-test Knowledge Score of study subjects.

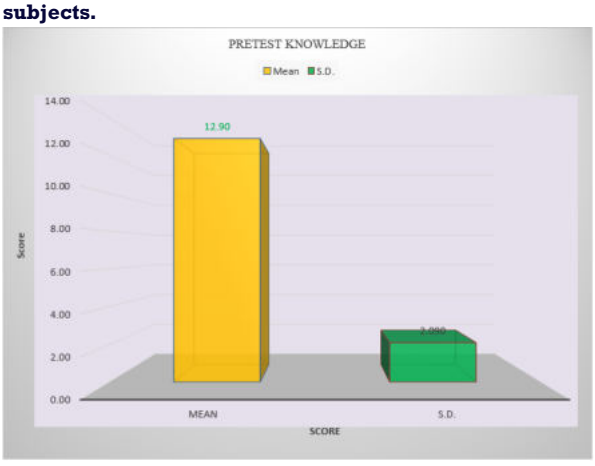

Figure No. 1: Pre-test knowledge of study subjects

INFERENCES: The above figure shows that mean and SD of the pre-test knowledge score was 12.9 and 2.09 respectively.

Mean and SD score of the post knowledge score of the study subjects.

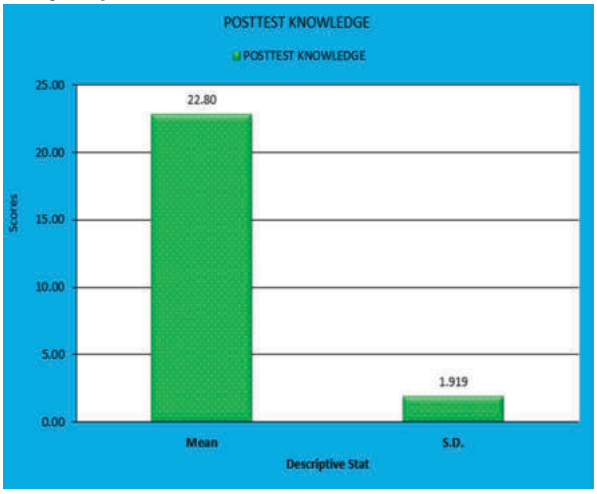

Figure No 2: post-test knowledge score of study subjects

INFERENCES: The above figure shows that mean and SD of the post-test knowledge score was 22.80 and 1.919 respectively.

Table 08: Distribution of study subjects according to Pre-test Knowledge Score

N=30

SCORE LEVEL (N= 30)	PRETEST (F %)
INADEQUATE.(0-14)	27(90%)
MODERATE.(16-24)	3(10%)
ADEQUATE.(25-30)	0(0%)

INFERENCES: The above table shows that most of the study subjects that I.e. 27(90%) had inadequate knowledge in the pre-test, 3(10%) had moderate knowledge in the pre-test and 0 (0%) study subjects had adequate knowledge in the pre-test

Table 09: Distribution of study subjects according to Post-Test Knowledge Score

Score Level	POST -TEST (F%) N=30
INADEQUATE.(0-14)	0(0%)
MODERATE.(16-24)	23(76.7%)
ADEQUATE.(25-30)	7(23.3%)
Maximum Score=30 Minimum Score=0	

INFERENCES;The above table shows that the most of the study subjects i.e. 23 (76%) had moderate knowledge, 7 (23.3) had adequate knowledge and 0 (0%) had inadequate knowledge in the post test.

Table 10: Comparison of study subjects according to pre-test and post-test knowledge score

Overall score	Mean±S.D.	Mean%	Range	Mean Diff.
PRETEST KNOWLEDGE	12.9±2.09	43.00	9-17	9.900
POSTTEST KNOWLEDGE	22.8±1.919	76.00	19-26	

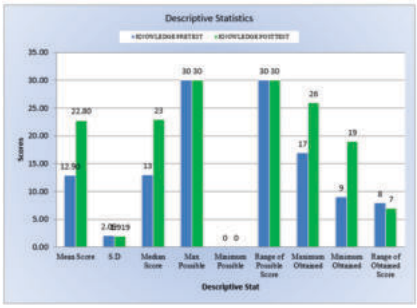

Figure no. 3: comparison between pre-test and post-test knowledge scores

INFERENCES: The above table shows that post-test mean+SD score of the study subjects i.e. 22.8+1.919 is more than that of pre-test +SD of the pre-test knowledge score i ,e 12.90+2.09.

Mean % in the post-test knowledge score i.e., 76% is more than the mean % of pre-test knowledge score i.e., 43%

Table no. 11: Paired T test of study subjects according to pre-test and post-test knowledge score.

Paired T Test	No. of respondents	Mean%	Range	Mean Diff.	Paired T Test	P value	Table Value at 0.05
PRETEST KNOWLEDGE	30	43.00	9-17	9.900	19.225 *Sig	<0.001	2.05
POSTTEST KNOWLEDGE	30	76.00	19-26				

INFERNCES: The above table shows that T value for overall knowledge score is 19.225 greater than table value at 0.05 which is 2.05.

Comparison between Mean and SD score of the study subjects in Pre-test and Post-test.

Figure no. 4: comparison between pre and post mean and SD scores

INFERENCES: The above figure shows that mean+SD score of the post -test knowledge score of the study subjects i.e., 22.8+1.919 is greater than mean +SD score of the pre-test knowledge i.e., 12.90+2.09.This shows that Computer Assisted Teaching Programme(CATP) was effective.

Table 12: Association between Pre-test Knowledge Score and selected demographic variables.

Association Of Pre-test Knowledge Scores Of With Selected Socio-Demographic Variables.									
Variables	**Opts**	**ADEQUATE**	**MODERATE**	**INADEQUATE**	**Chi Test**	**P Value**	**df**	**Table Value**	**Result**
AGE	15 years		0	3	1.380	0.710	3	7.815	Not Significant
	16 years		1	3					
	17 years		1	11					
	18 years		1	10					
MONTHLY INCOME	Below 20,000		0	12	5.000	0.082	2	5.991	Not Significant
	20000-50,000		1	11					
	50-1 lakh		2	4					
	Above 1 lakh		0	0					
EDUCATIONAL STAUS OF FATHER	Illiterate		0	12	5.000	0.082	2	5.991	Not Significant
	Matric		1	11					
	Graduate		2	4					
	Post Graduate		0	0					
EDUCATIONAL STAUS OF MOTHER	Illiterate		2	13	0.484	0.922	3	7.815	Not Significant
	Matric		1	12					
	Graduate		0	1					
	Post Graduate		0	1					
OCCUPATION OF FATHER	Unemployed		0	9	3.457	0.326	3	7.815	Not Significant
	Labour		1	8					
	Business		2	6					
	Govt./ Private job		0	4					
OCCUPATION OF MOTHER	Unemployed		2	21	2.303	0.316	2	5.991	Not Significant
	Labour		0	0					
	Business		0	4					
	Govt./ Private job		1	2					
SOURCE OF INFORMATION	Electronic media		2	21	0.186	0.666	1	3.841	Not Significant
	Print media		1	6					
	Professional programmes		0	0					
	Any other		0	0					

INFERENCES: The above table shows that there was no significant association between pre-test knowledge score and selected demographic variables (age, monthly income, educational status of father, educational status of mother, occupation of father, occupation of mother and source of information).

CONCLUSION

- The study concludes that computer assisted teaching programme (CATP) will be effective in improving the level of knowledge of the adolescent girls regarding anemia and its prevention as evident from their post-test knowledge score.

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