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A Study to Evaluate the Effectiveness of Video Assisted Teaching (VAT) on Iron and Folic Acid Supplementation among Adolescent Girls at Selected Rural School of Bhopal (M. P.)

Pratibha Singh Patel

M. Sc. Nursing, Chirayu College Of Nursing, Bhopal, Madhya Pradesh, India
ps363460[at]gmail.com

Abstract: ***Background: The global prevalence of anemia is estimated to be 30.2% in adolescent girls affecting their physical health, mental health, cognitive development. According to Ministry of Health and Family Welfare regular consumption of iron and folic acid supplementation along with a healthy and iron and folic rich diet is necessary for the prevention and reduction of iron and folic acid deficiency anemia in adolescence. Objectives: To assess the pre-test knowledge regarding iron and folic acid supplementation among adolescent girls at selected rural school. To evaluate the effectiveness of video assisted teaching on iron and folic acid supplementation by comparing pre and post-test knowledge scores among adolescent girls. To find out the association between pre-test knowledge scores on iron and folic acid supplementation among adolescent girls with their selected social demographic variables. Methodology: In this study, a quantitative research approach was adopted with one group pre-test and post-test research design.60 adolescent girls were selected through non probability convenient sampling technique at Deepmala Pragarani Sanskar Public Higher Secondary School Bhopal (M. P.). The data collected was analyzed using descriptive and inferential statistics. Results: Distribution of the adolescent girl's according to knowledge shows that 58.33% (35) of them had poor knowledge, 41.76% (25) had moderate knowledge and none of them had good knowledge. Mean percentage of knowledge in the pre-test was 36.96% with mean of 11.83 which was increased after the administration of VAT with mean percentage of knowledge score in the post-test by 86.5% with mean of 27.68. A very high significant difference ('t' = 3.86, p<0.001) was found between pre-test and post-test knowledge scores of the adolescent girl's.***

Keywords: Evaluate, effectiveness, video assisted teaching (VAT), iron and folic acid supplementation, adolescent girls.

1. Introduction

Anemia is the most common nutritional disorders across the global. According to WHO, in India the prevalence and incidence of anemia in adolescent girls is about 56%. As per WHO, providing weekly iron and folic acid supplementation (WIFS) is considered as a key factor to combat anemia. In 2012, India's ministry of health and family welfare launched the weekly iron and folic acid supplementation (WIFS) programme to prevent anemia in young girls. WIFS is an evidence based response to conquer anemia which includes weekly supervised ingestion of IFA (iron and folic acid supplementation) and bi annual helminthic control. These master plans are complemented by a complete communication programme to heighten the awareness and improve the knowledge of anemia.

A cross sectional study was conducted on prevalence of anemia and its associated risk factors among 257 adolescent girls of central Kerala in the year 2016. Reveals that prevalence of anemia was 21%. Risk factors associated with anemia in the univariate analysis were presence of ova or cyst in stool (p=0.003, OR=2.94) and number of pads per day during menstruation (p=0.004). Protective factors were hand washing after toileting (p=0.021, OR=0.311), hand washing before food intake (p=0.026, OR=0.5) and jiggery consumption (0.042). The factors which were significant in logistic regression were worm infestation, number of pads per day, washing hands before food intake.

2. Review of Literature

Abilash Sasidharannair Chandrakumari, et. al, 2019 conducted a cross sectional study to assess the prevalence of anemia among 255 adolescent girls in a rural area of Tamil Nadu, India. The results shows that the prevalence of anemia was found to be 48.63% (n=124). The majority of the anemic girls (55.64%, n=69) were having mild degree of anemia. Among 255 girls, 188 (73.73%) were from the early adolescent age group (10-14 years). Prevalence of anemia (52.24%) was high among the late adolescents and those belonging to low socioeconomic status. There was a significant relationship between anemia and socioeconomic status, dietary modification, nutritional supplementation, and helminth control; in addition, compliance with consumption of iron and folic acid tablets will prevent anemia to a great extent among adolescent girls.

P. M. Siva, et. al, 2016, conducted a cross sectional study on prevalence of anemia and its associated risk factors among 257 adolescent girls of central Kerala, The results shows that the prevalence of anemia was 21%. Risk factors associated with anemia in the univariate analysis were presence of ova or cyst in stool (p=0.003, OR=2.94) and number of pads per day during menstruation (p=0.004). Protective factors were hand washing after toileting (p=0.021, OR=0.311), hand washing before food intake (p=0.026, OR=0.5) and jiggery consumption (0.042). The factors which were significant in logistic regression were worm infestation, number of pads per day, washing hands before food intake.

Sant-Rayn Pasricha, et. al, 2009, conducted a study on baseline iron indices as predictors of haemoglobin improvement in anemic Vietnamese women receiving weekly iron-folic acid supplementation and deworming, iron deficiency anemia is highly prevalent among women living in rural Vietnam. The result shows that the anemia prevalence fell to 58/221 (26.2%), and the mean haemoglobin change was +3.5 g/l (95% confidence interval, 0.9, 6.6). a haemoglobin response was observed in 50/75 (66.6%) of anemic girls. A ferritin cut-off <30 ng/ml was a more sensitive predictor of response than ferritin <15ng/ml.

Problem Statement

A study to evaluate the effectiveness of video assisted teaching (VAT) on iron and folic acid supplementation among adolescent girls at selected rural school of Bhopal, M. P. ”

3. Objectives of the study

1) To assess the pre-test knowledge regarding iron and folic acid supplementation among adolescent girls at selected rural school.
2) To evaluate the effectiveness of video assisted teaching (VAT) on iron and folic acid supplementation by comparing pre-test and post-test knowledge scores among adolescent girls.
3) To find out the association between pre-test knowledge scores on iron and folic acid supplementation among adolescent girls with their selected social demographic variables.

4. Methodology

A quantitative research approach was adopted with one group pre-test and post-test research design.60 adolescent girls were selected through non probability convenient sampling technique at Deepmala Pragarani Sanskar Public Higher Secondary School Bhopal (M. P.). A self structured knowledge questionnaire was prepared to assess the demographic data and to evaluate the effectiveness of video assisted teaching on iron and folic acid supplementation among adolescent girls. The tool comprised of two sections – Section A and Section B.

Section A: Socio-demographic data

This section describes 10 socio-demographic variables like age in year, age of menarche, duration of menstruation cycle, flow of blood during menstruation, family income, and history of anemia, dietary pattern, have you got the iron and folic acid tablet through ASHA, have your parent brought iron and folic acid tablet in the home and source of information.

Section B: Self structured knowledge questionnaire

There were a total of 32 self structured knowledge questionnaire schedule to evaluate knowledge of adolescent girls in following areas:

1) Introduction of anemia:-3 questions
2) Cause of anemia:-2 questions
3) Identification of anemia:-2 questions
4) Home remedies for management of anemia:-11 questions
5) Iron and folic acid supplementation:-14 questions.

Score interpretation

There are total of 32 items. Each correct response carried weightage of 1 marks and wrong response carried 0 marks. The maximum score is 32.

S. No.	Knowledge level	Range	Percentage
1.	Good	22-32	76-100%
2.	Average	11-21	51-75%
3.	Poor	0-10	0-50%

Table 3.1-Criteria measure to assess the level of knowledge of adolescent girls about iron and folic acid supplementation.

Prior to commence the task of data collection, the investigator took a letter seeking permission to conduct the study from the Principal of Deepmala Pragarani Sanskar Higher Secondary Public School Bairagrah, Bhopal M. P. The study was conducted online through Google form and Zoom because of Covid-19 pandemic. Initially the investigator introduces herself to the all 60 adolescent girls through zoom app thereby established a good rapport and then explained the purpose of the study. The researcher access the whatsapp group formed by school authority for sending all the links and information. The pre-test data collection was done on 22/09/2020. With the help of Google form an online link of pre-test knowledge questionnaire was sent to each participant in the formed group. Thereafter, the video related to iron and folic acid supplementations, was played to each participant via zoom app and was told to ask any quarries related to video. The post-test was conducted on 29/09/2020 with the same self structured knowledge questionnaire with slighter re-arrangement of questions through formed mass media group. The data collection process was terminated by thanking the participants.

5. Result

Frequency and percentage wise distribution of socio demographic variables revealed that, majority of adolescent girls were 16 years of age i. e. about 66.66%, where as 16.66% were of 17 years age group. The age of menarche was observed that 66.67% adolescent girls had their menarche by the age of 10-11 years. The data related to duration of menstrual cycle, shows that same number teenage girls have experience of menstrual flow for 6-9 days and 9-12 days i. e.33.33% (20). It was recorded that maximum girls experience heavy flow which was about 83.33% (50). It was identified that 66.67% (40) adolescent girls were having a family income of Rs.2001-4000. It was observed that the majority of adolescent girls 83.33% (50) had previous history of anemia. It was quite evident that maximum teenagers 91.67% (55) were vegetarian. On enquiring whether they have got any IFA tablets from ASHA, only 3.33% (2) stated they received it. It was surprising to record that all the adolescent girls stated that their parents did not brought any IFA tablets as daily supplements for them. It was revealed that majority of adolescent girls 83.33% (50) had not received any information regarding iron and folic acid supplementation.

Table 12: Comparison of Knowledge Scores between Pre-Test and Post-Test by Frequency, Percentage and Total Score, N = 60

S. No.	Knowledge	Pre – test		Post – test	
		Frequency	Percentage	Frequency	Percentage
1.	Poor	35	58.33%	0	00%
2.	Average	25	41.67%	28	46.67%
3.	Good	0	00%	32	53.33%
Total		60	100%	60	100%

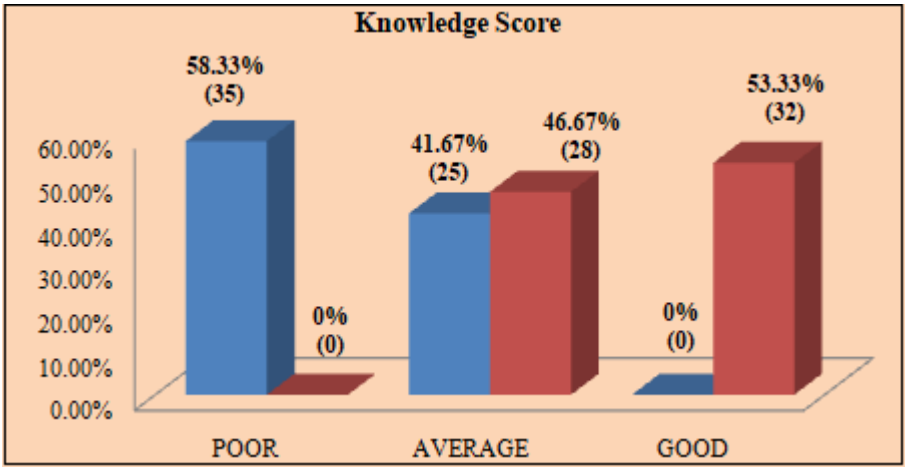

Figure 4.11: Bar Diagram showing distribution of subject according to Knowledge score

The above table 12 and figure 4.11 shows that comparison between pre-test and post-test knowledge scores of adolescent girls. The pre-test knowledge scores of adolescent girls regarding iron and folic acid supplementation reflected that 58.33% (35) participants have poor level of knowledge (0-10), which means they had no knowledge regarding iron and folic acid supplementation, while 41.67% (25) had average level of knowledge (11-21), whereas none of them had good level of knowledge (22-32). On contrary to pre-test score the post test score showed a varied difference in level of knowledge of adolescent girls after the administration of video assisted teaching (VAT).

It was statistically measured in post test that almost all teenagers were benefitted from by video assisted teaching (VAT) on iron and folic acid supplementation. It was detected in post-test that none of the participants had poor knowledge (0-10).

About 28 (46.67%) adolescent girls showed that they have gained some knowledge as they were measured average level (11-21).

Major proportion of participants 32 (53.33%) gain good knowledge (22-32) which reveals that the impact of video assisted teaching (VAT) was quite effective.

Table 13: Evaluation of Data Related to Effectiveness of Video Assisted Teaching on Knowledge Regarding Iron and Folic Acid Supplementation by Using Paired "t" Test, N = 60

S. No	Criteria (Knowledge)	Mean	Mean percentage	Mean difference	Standard deviation	Standard error	df	Paired "t" test value	P value
1.	Pre test	11.83	36.96%	15.85	31.75	4.10	59	3.86	0.0001
2.	Post test	27.68	86.5%						

P Value is 0.0001

The above table 13 shows that there was drastic surge in mean post-test mean 27.68 (86.5%) of adolescent girls as compared to the pre-test mean 11.83 (36.96%). The mean difference was 15.85, with the standard deviation of 31.75. The computed paired 't' test value was 3.86 at df 59 which is greater than the table value at level of 0.05 (2.00).

The video assisted teaching (VAT) is effective in improving the knowledge of adolescent girls regarding iron and folic acid supplementation.

Hence, H_1 is accepted

Analysis of Association between Pre Test Level of Knowledge Score Regarding Iron and Folic Acid Supplementation among Adolescent Girls with Their Selected Socio-Demographic Variables by using Chi-square "t" test

The calculated Chi-square value of socio-demographic variables of adolescent girls was less than the table value of chi-square at the level of 0.05 of corresponding to degree of freedom (df). The finding showed that there no association significant between pre-test knowledge score of iron and folic acid supplementation among adolescent girls with their selected socio-demographic variables.

6. Conclusion

Distribution of the adolescent girl's according to knowledge shows that 58.33% (35) of them had poor knowledge, 41.76% (25) had moderate knowledge and none of them had

good knowledge on iron and folic acid supplementation. Mean percentage of knowledge in the pre-test was 36.96% with mean of 11.83 which was increased after the administration of video assisted teaching (VAT) with mean percentage of knowledge score in the post-test by 86.5% with mean of 27.68. A very high significant difference (**'t' = 3.86,** $p<0.001$) was found between pre-test and post-test knowledge scores of the adolescent girl's regarding iron and folic acid supplementation.

The findings of the study proved that the adolescent girl's lacked the knowledge regarding iron and folic acid supplementation. The video assisted teaching (VAT) given by the investigator helped the adolescent girl's to improve their knowledge on iron and folic acid supplementation. The effectiveness of video assisted teaching (VAT) was tested in term of gain in knowledge and the findings showed that it was statistically significant at 0.05 level of significance. The findings of the study proved that video assisted teaching (VAT) is an effective strategy in improving the knowledge of the adolescent girls. All the participants had a gain in knowledge compared to their pre-test knowledge scores.

7. Future Scope

Nursing Practice

The result drawn from the study was of vital concern for nursing services, as it was found that there was inadequate knowledge among adolescent girls regarding iron and folic acid supplementation. Therefore the video assisted health education can be provided by the community health nurses to educate the community peoples regarding daily consumption of iron and folic acid and bring down the prevalence of anemia among adolescent girls.

Nursing Administration

The nurse administrator should conduct in-service education to disseminate the research findings through continuous nursing education to all nurses. And also conduct the conferences, workshop and symposium based on the management of iron deficiency anemia among the different age group of people in the community.

The administrator can formulate informational booklet & organize teaching programmes which can be very useful for the adolescent girls, to teach them about iron and folic acid supplementation among adolescent girls. Administrators have to ensure that the programme is implemented effectively in hospital. Administrator can appoint a counsellor to counsel the adolescent girls.

Nursing Education

The nurse educators can provide in-services education to nursing personnel to update their knowledge about nutritional intervention on iron deficiency anemia and its valuable benefits to the adolescent girls to improving their nutritional status.

Nursing Research

The findings may be utilized by the emerging researchers for their references purpose. This study helps to expand the scientific body of professional knowledge upon which further researches can be conducted.

The nurse researcher should work on ensure to adopt the healthy life style of adolescent girls as they are more prone to get iron deficiency anemia. Dissemination of findings through conferences, professional journals will make application of research findings to be effective.

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Author Profile

Mrs. Pratibha Singh Patel is a resident of Visakhapatnam (Andhra Pradesh), India. She didi M. Sc. Nursing, Chirayu College of Nursing, Bhopal, Madhya Pradesh, India