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"Effectiveness of Structured Teaching Programme on Knowledge Regarding Iron Deficiency Anemia Among Adolescent Girls In Higher Secondary School."

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Abstract–A *Quasi experimental study to assess the effectiveness of Structured teaching programme on knowledge regarding iron deficiency anemia among adolescent girls in Higher Secondary School.The sample consisting of 140 Senior Secondary School Students was selected by using simple random sampling. The tool comprised of structured self-administered questionnaire. The pretest was conducted and the structured teaching programme was administered. The post test was conducted after one week. The data obtained were analyzed by using descriptive and inferential statistics. The mean score of post-test knowledge 22.55 (62.63%) was apparently higher than the mean score of pre-test knowledge 13.85 (38.47%), suggesting that the structured teaching programme was effective in increasing the knowledge of the adolescent girls regarding iron deficiency anemia. The mean difference 8.7 between pre-test and post-test knowledge score of the adolescent girls was found to be significant.*

Keywords : *Iron deficiency anemia, adolescent girls in Higher Secondary School, one group pre – test post – test Quasi experimental study*

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I. Introduction

Anemia is one of the most common public health problem worldwide & especially in developing countries. Based on WHO criteria, more than two billion people globally & 149 million people in the eastern Mediterranean Region are estimate to be anemic. Most common type of nutritional anemia is iron deficiency anemia which is approximately responsible for 50% of all anemias. It seems that adolescent girls are also at increase risk of anemia due to period of rapid growth &developmental process of adolescent.

Iron deficiency causes approximately half of all anemia cases worldwide, and affects women more often than men. Iron-deficiency anemia affected 1.2 billion people in 2013.In 2013 anemia due to iron deficiency resulted in about 1,83,000 deaths – down from 2,13,000 deaths in 1990, in 2015 anemia affects the live of more than 2 billon people globally.

Adolescence is a phase separate from both early childhood and adulthood. It is a transitional period that requires special attention and protection. Physically children go through a number of transitions while they mature. We now know that the brain undergoes quite substantial developments in early adolescence, which affect emotional skills as well as physical and mental abilities.

According to the WHO, "Anemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status". The red blood cells (RBCs) constitute the most abundant component of human blood and are responsible for providing life-supporting oxygen to other cells of the body. Haemoglobin, a pigment present in red blood cells, binds oxygen and delivers it to various cells in the body. A lower number of RBCs, poor haemoglobin concentrations, or inability of haemoglobin to transport sufficient oxygen result in decreased oxygen transport to the body cells and subsequent physiological effects.

The amount of Iron absorbed by the body depends not only on the amount consumed through the diet, but also how much of that can be absorbed and assimilated within the body. Iron present in plant-based foods (non-haem iron) has lower absorbability than that present in animal foods such as red and organ meats (haem iron). Since loss of iron occurs through menstrual bleeding in women of reproductive age, iron needs are higher in women than in men.

A Study was conducted by **Asfia Hafiz et** al in the year **2015** on "Anemia Related Knowledge among Adolescent Girls" the study was undertaken on 100 adolescent junior college students of Hyderabad. A questionnaire has been developed to collect the demographic profile of the student, food habits of the student and food-frequency questionnaire (FFQ) was used. Most of the student were within the age range of 15-17yrs, living in nuclear family, having non vegetarian food habits and belong to middle income group. Most of the student were having faulty food habits; 60% of student eat out once a week followed by23% student eat out twice a week and most of them preferred to eat fast foods and carbonated beverages. Only 25% of the student was having good knowledge about anemia. The results show that the nutrition education intervention is required for the adolescent girls to create awareness and to disseminate the knowledge related to the prevention and control of anemia.

The iron deficiency anemia is the most common disease in the world wise, accounting for approximately over60% of population are now at risk from iron deficiency anemia .The knowledge of adolescent girls regarding iron deficiency anemia Therefore, the researchers were interested to take on the study.

II. Research Elaborations

Statement of problem –

" A study to assess the effectiveness of structured teaching programme on knowledge regarding iron deficiency anemia among adolescent girls in selected higher secondary school at Udaipur, Rajasthan".

III. Objectives

1. To assess the pretest knowledge score regarding iron deficiency anemia among adolescent girls
2. To develop and administer structured teaching programme regarding iron deficiency anemia among adolescent girls.
3. To assess the post test knowledge score regarding iron deficiency anemia among adolescent girls.
4. To determine the effectiveness of structured teaching programme regarding iron deficiency anemia among adolescent girls.
5. To find out the association between pre test knowledge score with selected socio- demographic variables.

IV. Hypothesis

H_1 - There will be a significant difference between the mean pretest and post test knowledge score.

H_2- There will be significant association between pretest knowledge score with selected socio- demographic variables.

V. Materials And Methods

Population – Higher Secondary School adolescent girls.

Sample – Higher Secondary School adolescent girls Studying in Udaipur

Sample size – Higher Secondary School adolescent girls.

Setting – Guru Nanak Senior Secondary School H.M. Sector-3 Udaipur and Rajasthan Bal Gurukul Senior Secondary School, sector 14, Udaipur, Rajasthan, India

The conceptual framework for the study was developed on the bases of Health Promotion Model.

VI. Research Design

The research design selected for the present study was a one group pre-test post-test research design

PRE-TEST **(Dependent variable)**	**TREATMENT** **(Independent variable)**	**POST –TEST** **(Dependent variable)**
O1	X	O2
Knowledge of Adolescent girls in Higher Secondary School	Structured teaching programme regarding iron deficiency anemia	Knowledge of Adolescent girls in Higher Secondary School

Table 1: Quasi Experimental One group pre and post-test research design

The interpretations of the symbol are as below:

O1 - Administration of pre-test knowledge questionnaire

O2 - Administration of post-test knowledge questionnaire

X - Intervention, treatment (independent variable)i.e. Structured teaching programme.

ETHICAL CONSIDERATION

After obtaining permission from research committee of Geetanjali College of Nursing, prior permission was obtained from principal of Guru Nanak Senior Secondary School, H.M. Sector-3, Udaipur (Raj.) and Rajasthan Gurukul Senior Secondary School, sector 14, Udaipur, Rajasthan, India.Consent was taken from each participant who had participated in the study.

DESCRIPTION OF THE TOOL

The structured knowledge questionnaire consisted of two parts i.e. Part – I & II.
Part - I: consisted of 8 items on socio- demographic data such as Age in year, Religion, Area of residence, Type of family, Source of information regarding iron deficiency anemia, Educational status, Stream.
Part - II: consisted of 36 knowledge items. Each item was multiple choices in nature with 4 choices.

SCORING

The knowledge of adolescent girls in Higher Secondary School regarding the outcomes of iron deficiency anemia was scored as follows, one mark for each correct answer and zero marks for incorrect answer. The maximum score was 36, to interpret level of knowledge the score was distributed as follows;
Interpretation of knowledge:

Level	**Range**
Inadequate knowledge	<50 %
Moderate knowledge	51-75 %
Adequate knowledge	>75 %

An answer key was prepared for scoring answer to the structured knowledge questionnaire.

DATA COLLECTION AND DATA ANALYSIS

The data was presented under the following sections
Section-I: Description of socio-demographic variables of the respondents.
Section-II: Distribution of Respondents according pre-test and post-test level of knowledge score.
Section-III: Effectiveness of structured teaching programme on knowledge of adolescent girls in Higher Secondary School on iron deficiency anemia.

VII. Results

Table 2: Frequency and Percentage distribution of respondents to their level of knowledge score

N=140

Level of Knowledge	**Score**	**Respondents**			
		Pre-test		**Post-test**	
		Frequency	**Percent (%)**	**Frequency**	**Percent (%)**
Inadequate knowledge	<50%	39	27.85	0	0
Moderately knowledge	51-75%	101	72.15	99	70.71
Adequate knowledge	>75%	00	00	41	29.29
Total		140	100	140	100

Table 2: The result showed that, in pre-test 72.15% of the respondents had moderate knowledge ,27.85% of the respondents had inadequate knowledge and none of respondents had adequate knowledgeand in post-test 70.71% of the respondents had adequate knowledge and 29.29% of the respondents had moderate adequate knowledge regarding iron deficiency anemia and none of the respondentshad an inadequate knowledge

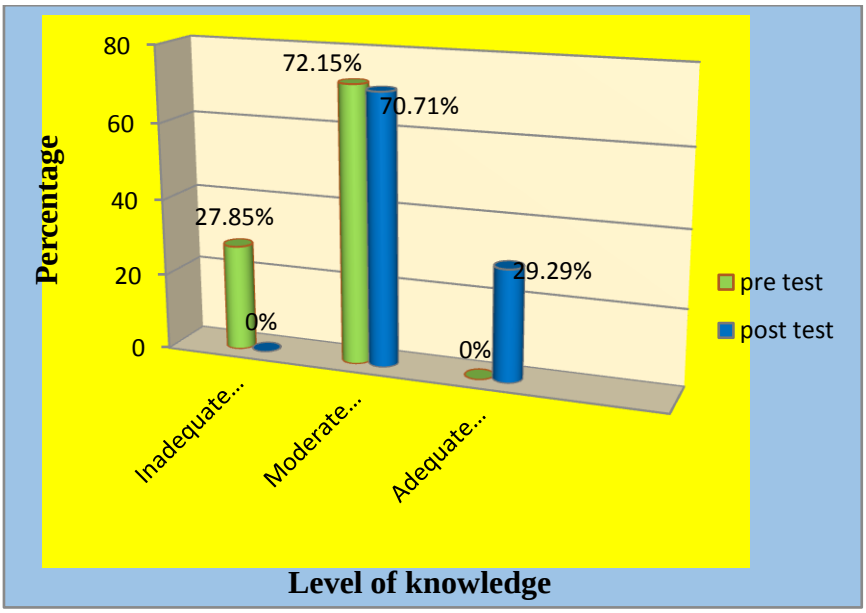

Figure 2: Frequency and Percentage distribution of respondents to their level of knowledge score

SECTION: III

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE OF ADOLESCENT GIRLS IN HIGHER SECONDARY SCHOOL ONIRON DEFICIENCY ANEMIA.

The paired "t" value was computed to determine the effectiveness of structured teaching programme on knowledge of adolescent girls in Higher Secondary School on iron deficiency anemia.
The following research hypothesis was stated

H_1 - There will be a significant difference between the mean pretest and post test knowledge score.

H_2- There will be significant association between pretest knowledge score with selected socio- demographic variables.

Table 3: Area wise pre-test and post-test knowledge scoreN= 150

Area of Knowledge	Max. Score	Pre-test			Post-test		
		Mean	Mean %	SD	Mean score	Mean %	SD
Introduction, function, production And degradation of blood	11	4.48	12.46	15.62	7.18	19.95	24.01
Risk factor, causes, sign and symptoms, types of anemia	8	2.84	7.90	11.36	4.72	13.11	18.69
Causes, sign and symptoms, diagnosis, treatment, disease that affect hemoglobin of iron deficiency anemia	11	4.09	11.35	13.66	6.78	18.81	22.32
Prevention of iron deficiency anemia	6	2.44	6.76	11.39	3.87	10.76	16.53

Table 3: The result showed that the mean, standard deviation and percentage of pre-test and post-test knowledge score on different areas of iron deficiency anemia.

In the area of the mean percentage obtained by the respondents is 12.46% with SD of 15.62 in the aspect of about Introduction, function, production and degradation of blood, 7.90% with SD 11.36 in the aspect of Introduction, risk factor, causes, sign and symptoms, types of anemia and mean percent obtained by the respondents is 11.35% with SD of 13.66 in the aspect of Introduction, causes, sign and symptoms, diagnosis, treatment, disease that affect hemoglobin of iron deficiency anemia, and the minimum mean percent obtained by the respondents is 6.76 with SD of 11.39 in the aspect of Prevention of iron deficiency anemia. The post test mean percentage obtained by the respondents is 19.91% with SD of 24.01 in the aspect of about Introduction, function, production and degradation of blood, 13.08% with SD 18.69 in the aspect of Introduction, risk factor, causes, sign and symptoms, types of anemia and mean percent obtained by the respondents is 18.8% with SD of 22.32 in the aspect of Introduction, causes, sign and symptoms, diagnosis, treatment, disease that affect

hemoglobin of iron deficiency anemia, and the minimum mean percent obtained by the respondents is 10.75% with SD of 16.53 in the aspect of Prevention of iron deficiency anemia . Therefore, the results confirmed that the structured teaching programme was highly effective in improving the knowledge of adolescent girls regarding iron deficiency anemia.

Table 4: Effectiveness of structured teaching programme on knowledge of adolescent girls in Higher Secondary School on iron deficiency anemia.

N=140

Knowledge Assessment	**Mean**	**Mean Difference**	**SD**	**Df**	**Paired "t" test**	**P Value**
Pre-test	13.85	8.7	2.58	139	43.6	0.05
Post-test	22.55		4.25			

Table **4**: The result showed that the mean post-test knowledge score (22.55) was higher than the mean pre-test score (13.85). The mean difference pre-test score (8.7) of knowledge was significant at 0.05 % level at the "t" = 43.6 * P<0.05. Hence research hypothesis H_1 was accepted. This indicates that the structured teaching programme was effective in increasing the knowledge of adolescent girls in Higher Secondary School on iron deficiency anemia.

VIII. Conclusion

The study aimed at testing the effectiveness of structured teaching programme on knowledge of adolescent girls regarding iron deficiency anemia.The result showed that the structured teaching programme was highly effective. The implications of this study emphasize on inclusion of structured teaching programme on iron deficiency anemia in the Higher Secondary School continuing education programs, so that the iron deficiency anemia can be prevented.

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