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ASSESS THE EFFECTIVENESS OF IEC PACKAGE ON KNOWLEDGE REGARDING ANEMIA AMONG ADOLESCENT GIRLS

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Abstract : 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. A study conducted to assess the effectiveness of IEC package on knowledge regarding anemia among adolescents girls in a selected school at Chennai. During the study, 6 adolescence girls were selected for them pretest is administered for assessing knowledge. After evaluation pretest score was showing lower knowledge regarding anemia then structured teaching program on knowledge regarding anemia administered . After one week post test conducted by using same questionnaire this time girls shows increased knowledge regarding anemia and they are following healthy food habits for the prevention of anemia. Results showing adolescent girls have adequate knowledge regarding anemia .Various methods are used for measuring the variables such as mean, mode, and standard deviation for significance of demographic variables. Chi square test were used and there is significant association between demographic variables. Objectives: 1.To assess the pre and post test knowledge regarding anemia among adolescent girls. 2.To assess the effectiveness of IEC package knowledge on anemia.3.To associate the post test level of knowledge with selected demographic variables. Methods: The pre-experimental research design was used in this study to assess the effectiveness of IEC package on knowledge regarding anemia among adolescent girls at selected school in Chennai. The sample comprised of 60 adolescents girls. Convenient sampling technique was used to collect the data from the adolescent girls. The tool used in this study was self-administered questionnaire which comprise of two parts, Section-A: deals with the demographical variables, Section – B: deals with the Assessment of knowledge regarding anemia. Results: The result showed that the pre-test mean score of knowledge regarding anemia among adolescent girls was 9.97 and post-test mean score was 20.50 The mean difference score was 10.53 and the mean difference percentage was 42.12%.The calculated paired 't' test value of 19.205 was found to be statistically significant at $p<0.001$ level. This shows that there was significant difference between the pre-test and post-test level of knowledge which clearly infers that teaching program. administered to adolescent girls was found to be effective in improving the level of knowledge in the post test. Conclusion: The study findings depict that there is a significant increase in the adequacy of knowledge after the teaching programme. All the adolescent girls had adequate knowledge regarding anemia. Hence the study concluded that teaching programme was effective and education regarding anemia among adolescent girls is very useful for promoting their health.

INTRODUCTION:

Anemia is a major problem throughout the world, in that iron deficiency anemia is one of the most commonest forms of anemia the prevalence of iron deficiency is higher in developing countries like india. WHO defines "ANEMIA is a condition in which the number of red blood cells or the hemoglobin concentration within them is lower than the normal. Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years. This is the formative period of life when the maximum amount of physical, psychological, and behavioral changes take place. This is a vulnerable period in the human life cycle for the development of nutritional anemia, which has been constantly neglected by public health programs. Girls are more likely to be a victim due to various reasons. In a family with limited resources, the female child is more likely to be neglected. She is deprived of good food and education, and is utilized as an extra working hand to carry out the household chores. The added burden of menstrual blood loss, normal or abnormal, precipitates the crises too often. This study was planned to highlight the problem of anemia in adolescent females and to study socio-demographic factors related to anemia. Anemia is defined as a condition in which the number of red blood cells (RBCs) and their oxygen-carrying capacity is insufficient to meet the body's physiologic needs. It is a condition when the normal number of RBCs (<4.2 million/µl) or hemoglobin (Hb) level <12 g/dl) in women and < 13 in men [1]. Globally, anemia is the most common and inflexible nutritional problem affecting around 2 billion of the world's population having major impact on human health and social and economic development; and more than 89% of this burden occurred in developing countries .Accounting half of all cases, iron deficiency anemia is the most common

cause of anemia. However, other conditions like nutritional deficiencies, acute and chronic inflammation, parasitic infections, growth spurt, increase in iron requirements, increased iron loss from the body during the menstruation, inherited or acquired disorders of hemoglobin synthesis, RBC production, or survival are also considered cause of anemia. Anemia can possibly occur at all stages of the life, it is more prevalent among pregnant women, young children, and adolescents. Since the overall iron requirement increases two- to three folds during adolescence due to high growth spurt and the loss of 12.5-15 mg iron each month, adolescent girls are vulnerable to anemia. Anemia during adolescence is nutritional problem and it has irreversible negative effects on growth and cognitive, work performance and serious impact throughout the reproductive years of life and beyond. Occurrence of pregnancy during adolescence with anemia increases not only the maternal morbidity and mortality but also the incidence of poor maternal birth outcomes such as still birth, low birth weight, and prematurity and also has negative impact on infant iron status .The impact of anemia among adolescent girls is still public health problem globally although there are specific actions like encouraging consumption of iron-rich foods through dietary change, nutritional education, treatment and prevention of parasitic infections, weekly iron supplementation to prevent iron-deficiency anemia, and improving iron status among adolescent girls. Different researchers have conducted studies on anemia among adolescent girls from different part of the world. However, the age range which these scholars considered as adolescent differs among the studies and they were not the standard age category between 10 and 19 years. Since using the finding of studies that use different age ranges can negatively affect the impact of interventions, we argue that the studies should be conducted by selecting the appropriate age group. Additionally, studies conducted on anemia among the adolescent girls in the country are not only few in number but also did not address these adolescents' living conditions and their knowledge on anemia prevention and food rich of iron and the effect that these variables have on anemia. In the current study, these factors were considered childhood.

Determining the prevalence of anemia and those factors associated with it among adolescent girls is crucial for initiation of effective intervention that improve their nutritional status to prevent occurrence of different risks during their adolescence, pregnancy, child birth, and beyond. Therefore, the aim of this study is to assess the prevalence of anemia and associated factors among school adolescent girls in rural areas.

BACKGROUND:

The studies have been done in the past that highlight the presence of anemia among adolescents girls. WHO- Anemia is widespread in India- 53.2% of non pregnant women and 50.4% of pregnant women were found to be anemic as per the NFHS. India carries the highest burden of the disease despite having an anemia control program for 50 years. Worldwide: Anemia is a setups global public health problem that particularly affects young children and pregnant women. WHO estimates that 42 percent of children less than 5 years of age and 40 percent of pregnant women worldwide are anemia. India: Prevalence of anemia among non-pregnant women (51% of women ages 15-49) in India was 51.50 as of 2016. Its highest value over the past 26 years was 55.60 in 1990, while its lowest value was 51.20 in 2013.28-Dec-2019.Tamilnadu: As per National Family Health Survey 4 (NFHS-4) in Tamil Nadu, prevalence of anemia among non-pregnant women and pregnant women were 55.4% and 44.4% respectively [8]. Similarly urban-rural differences were also found in the prevalence01-Mar-2019. Chennai Recently, a study conducted by Lister Metropolis has suggested that more than 37.46% children aged 0 to 20 years in Chennai are anemic. 06-Mar-2019.

NEED FOR THE STUDY:

In India anemia was mostly influenced by poverty, illiteracy, ignorance, and lack of knowledge regarding anemia men eat first and women last and poorly. This is increasing the burden of anemia can be prevented by consumption of iron content foods items. To improve the knowledge about prevention, diet and standard of living this will create vast impact on health. In developing country like India, anemia is the major health problem. Anemia is defined as a reduction in red cell mass or rather a decline in the number of red blood cells necessary for our blood to be able to carry oxygen to our tissues. Severe anemia can result in a stroke or a heart attack. S. Kavel PR, et al. (2006) conducted a study on prevalence of anemia, among adolescent girls. It reveals that the prevalence of anemia was found to be 59.8% in unvaried analysis, low socioeconomic status, low iron intake, vegetarian diet. History of worm infestation and history of excessive menstrual bleeding showed significant association with anemia. While multivariate logistic regression analysis suggested that strongest predictor of anemia was vegetarian diet followed by excessive menstrual bleeding, iron intake followed by history of worm infestation. However, age, education, socio economic status, BMI and status of menarche did not contribute significantly. As per district level health survey (DLHS) (2002-2004) prevalence of anemia among adolescent girls was very high (72.6%) in India, with prevalence of severe anemia among there much higher (21.1%) In adolescent girls, educational or economic status does not seen to make much of a difference in terms of prevalence of anemia Prevention, detection, or management of anemia in adolescent girls has till now not received much attention. Indian Scenario (2003) had reported that adolescents comprises nearly one fifth of the total population in the country (21.8%). Female adolescents' comprise 47% and male adolescents 53% of the total population. It was estimated that there were almost 2000 million adolescents in India, and in which 56% of girls were found to be anemic.

STATEMENTOFPROBLEM:

A study to assess the effectiveness of IEC package on knowledge regarding anemia among adolescent girls in selected community at Chennai.

OBJECTIVES:

1. To assess the pre and post test knowledge regarding anemia among adolescent girls.
2. To assess the effectiveness of IEC package knowledge on anemia.
3. To associate the post test level of knowledge with selected demographic variables.

OPERATIONAL DEFINITION:

ASSESS: It refers to evaluate the knowledge regarding anemia among adolescent girls.

EFFECTIVENESS: Refer to the IEC regarding anemia among adolescents which will evaluated by structural interview method.
INFORMATION: Information on meaning, types on anemia through flash cards.
EDUCATION: Education on signs and symptoms and diagnostic evaluation through video clippings.
COMMUNICATION: communication on exchange of new ideas on management of anemia using pamphlets.
KNOWLEDGE: refers to the level of understanding of adolescents regarding anemia.
ANEMIA: Refers adolescent's girls to hemoglobin level less than 12mg\dl will be considered as anemia.

ASSUMPTION:

- Adolescents may have some knowledge regarding anemia.
- Providing IEC package may improve their knowledge regarding anemia among adolescent girls.

HYPOTHESIS:
NH1: There is no significant difference between the pre test and post test level of knowledge of the adolescent on anemia at $p<0.05$.
NH2: there is no significant association between the mean improvement knowledge score with selected demographic variables at $p<0.05$.

DELIMITATIONS:
1. The samples are only 60
2. The period of study is only one week.

RESEARCH DESIGN
The research design adopted for this study was pre-experimental research design.

VARIABLES
RESEARCH VARIABLE
The research variable of this study was knowledge regarding anemia.

SETTING
The study setting was selected community schools Chennai.

POPULATION
TARGET POPULATION
The target population of this study includes all the adolescent girls between the age of 15-18 years**.**

ACCESSIBLE POPULATION
The accessible population of this study include the adolescent girls between the age of 15-18years in selected schools.

SAMPLE SIZE
The sample size consists of 60 adolescent girls between the age of15-18 years at selected schools chennai.

SAMPLING TECHNIQUE
Convenient sampling technique was adopted for this study.

SAMPLING CRITERIA
INCLUSION CRITERIA
Adolescent girls age between15-18 years who are willing to participate.

EXCLUSIVE CRITERIA
Those who are not able to understand Tamil or English.

DEVELOPMENT AND DESCRIPTION OF TOOL
SECTION A: ASSESSMENT OF DEMOGRAPHIC DATA

- Age
- Class of study
- Religion
- Family income
- Type of family

SECTION B: SELF STRUCTURED QUESTIONNAIRE FOR ASSESSING THE KNOWLEDGE OF ANEMIA
SCORING INTERPRETATION

0-8	Low knowledge
9-18	Moderate knowledge
19-25	High knowledge

CONTENT VALIDITY
The content validity obtained from the internal nursing experts. Their suggestions were includes in the study.

ETHICAL CONSIDERATION

The study was approved by the institutional ethics committee of ACS medical college and hospital . Informed consent was obtained from the participants explaining the purpose and benefit of the study.

RELIABILITY OF THE TOOL

The reliability of the tool was done by using **Re-test method**. The reliability value of the tool was 0 – 1**(0.95)**. This indicates the tool is highly reliable to assess the knowledge regarding anemia among adolescent girls at selected schools, chennai

PILOT STUDY

Pilot study was conducted for a period of 1 week. Total 6samples were selected by using convenient sampling. Informed consent was obtained from the participants. Knowledge on anemia among adolescent girls were assessed using self structured questionnaire on anemia. After completion, the pilot study result showed the tool was reliable for conducting the main study.

METHOD OF DATA COLLECTION

[1] The study was conducted after formal permission of the participants and school authority
[2] The study participants were selected by using CONVENIENT sampling
[3] The purpose and need for the study will be explained and informed consent was obtained from the participants
[4] Data will be collected using SELF STRUCTURED QUESTIONNAIRE ON ANEMIA

PLAN FOR DATA ANALYSIS

DESCRIPTIVE STATISTICS

Fig. 1. Frequency and percentage distribution will be used to analyse the demographic variables.
Fig. 2. Mean and standard deviation will be used to examine the knowledge on Anemia.

Table 1: Frequency and percentage distribution of demographic variables of adolescents girls.

N= 60

Demographic Variables	Frequency	Percentage
Age (Years)		
17	30	50.0
18	30	50.0
Class of study		
10^{th}std	-	-
11^{th}std	30	50.0
12^{th}std	30	50.0
Religion		
Hindu	25	41.7
Christian	24	40.0
Muslim	11	18.3
Others	-	-
Family income		
<10,000	4	6.7
11,000 – 20,000	25	41.6
21,000 – 30,000	27	45.0
>30,000	4	6.7
Family type		
Nuclear family	41	68.3
Joint family	19	31.7

The above table shows that most of the adolescent girls, 30(50%) were aged 17 and 18 years and were studying 11^{th} and 12^{th} standard respectively, 25(41.7%) were Hindus, 27(45%) had family income of Rs.21,000 – 30,000 and 41(68.3%) belonged to nuclear family.

Table 2: Frequency and percentage distribution of level of knowledge regarding anemia among adolescent girls.

N = 60

Level of Knowledge	Pretest		Post Test	
	Frequency	Percentage	Frequency	Percentage
Inadequate (<50%)	45	75.0	-	-
Moderate (50 – 75%)	15	25.0	12	20.0
Adequate (>75%)	-	-	48	80.0

The above table shows that in the pretest, 45(75%) had inadequate knowledge and 15(25%) had moderate knowledge whereas in the post test, 48(80%) had adequate knowledge and 12(20%) had moderate knowledge regarding anemia among adolescent girls.

Table 3: Effectiveness of IEC package on knowledge regarding anemia among adolescent girls.

N = 60

Knowledge	Mean	S.D	Mean Difference & %	Paired 't' test value
Pretest	9.97	3.44	10.53 (42.12%)	**t=19.205 p=0.0001, S*** **
Post Test	20.50	2.47		

***p<0.001, S - Significant

The above table depicts that the pretest mean score of knowledge was 9.97±3.44 and the post test mean score of knowledge was 20.50±2.47. The mean difference score was 10.53 and the mean difference percentage was 42.12%. The calculated paired 't' test value of t = 19.205 was found to be statistically significant at p<0.001 level which clearly infers that the administration of IEC on knowledge regarding anemia among adolescent girls was found to be effective in improving the level of knowledge among the adolescent girls in the post test.

Table 4: Association of level of knowledge regarding anemia among adolescent girls with demographic variables.

N= 60

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square Value
	No.	%	No.	%	No.	%	
Age (Years)							χ^2=0.417 d.f=1 p = 0.519 N.S
17	-	-	7	11.7	23	38.3	
18	-	-	5	8.3	25	41.7	
Class of study							χ^2=0.417 d.f=1 p = 0.519 N.S
10thstd	-	-	-	-	-	-	
11thstd	-	-	5	8.3	25	41.7	
12thstd	-	-	7	11.7	23	38.3	
Religion							χ^2=1.457 d.f=2 p = 0.483 N.S
Hindu	-	-	6	10.0	19	31.7	
Christian	-	-	3	5.0	21	35.0	
Muslim	-	-	3	5.0	8	13.3	
Others	-	-	-	-	-	-	
Family income							χ^2=1.146 d.f=3 p = 0.766 N.S
<10,000	-	-	0	0	4	6.7	
11,000 – 20,000	-	-	5	8.3	20	33.3	
21,000 – 30,000	-	-	6	10.0	21	35.0	
>30,000	-	-	1	1.7	3	5.0	
Family type							**χ^2=4.929 d.f=1 p = 0.026 S***
Nuclear family	-	-	5	8.3	36	60.0	
Joint family	-	-	7	11.7	12	20.0	

*p<0.05, S – Significant, N.S – Not Significant

The above table shows that the demographic variable family type **(χ^2=4.929, p=0.026)** had shown statistically significant association with level of knowledge regarding anemia among adolescent girls and the other demographic variables had not shown statistically significant association with level of knowledge regarding anemia among adolescent girls.

DISSCUSSION

This study was conducted to assess the knowledge level regarding anemia among adolescent girls. Descriptive study was adopted 60 adolescent girls were included in the study .Knowledge questionnaire prepared by the investigator was used to assess the knowledge about anemia among adolescent girls .The collected data was analyzed using descriptive and inferential statistics.

1. To assess the pre and Post test knowledge regarding anemia among adolescent girls.
   - The first objective shows that in the pretest,45(75%) had inadequate knowledge and 15(25%) had moderate knowledge where's in the post test, 48(80%) had adequate knowledge and 12(20%)had moderate knowledge regarding anemia among adolescent girls.
2. The second objective of the study is to assess the effectiveness of IEC package knowledge on anemia.
   - The second objective shows that the pretest mean score of knowledge was 9.97±3.44 and the post test mean score of knowledge was 20.50±2.47. the mean difference score was 10.53 and the mean difference percentage was 42.12%. the calculated paired 't' test value of t=19.205 was found to be statistically significant at p<0.001level which clearly infers that the administration of IEC on knowledge regarding anemia among adolescent girls was found to be effective in improving the level of knowledge among the adolescents girls in the post test.
3. The third objective study is to associate the post test level of knowledge with selected demographic variables.
   - The third objectives showsthat Demographic variable family type had showed statistically significant association between anemia with selected demographic variable at p<0.05 level (X2 = 4.929 , d.f = 1, p = 0.026).

CONCLUSION:
The study reveals that the pretest, 45(75%) had inadequate knowledge and 15(25%) had moderate knowledge whereas in the post test, 48(80%) had adequate knowledge and 12(20%) had moderate knowledge regarding anemia among adolescent girls.

NURSING IMPLICATION:

- The finding of the study has implications of various areas of nursing practices, nursing education, nursing administration and nursing research.

NURSING PRACTICE:

- The nurse practitioner is a key person to provide interventions to overcome from the inadequate knowledge regarding anemia.
- An implication for the nursing practice is derived from the study is that occurrence of poor handling of delivery, poor antenatal care of the mother, poor health status of the children and preventing the factors associated with it can prevent for anemia and its prevalence. Therefore, nurse must receive adequate a preparation and training on various practices optimum that would help them to impart knowledge of the adolescent girls.

NURSING EDUCATION:

- Finding of the present study have an implication of nursing education.
- The nurse educator can train the students in developing the knowledge regarding anemia.
- Educators can encourage the nurse to bring about innovative and creative ideas pertaining to the effective management of anemia.

NURSINGADMINISTRATION:

- Nursing administrators can formulate policies which will include all nursing staff to be actively involved in health education programmes. The school health nurse administrator should initiate to carry you periodic survey on prevalence of anemia (HB estimation) among the adolescent girls to take corrective or Preventive measures by deworming and supplying iron and folic acid tablets and insisting to take iron rich foods.
- Nursing administrator ensures that appropriate and current information is provided to the Nurses so that they are capable of educating the adolescent girls regarding prevention of anemia.

NURSING RESEARCH:

- Findings can be used to plan further research in this area.
- The present study is an attempt to assess the knowledge regarding anemia among adolescents girls.
- On importance of developing knowledge regarding anemia among adolescents girls.
- The result of the study will encourage the adolescents girls to build a knowledge regarding anemia.

LIMITATIONS:

- The study is limited to adolescents girls in selected schools, Chennai.
- The adolescent girls who can know English.
- The study was limited to 60adolescent girls.
- Data collection period was limited to 10 days.
- Only those who are willing to participate in the study.

RECOMMENDATION:
This study recommends the following further research

- Similar study can be conducted among different schools settings.
- A similar study can be done among different populations in different settings.
- The Similar study can be conducted in other parts of the country with a large sample.

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