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A Study to Assess the Effectiveness of Structured Teaching Programme (STP) on Knowledge Regarding Prevention of Iron Deficiency Anaemia Among Antenatal Mothers of Selected Rural Area, Gulbarga

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Abstract

Anemia is defined as decrease in Hb levels to below the normal range of 13.5 gm/dl (men), 11.5 gm/dl (women), and 11.0 gm/dl (children and pregnant women). Very severe anemia is defined as an Hb level <4 gm/dl in pregnant women; this is a medical emergency. Women's health is central to the survival of the society. They are pivot of the family, the nurtures of the next generation and care givers for elderly. To assess the knowledge of antenatal mothers regarding prevention of Iron deficiency anaemia before administering the structured teaching programme. Objectives of the study were To evaluate the effectiveness of structured teaching programme on prevention of Iron deficiency anaemia among antenatal mothers.To associate the pre-test knowledge of antenatal mothers with selected socio demographic variables and **$H0_1$:** There will be significant difference between pre-test and post-test knowledge scores among antenatal mothers **$H0_2$:**There will be significant association between scores with selected demographic variables. Effectiveness of STP = O_2 - O_1, **O_1:** Pre-test Knowledge scores regarding prevention of iron deficiency anaemia , **O_2:** Post-test Knowledge scores regarding prevention of iron deficiency anaemia & **X:** Structured teaching programme on prevention of iron deficiency anaemia . As for the overall pre-test knowledge scores is concerned, out of maximum score 40 it ranges from 14-29. The median score is 20 and the mean ± SD is 21.26 ± 4.21.

Further, overall post-test knowledge score is concerned, out of a maximum score 40, this is ranging from 23-40, where as the median is 31 and the mean ± SD is 31.73 ± 3.93.

Discussion: The present study confirms that the overall knowledge levels of antenatal mothers was significantly low in the pre-test with the overall mean pre-test knowledge scores of 53.15% when compared to the mean post test knowledge scores of 79.32% .

The study findings are consistent with the study findings of Donna sym who conducted a study on "Prevention & treatment modality of swine influenza" which included 2 stages. Stage 1 was applied to determine the knowledge of school students about using safety techniques to prevent swine influenza. Stage 2 consists of observation of all students for 5 days and interventions students used for the prevention and treatment modalities of swine influenza. They concluded that students' knowledge regarding Prevention & treatment modality of swine influenza is comparatively low.

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Introduction

Anemia is a ice berg disease commonly seen in pregnant women, children, adolescent and old age. Anaemia is the commonest haematological disorder that may occur in pregnancy .According to the standard laid down by World Health Organisation, anaemia in pregnancy is when the haemoglobin concentration in the peripheral blood is 11gm per100ml or less.[1]

Anemia is defined as decrease in Hb levels to below the normal range of 13.5 gm/dl (men), 11.5 gm/dl (women), and 11.0 gm/dl (children and pregnant women). Very severe anemia is defined as an Hb level <4 gm/dl in pregnant women; this is a medical emergency due to the risk of congestive heart failure and maternal death (World Health Organization).[2]

According to World Health Organization, the prevalence of anemia in developing countries among pregnant women averages 56% ranging between 35-100%, in the year 2009 among different regions of the world. Various studies from different regions of the country have reported the prevalence of anemia to be between 33-100%.

Need for the Study

Women's health is central to the survival of the society. They are pivot of the family, the nurtures of the next generation and care givers for elderly. Apart from their familiar duties, women are first and fore most free human beings who have a primary responsibilities towards their own health and happiness. Women's lives have to be seen as continuum and culmination.

The different stages of their lives segue into each others seamlessly and one such stage is pregnancy which is a special event in women's life and joyful anticipation. But sometimes it can be a time of fear of suffering and death in case women begins pregnancy with low or absent stores of iron because of heavy menstrual period, a previous pregnancy, poor iron intake , substance abuse and increase fetal demands of iron leads to iron deficiency anemia.

Objectives of the Study

1. To assess the knowledge of antenatal mothers regarding prevention of Iron deficiency anaemia before administering the structured teaching programme.
2. To evaluate the effectiveness of structured teaching programme on prevention of Iron deficiency anaemia among antenatal mothers.
3. To associate the pre-test knowledge of antenatal mothers with selected socio demographic variables.

Hypothesis

H01: There will be significant difference between pre-test and post-test knowledge scores among antenatal mothers

H02: There will be significant association between scores with selected demographic variables.

Assumptions

1. The antenatal mothers may have some knowledge
2. There will be association between the knowledge with selected demographic variables among antenatal mothers.
3. Knowledge on prevention and management of Iron deficiency anaemia among antenatal mothers is measurable.
4. Antenatal mothers knowledge can be enhanced through structured teaching Programme.
5. Structured teaching programme about prevention and management of Iron deficiency anaemia may help antenatal mothers to update their knowledge

Table 1: Description of the research design

Group	Pre-test	Treatment	Post-test
Antenatal mothers aged between 20 – 35 years in selected rural area of Gulbarga	Day–I: Assessment of knowledge by using structured questionnaire regarding prevention of Iron deficiency anaemia.	Day-I: Conducting structured teaching programme on prevention of Iron deficiency anaemia.	After 8 days of STP knowledge of antenatal mothers is assessed by using same structured questionnaire.
	O1	X	O2

Effectiveness of STP = O2 - O1

- O1: Pre-test Knowledge scores regarding prevention of iron deficiency anaemia .
- O2: Post-test Knowledge scores regarding prevention of iron deficiency anaemia .
- X: Structured teaching programme on prevention of iron deficiency anaemia .

1. **Setting of the Study:** The study was conducted in selected rural area of Gulbarga.

i. **Population:** In this study the population consisted of antenatal mothers who are visiting the antenatal clinics at the age group of 20- 35years.

ii. **Sample size and Sampling Technique:** The sample size consists of 60 (sixty) antenatal mothers in in selected rural area of Gulbarga. Convenient sampling technique was considered appropriate for the study.

2. **Tool of Research:** Based on the objectives of the study, a structured questionnaire was prepared in order to assess the knowledge of antenatal mothers in selected antenatal clinics on prevention of iron deficiency anaemia .

a. Description of the Tool

The structured knowledge questionnaire comprised of two parts.

- **Part I:** Consists of 10 items related to the socio-demographic variables under the study such as Age, Educational status, Religion, Occupation, Income, Availability of health services, Gravida, Type of diet, Socio-economic status and Residing area.
- **Part II:** Consists of 25 items which is designed to elicit information regarding prevention of iron deficiency anaemia .

b. Scoring of the Items

- There were 25 items. Each item has four options with one accurate answer. The score for correct response to each item was "one" and incorrect response was "zero". Thus for 25 items maximum obtainable score was 25 and minimum score was zero.
- To find out the association with the selected demographic variables and knowledge scores, respondents are categorized into three groups.
- Below 50% - Inadequate knowledge
- 51-75% - Moderate knowledge
- Above 75% - Adequate knowlede

Table 2: Distribution of respondents according to demographic variables.

Demographic variables	Responses	Overall pretest Knowledge			
		Median and below Frequency	Above median Frequency	Chi square & Inference	α-Value
Age in years	<25years	16	15	0.000^{NS}	0.993
	26-30years	15	14	df= 1	
Education	No formal education	11	8	1.689^{NS}	0.430
	Primary education	7	11	df=2	
	Secondary education	13	10		
Religion	Hindu	24	22	0.020^{NS}	0.887
	Christian	7	7	df=1	
Occupation	Private	14	10	0.712^{NS}	0.399
	House wife	17	19	df= 1	
Income	<10,000	17	20	1.265^{NS}	0.261
	11,000-20,000	14	9	df=1	
Availability of health services	Government	11	12	0.772^{NS}	0.680
	Private	13	9	df=2	
	Both	7	8		
Gravida	Primi	15	12	0.297^{NS}	0.586
	Multi	16	17	df=1	
Type of diet	Vegetarian	16	9	2.611^{NS}	0.106
	Mixed	15	20	df=1	
Residence area	Urban	16	13	0.276^{NS}	0.599
	Rural	15	16	df = 1	

* is significant; NS is not significant; FEP = Fisher's Exact Probability

Association between knowledge levels with demographic variables.

Table 18: Analysis of association between selected demographic variables and over all Pre-test knowledge scores N=60

Table 3: Analysis of association between selected demographic variables and over all post-test knowledge scores N=60

Demographic variables	Responses	Overall post-test Knowledge			
		Median and below	Above median	Chi square & Inference	α-Value
		Frequency	Frequency		
Age in years	<25years	18	13	0.243^{NS}	0.622
	26-30years	15	14	df= 1	
Education	No formal education	12	7	0.767^{NS}	0.681
	Primary education	9	9	df=2	
	Secondary education	12	11		
Religion	Hindu	26	20	0.184^{NS}	0.668
	Christian	7	7	df=1	
Occupation	Private	14	10	0.180^{NS}	0.672
	House wife	19	17	df= 1	
Income	<10,000	19	18	0.519^{NS}	0.471
	11,000-20,000	14	9	df=1	
Availability of health services	Government	13	10	0.591^{NS}	0.744
	Private	13	9	df=2	
	Both	7	8		
Gravida	Primi	15	12	0.006^{NS}	0.938
	Multi	18	15	df=1	
Type of diet	Vegetarian	15	10	0.433^{NS}	0.511
	Mixed	18	17	df=1	
Residence area	Urban	17	12	0.297^{NS}	0.586
	Rural	16	15	df= 1	

* is significant; ^{NS} is not significant; FEP = Fisher's Exact Probability

Component wise distribution of scores during the pre-test and post-test.

Table 4: Descriptive statistics of age, overall knowledge score of pre and post test scores.

	Range	Median	Mean	SD
Age (yrs)	20-35	24.5	25.18	3.92
Overall pre-test knowledge score	14-29	20	21.26	4.21
Overall post-test knowledge score	24-39	31	31.73	3.93

It may be noticed from this study table 12 that the mean ± SD of age is 25.18 ± 3.92 years, which ranges from 20-35years. The median age is 24.5 years.

As for the overall pre-test knowledge scores is concerned, out of maximum score 40 it ranges from 14-29. The median score is 20 and the mean ± SD is 21.26 ± 4.21.

Further, overall post-test knowledge score is concerned, out of a maximum score 40, this is ranging from 23-40, where as the median is 31 and the mean ± SD is 31.73 ± 3.93.

Testing of the hypothesis.

H01: There will be significant difference between pre-test and post-test knowledge scores among antenatal mothers

The Research hypothesis H1 stated in the study is accepted since there is significant change found between

the pre-test and post-test knowledge scores on prevention of iron deficiency anaemia among antenatal mothers at P <0.05 level (5%). Hence, the stated Research hypothesis H1 is accepted since there is a significant improvement in knowledge scores of antenatal mothers after administration of the structured teaching programme.

H02: There will be significant association between scores with selected demographic variables.

The Research hypothesis H2 stated in the study is rejected since there is no significant association between knowledge scores with selected demographic variables at P <0.05 level (5%).

Discussion

The present study confirms that the overall knowledge levels of antenatal mothers was significantly low in the pre-test with the overall mean pre-test knowledge scores of 53.15% when compared to the mean post test knowledge scores of 79.32% .

The study findings are consistent with the study findings of Donna sym who conducted a study on "Prevention & treatment modality of swine influenza" which included 2 stages. Stage 1 was applied to determine the knowledge of school students about using safety techniques to prevent swine influenza. Stage 2 consists of observation of all students for 5 days and interventions students used for the prevention and treatment modalities of swine influenza. They concluded that students' knowledge regarding Prevention & treatment modality of swine influenza is comparatively low.

Recommendations

On the basis of the findings of the study following recommendations have been made:

- A similar study may be replicated on a large sample to generalize the findings.
- An experimental study may be undertaken with a control group for effective comparison of the result.
- A study may be conducted by including additional demographic variables.
- A comparative study may be conducted between rural and urban settings or between rich and poor socioeconomic status people.
- Manuals, information booklets and self-instruction module may be developed in areas of iron deficiency anaemia and its preventive strategies.
- A study may be carried out to evaluate the efficiency of various teaching strategies like SIM, pamphlets, leaflets and computer-assisted instruction on iron deficiency anaemia.

Ethical Clearance: obtained from concerned authority

Conflict of Interest: None

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