International Journal of Nursing and Health Research
www.nursingjournal.in
Online ISSN: 2664-6420, Print ISSN: 2664-6412
Received: 19-01-2025, Accepted: 20-02-2025, Published: 07-03-2025
Volume 7, Issue 1, 2025, Page No. 50-53

Effect of advanced teaching program on knowledge regarding iron and folic acid deficiency among peoples residing in rural area of Indore

Urmila Katru[1], Dr. Prabhanshu Vyas[2]
[1] Department of Community Health Nursing, Malwanchal University, Indore, Madhya Pradesh, India
[2] Research Supervisor, Department of Community Health Nursing, Malwanchal University, Indore, Madhya Pradesh, India

Abstract
The present study has been undertaken to assess knowledge score regarding iron and folic acid deficiency among peoples by advanced teaching program in Khudel at Indore. The research design adopted for the study was pre- experimental in nature. The tool for the study was self-structured knowledge questionnaire which consists of two parts-PART- I consisted questions related to Socio-demographic data; PART-II consisted of self -structured knowledge questionnaire to assess the knowledge score regarding iron and folic acid deficiency among peoples residing in rural area. The data was analyzed by using descriptive and inferential statistical methods. The most significant finding was that 63.3% of peoples residing in rural area were having average knowledge regarding iron and folic acid deficiency whereas 36.7% had good knowledge after post-test. It was suggested that the nurses must educate peoples residing in rural area regarding iron and folic acid deficiency.

Keywords: Effect, advanced teaching program, knowledge and iron and folic acid deficiency.

Introduction

Iron deficiency during pregnancy is a global public health issue, with substantial adverse effects on both maternal and fetal health. Iron plays an essential role in hemoglobin production and oxygen transport in the blood. During pregnancy, a woman's blood volume increases by 50%, placing an increased demand on iron stores. If the demand is not met through diet or supplementation, it leads to iron deficiency anemia (IDA), which can cause fatigue, weakness, and increased susceptibility to infections. Moreover, IDA has been associated with poor pregnancy outcomes, including preterm birth, low birth weight, and maternal and infant mortality (WHO, 2016).

Research has shown that the prevalence of iron deficiency anemia among pregnant women can be as high as 50% in certain regions, particularly in developing countries. Nutritional factors, cultural dietary practices, and socioeconomic status contribute to the widespread prevalence of iron deficiency. Although iron supplementation is a standard practice in many countries, adherence to these supplements is often suboptimal due to side effects such as nausea, constipation, and the cost of supplements.

Need for study

Prevalence of Iron Deficiency in Madhya Pradesh

Madhya Pradesh has one of the highest rates of anemia among pregnant women in India. According to the National Family Health Survey (NFHS-5) conducted in 2019-2021, 57.6% of pregnant women in Madhya Pradesh were found to be anemic, a rate significantly higher than the national average of 50% (NFHS-5, 2019-2021). A study by Kotecha et al. (2014) indicates that over 60% of pregnant women in Madhya Pradesh are affected by iron deficiency anemia (IDA).

The state's high prevalence of IDA is attributed to various factors, including low dietary intake of iron-rich foods, poor absorption of iron due to infections like hookworm, and limited access to iron supplementation programs. Nutritional deficiencies in rural households are exacerbated by poverty, lack of awareness about healthy diets, and traditional eating habits. Additionally, the prevalence of parasitic infections, which hinder iron absorption, is a major contributing factor in many rural areas (Barman et al., 2020).

Objective of the study

1. To assess the pre-test and post-test Knowledge score regarding iron and folic acid deficiency among peoples residing in rural area.
2. To assess the effectiveness of advanced teaching program on knowledge regarding iron and folic acid deficiency among peoples residing in rural area.
3. To find out the association between the pre-test knowledge score regarding iron and folic acid deficiency among peoples residing in rural area with their selected demographic variables.

Hypotheses

RH_0: There will be no significant difference between pretest and post-test knowledge score on iron and folic acid deficiency among peoples residing in rural area.

RH_1: There will be significant difference between pretest and post-test knowledge score on iron and folic acid deficiency among peoples residing in rural area.

RH_2: There will be significant association between the pre-test score on iron and folic acid deficiency among peoples residing in rural area with their selected demographic variables.

Assumption

1. Peoples residing in rural area may have deficit knowledge regarding iron and folic acid deficiency.
2. Advanced teaching program will improve knowledge of peoples residing in rural area regarding iron and folic acid deficiency.

Methodology

An evaluative approach was used and research design pre-experimental one group pre-test post-test research design was used for the study. The samples consisted of 30 peoples residing in rural area selected by Non probability convenient sampling technique. The setting for the study was Khudel at Indore. Data was collected with the help of demographic variables and administering a self-structured knowledge questionnaire by the investigator before and after advanced teaching program. Post-test was conducted after 7 days of pretest. Data were analysis using descriptive & inferential statistics.

Analysis and interpretation

Section-I

Table 1: Frequency and percentage distribution of samples according to their demographic variables. n = 30

S. No	Demographic Variables	Frequency	Percentage
1	**Age in Years**		
a.	21-25	7	23.3
b.	26-30	9	30.0
c.	31-35	8	26.7
d.	≥35	6	20.0
2	**Family Monthly income**		
a.	<10000/-	3	10.0
b.	10001-15000/-	13	43.3
c.	15001-20000/-	10	33.3
d.	>20000/-	4	13.3
3	**Marital status**		
a.	Married	17	56.7
b	Single	9	30.0
c	Widow	2	6.7
d.	Divorce	2	6.7
4	**Occupation**		
a.	Street vendor	3	10.0
b.	Laborer	15	50.0
c.	Shopkeeper	7	23.3
d.	Office worker	5	16.7

Section II

Table 2: Frequency and percentage distribution of Pre-test scores of studied subjects

Category and test Score	Frequency (N=30)	Frequency Percentage (%)
Poor (1-10)	20	66.7
Average (11-20)	10	33.3
Good (21-30)	0	0.0
Total	30	100.0

The present table 2 concerned with the existing knowledge regarding iron and folic acid deficiency among peoples residing in rural area was shown by pre-test score and it is observed that most of the peoples residing in rural area 20 (66.7%) were poor (1-10) knowledge and some peoples residing in rural area have 10 (33.3%) average categories.

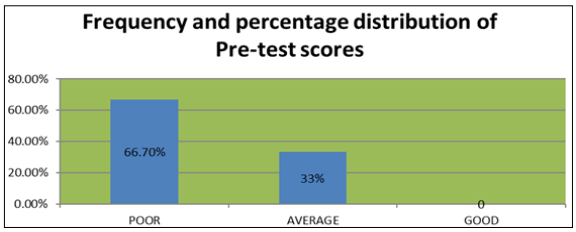

Fig 1: Frequency and percentage distribution of Pre-test scores of studied subjects

Table 3: Mean ($\bar{X}$) and standard Deviation (s) of knowledge scores:

Knowledge Pre –test	Mean ($\bar{X}$)	Std Dev (S)
Pre-test score	8.50	1.94

The information regarding mean, percentage of mean and standard deviation of test scores in shown in table 3 knowledge in mean pre-test score was 8.50 ± 1.94 while in knowledge regarding iron and folic acid deficiency among peoples residing in Khudel at Indore.

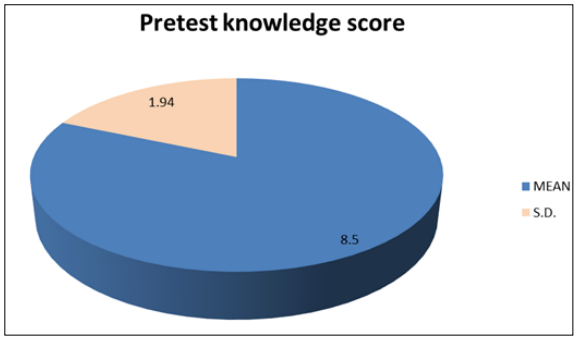

Fig 2: Mean ($\bar{X}$) and standard Deviation (s) of knowledge scores

Table 4: Frequency and percentage distribution of Post test scores of studied subjects

Category and post-test Score	Frequency (N=30)	Frequency Percentage (%)
Poor (1-10)	0	0.0
Average (11-20)	19	63.3
Good (21-30)	11	36.7
Total	30	100%

The present table 4 concerned with the existing knowledge regarding iron and folic acid deficiency among peoples residing in rural area was shown by post test score and it is observed that peoples residing in rural area 11 (36.7%) were GOOD (21-30) knowledge and other peoples residing in rural area have 19 (63.3%) category which are AVERAGE (11-20) posttest knowledge score in the present study.

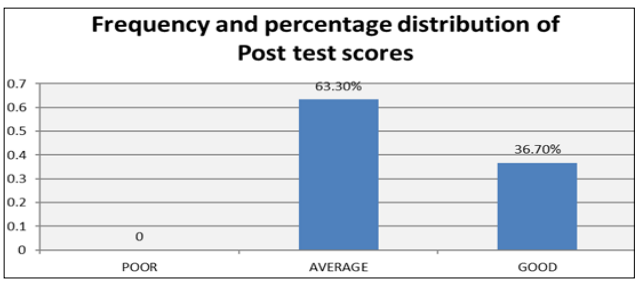

Fig 3: Frequency and percentage distribution of Post test scores of studied subjects

Table 5: Mean ($\bar{X}$) and standard Deviation (s) of knowledge scores:

Knowledge Test	Mean ($\bar{X}$)	Std Dev (S)
Post-test score	18.13	4.03

The information regarding mean, percentage of mean and standard deviation of post test scores in shown in table 5 knowledge in mean post test score was 18.13 ± 4.03 while in knowledge regarding iron and folic acid deficiency among peoples residing in Khudel At Indore.
Hence, it is confirmed from the tables of section-II that there is a significant difference in mean of test scores which partially fulfill the first second objective of the present study.

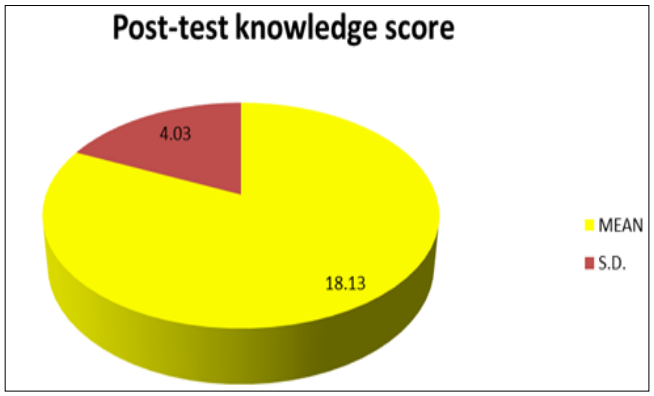

Fig 4: Mean ($\bar{X}$) and standard Deviation (s) of knowledge scores:

Table 6: Effectiveness of awareness package by calculating Mean, SD, Mean Difference and 't' Value of Pre-test and Post-test knowledge.

Knowledge Score of Peoples residing in rural area	Mean ($\bar{X}$)	S. D. (s)	Std. Error of Mean	D. F.	t-value	Significance
Pre-test	8.50	1.94	0.87	29	**-10.96**	P<0.05
Post-test	18.13	4.03				

When the mean and SD of pre-test and post-test were compared and't' test was applied. It can be clearly seen that the't' value was -10.96 and p value was <0.05 which clearly show that advanced teaching program was very effective in increasing the knowledge of peoples residing in rural area.

Section-III
Association of knowledge scores between test and selected demographic variables

Table 7: Association of age with pre-test scores

Age	Test scores			Total
(in years)	Poor (1-10)	Average (11-20)	Good (21-30)	
21-25	5	2	0	7
26-30	7	2	0	9
31-35	5	3	0	8
>35	3	3	0	6
Total	20	10	0	30
X^2=1.38 p>0.05(Insignificant)				

The association of age test scores is shown in present table 7 The probability value for Chi-Square test is 1.38 for 3 degrees of freedom which indicated a insignificant valve (p>0.05). Hence, it is identified that there is a insignificant association between age and test scores. Moreover, it is reflected that age isn't influenced with the present problem.

Table 8: Association of family monthly income with pre-test scores

Family Monthly Income	Test scores			Total
	Poor (1-10)	Average (11-20)	Good (21-30)	
<10000/-	1	2	0	3
10001-13000	9	4	0	13
13001-20000	6	4	0	10
>20000/-	4	0	0	4
Total	20	10	0	30
X^2= 3.73 p>0.05 (Insignificant)				

The association of family monthly income and test scores is shown in present table 3.2. The probability value for Chi-Square test is 3.73 for 3 degrees of freedom which indicated a insignificant value (p>0.05). Hence, it is identified that there is a insignificant association between monthly income and test scores.

Table 9: Association of marital status with pre-test scores

Marital status	Test scores			Total
Class	Poor (1-10)	Average (11-20)	Good (21-30)	
Married	11	6	0	17
Single	5	4	0	9
Widow	2	0	0	2
Divorce	2	0	0	2
Total	20	10	0	30
X^2= 2.52 p>0.05 (Insignificant)				

The association of marital status test scores is shown in present table 3.3. The probability value for Chi-Square test is 2.52 for 3 degrees of freedom which indicated a insignificant valve (p>0.05). Hence, it is identified that there is a insignificant association between marital status and test scores. Moreover, it is reflected that marital status isn't influenced with the present problem.

Table 10: Association of occupation with pre-test scores:

Occupation	Test scores			Total
Class	Poor (1-10)	Average (11-20)	Good (21-30)	
Street vendor	3	0	0	3
Laborer	10	5	0	15
Shopkeeper	4	3	0	7
Office- worker	3	5	0	5
Total	20	10	0	30
X^2= 1.88 p>0.05 (Insignificant)				

The association of age test scores is shown in present table 10 The probability value for Chi-Square test is 1.88 for 3 degrees of freedom which indicated occupation and test scores. Hence, it is identified that there is a insignificant association between occupation and test scores. Moreover, it is reflected that occupation isn't influenced with the present problem.

Results

The result of this study indicates that there was a significant increase in the post-test knowledge scores compared to pre-test scores of preventions of pre-eclampsia. The mean percentage knowledge score was observed 8.50 ± 1.94 in the pre-test and after implementation of advanced teaching program post-test mean percentage was observed with 18.13 ± 4.03.

Conclusion

Thus, after the analysis and interpretation of data we can conclude that the hypothesis RH1 that, there will be significance difference between the pre-test knowledge score with post-test knowledge score at the ($P<0.05$) is being accepted.

Furthermore, advanced teaching program regarding iron and folic acid deficiency among peoples residing in rural area may consider as an effective tool when there is a need in lacking, bridging and modifying the knowledge.

Limitations

- The study was limited to Khudel of Indore.
- The study was limited to 30 peoples residing in rural area.

Reference

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