



# IMPACT OF AWARENESS PACKAGE ON KNOWLEDGE REGARDING ANEMIA PREVENTION DURING PREGNANCY AMONG ANTENATAL MOTHERS IN RURAL AREA, INDORE

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## ABSTRACT

The current study has been undertaken to assess knowledge score regarding anemia prevention during pregnancy among antenatal mothers by awareness package in Khudel, Indore. The research design used for the study was pre-experimental in nature. The tool for study was self-structured knowledge questionnaire which consists of 2 parts- PART- I consisted of questions related to Socio-demographic data; PART-II consisted of self -structured knowledge questionnaire to assess knowledge score regarding anemia prevention during pregnancy among Antenatal mothers. The data was analyzed by using descriptive & inferential statistical methods. The most significant finding was that 27.5% of Antenatal mothers were having average knowledge regarding anemia prevention during pregnancy whereas 72.5% had good knowledge after post-test. It was suggested that nurses must educate antenatal mothers regarding anemia prevention during pregnancy.

**Keyword-** Anemia prevention, Pregnancy, Antenatal.

## I. Introduction

During pregnancy, your body produces more blood to support the growth of your baby. If you're not getting enough iron or certain other nutrients, your body might not be able to produce the amount of red blood cells it needs to make this additional blood. It's normal to have mild anemia when you are pregnant. But you may have more severe anemia from low iron or vitamin levels or from other reasons. Anemia can leave you feeling tired and weak. If it is severe but goes untreated, it can increase your risk of serious complications like preterm delivery. Here's what you need to know about the causes, symptoms, and treatment of anemia during pregnancy.

Types of Anemia During Pregnancy

Several types of anemia can develop during pregnancy. These include:

Iron-deficiency anemia, Folate-deficiency anemia, Vitamin B12 deficiency.

To prevent anemia during pregnancy, make sure you get enough iron. Eat well-balanced meals and add more foods that are high in iron to your diet. Aim for at least three servings a day of iron-rich foods, such as: lean red meat, poultry, and fish, leafy, dark green vegetables (such as spinach, broccoli, and kale), iron-enriched cereals and grains, beans, lentils, and tofu, nuts and seeds, eggs.

Foods that are high in vitamin C can help your body absorb more iron. These include: citrus fruits and juices, strawberries, kiwis, tomatoes, bell peppers.

## II. Objective of the study

1. To assess the pre-test & post-test Knowledge score regarding anaemia prevention during pregnancy among Antenatal mothers.
2. To assess impact of awareness package on knowledge regarding anaemia prevention during pregnancy among Antenatal mothers.
3. To find out association between pre-test knowledge score regarding anaemia prevention during pregnancy among Antenatal mothers with their selected demographic variables.

### III. Hypotheses:

**RH<sub>0</sub>:** There will be no significant difference between pretest & post-test knowledge score on anemia prevention during pregnancy among Antenatal mothers.

**RH<sub>1</sub>:** There will be significant difference between pretest & post-test knowledge score on anemia prevention during pregnancy among Antenatal mothers.

**RH<sub>2</sub>:** There will be significant association between pre-test score on anemia prevention during pregnancy among Antenatal mothers with their selected demographic variables.

### IV. Assumption

1. Antenatal mothers may have deficit knowledge regarding anemia prevention during pregnancy.
2. Awareness package will enhance knowledge of Antenatal mothers regarding anemia prevention during pregnancy.

### V. Methodology

An evaluative approach was used and pre-experimental one group pre-test post-test research design was used for the study. The samples consisted of 40 Antenatal mothers selected by Non probability convenient sampling technique. The setting for the study was Khudel, Indore. Data was gathered with help of demographic variables & administering a self-structured knowledge questionnaire by analyst prior & after awareness package. Post-test was done after seven days of pre-test. Data were analysis using descriptive & inferential statistics.

### VI. Analysis and interpretation

**SECTION-I Table -1 Frequency & percentage distribution of samples according to their demographic variables.**

n = 40

| S. No    | Demographic Variables   | Frequency | Percentage |
|----------|---|-----------|------------|
| <b>1</b> | <b>Age in Years</b>   |           |            |
| a.       | 21-26   | 11        | 27.5       |
| b.       | 27-32   | 24        | 60.0       |
| c.       | 33-38   | 4         | 10.0       |
| d.       | 39-44   | 1         | 2.5        |
| <b>2</b> | <b>Educational Status</b>   |           |            |
| a.       | No formal education   | 3         | 7.5        |
| b.       | Primary   | 5         | 12.5       |
| c.       | Secondary   | 15        | 37.5       |
| d.       | Higher secondary  | 16        | 40.0       |
| e.       | UG & PG   | 1         | 2.5        |
| <b>3</b> | <b>Family income</b>  |           |            |
| a.       | 10000-15000   | 12        | 30.0       |
| b.       | 150001-20000  | 19        | 35.0       |
| c.       | Above 20000   | 9         | 40.0       |
| <b>4</b> | <b>Dietary pattern</b>  |           |            |
| a.       | Vegetarian  | 10        | 25.0       |
| b.       | Non vegetarian  | 14        | 35.0       |
| c.       | Mixed   | 16        | 40.0       |
| <b>5</b> | <b>Previous knowledge related to anemia prevention during pregnancy</b> |           |            |
| a.       | Yes   | 5         | 12.5       |
| b.       | No  | 35        | 87.5       |

**SECTION-II- Table- 2.1.1- Frequency and percentage distribution of Pre-test scores of studied subjects:**

| Category and test Score | Frequency (N=40) | Frequency Percentage (%) |
|-------------------------|------------------|--------------------------|
| <b>POOR (1-10)</b>      | 34               | 85.0                     |
| <b>AVERAGE (11-20)</b>  | 6                | 15.0                     |
| <b>GOOD (21-30)</b>     | 0                | 0.0                      |
| <b>TOTAL</b>            | 40               | 100.0                    |

The present table 2.1.1 concerned with the existing knowledge regarding anemia prevention during pregnancy among Antenatal mothers were shown by pre-test score and it is observed that most of the Antenatal mothers 34 (85.0%) were poor (01-10) knowledge & some Antenatal mothers have 6 (15.0%) were from average category.

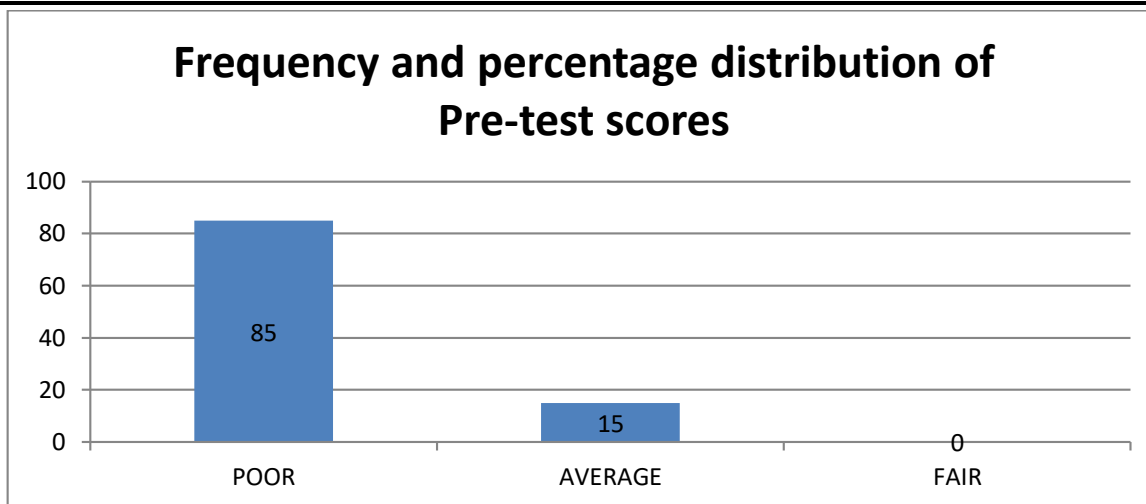


FIG.-2.1.1- Frequency and percentage distribution of Pre-test scores of studied subjects

Table-2.1.2. - Mean ( $\bar{X}$ ) and standard Deviation (s) of knowledge scores:

| Knowledge Pre -test | Mean ( $\bar{X}$ ) | Std Dev (S) |
|---------------------|--------------------|-------------|
| Pre-test score      | 8.17               | 2.92        |

The information regarding mean, percentage of mean and standard deviation of test scores in shown in table 2.1.2 knowledge in mean pre-test was  $8.17 \pm 2.92$  while in knowledge regarding anemia prevention during pregnancy among Antenatal mothers in Khudel, Indore.

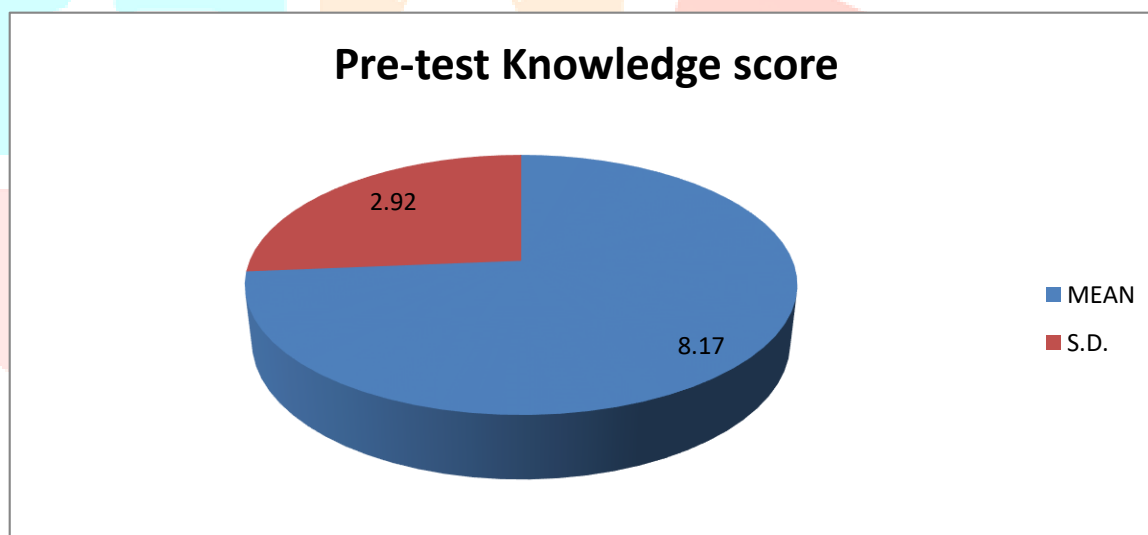


FIG.-2.1.1.1. - Mean ( $\bar{X}$ ) and standard Deviation (s) of knowledge scores

Table-2.2.1- Frequency and percentage distribution of Post test scores of studied subjects:

| Category and post-test Score | Frequency (N=40) | Frequency Percentage (%) |
|------------------------------|------------------|--------------------------|
| POOR(01-10)                  | 0                | 0.0                      |
| AVERAGE (11-20)              | 11               | 27.5                     |
| GOOD (21-30)                 | 29               | 72.5                     |
| TOTAL                        | 40               | 100%                     |

The present table 2.2.1 concerned with the existing knowledge regarding anemia prevention during pregnancy among Antenatal mothers was shown by post test score and it is observed that most of the Antenatal mothers 29 (72.5%) were **GOOD** (21-30) knowledge & other Antenatal mothers have 11 (27.5%) category which are **AVERAGE** (11-20) posttest knowledge score in present study.

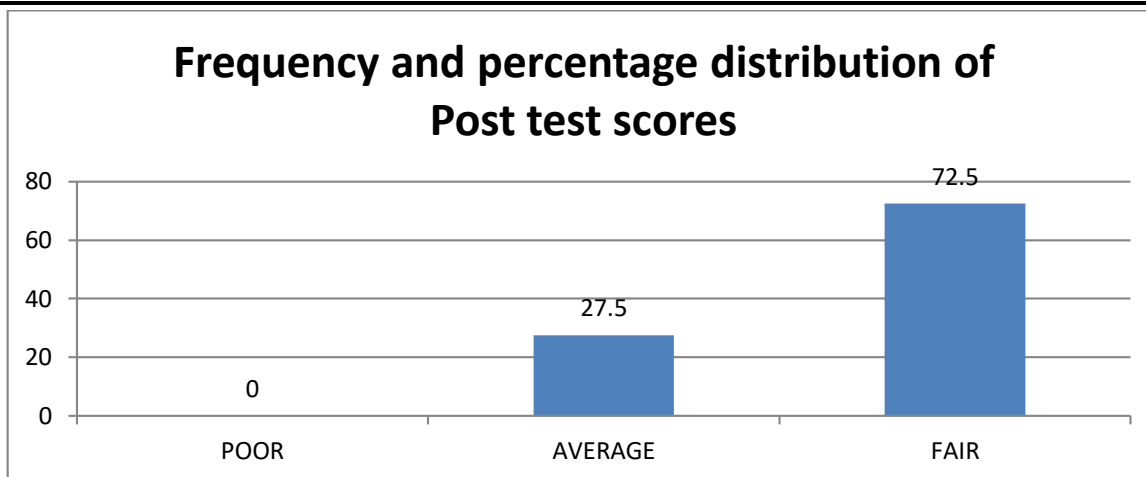


FIG.-2.2.1- Frequency and percentage distribution of Post test scores of studied subjects

Table-2.2.2. - Mean ( $\bar{X}$ ) and standard Deviation (s) of knowledge scores:

| Knowledge Test  | Mean ( $\bar{X}$ ) | Std Dev (S) |
|-----------------|--------------------|-------------|
| Post-test score | 22.55              | 3.80        |

The information regarding mean, percentage of mean and SD of post test scores in shown in table 2.2.2 knowledge in mean post test score was  $22.55 \pm 3.80$  while in knowledge regarding anemia prevention during pregnancy among Antenatal mothers in Khudel, 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 2<sup>nd</sup> objective of the present study.

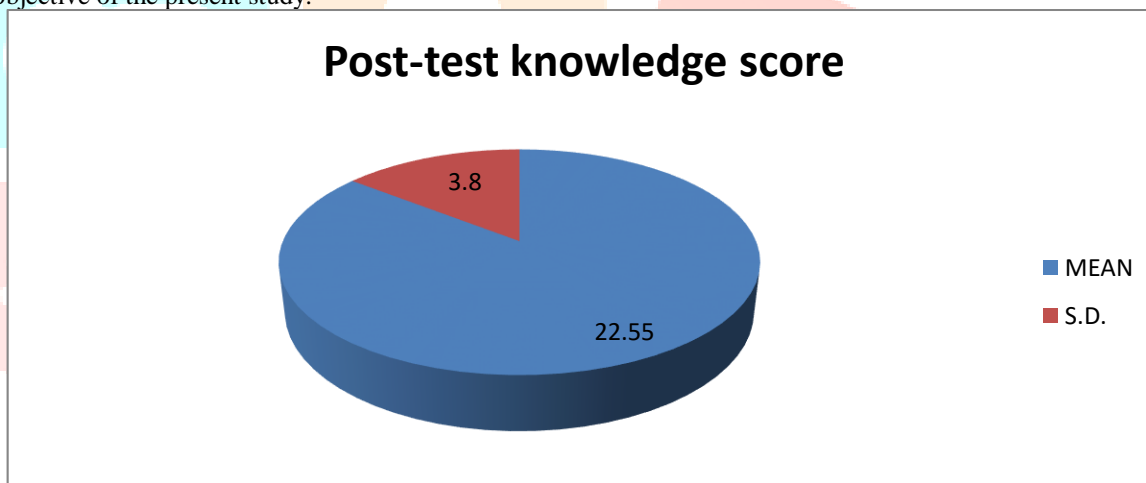


FIG.-2.2.2. - Mean ( $\bar{X}$ ) and standard Deviation (s) of knowledge scores:

TABLE 2.2.3: Impact of awareness package by calculating Mean, SD, Mean Difference and 't' Value of Pre-test and Post-test knowledge.

| Knowledge Score of Antenatal mothers | Mean ( $\bar{X}$ ) | S. D. (s) | Std. Error of Mean | D. F. | t-value | Significance |
|--------------------------------------|--------------------|-----------|--------------------|-------|---------|--------------|
| Pre-test                             | 8.17               | 2.92      | 0.71               | 39    | -20.05  | P<0.05       |
| Post-test                            | 22.55              | 3.80      |                    |       |         |              |

When the mean and SD of pre-test & post-test were compared & 't' test was applied. It can be clearly seen that the 't' value was -20.05 and p value was 0.05 which clearly show that awareness package was very effective in enhancing the knowledge of Antenatal mothers.

## SECTION-III Association of knowledge scores between test and selected demographic variables:

Table- 3.1 Association of age of Antenatal mothers with pre-test scores:

| Age<br>(in years)                                   | Test scores    |                    |                 | Total     |
|---|----------------|--------------------|-----------------|-----------|
|   | POOR<br>(1-10) | AVERAGE<br>(11-20) | GGOD<br>(21-30) |           |
| 21-25   | 10             | 1                  | 0               | 11        |
| 26-30   | 19             | 5                  | 0               | 24        |
| 31-35   | 4              | 0                  | 0               | 4         |
| Above 36  | 1              | 0                  | 0               | 1         |
| <b>Total</b>  | <b>34</b>      | <b>6</b>           | <b>0</b>        | <b>40</b> |
| X= 1.82                      p>0.05 (Insignificant) |                |                    |                 |           |

The association of age & test scores is shown in present table 3.1. The probability value for Chi-Square test is 1.82 for 3 DF which indicated insignificant value (p>0.05). Hence, it is identified that there is insignificant association between age & test scores. Moreover, it is reflected that age isn't influenced with current problem.

Table- 3.2 Association of educational status with pre-test scores:

| Educational status                                  | Test scores    |                    |                 | Total     |
|---|----------------|--------------------|-----------------|-----------|
|   | POOR<br>(1-10) | AVERAGE<br>(11-20) | GOOD<br>(21-30) |           |
| No formal   | 3              | 0                  | 0               | 3         |
| Primary   | 4              | 1                  | 0               | 5         |
| Secondary   | 12             | 3                  | 0               | 15        |
| Higher sec.   | 14             | 2                  | 0               | 16        |
| UG & PG   | 1              | 0                  | 0               | 1         |
| <b>Total</b>  | <b>34</b>      | <b>6</b>           | <b>0</b>        | <b>40</b> |
| X= 1.17                      p>0.05 (Insignificant) |                |                    |                 |           |

The association of educational status & test score is shown in present table 3.2. The probability value for Chi-Square test is 1.17 for 4 degrees of freedom which indicated educational status and test scores. Moreover, it is reflected that educational status isn't influenced with present problem.

Table- 3.3 Association of family income with pre-test scores:

| Family income                                      | Test scores    |                    |                 | Total     |
|--|----------------|--------------------|-----------------|-----------|
|  | POOR<br>(1-10) | AVERAGE<br>(11-20) | GOOD<br>(21-30) |           |
| 10000-15000  | 10             | 2                  | 0               | 12        |
| 15001-20000  | 16             | 3                  | 0               | 19        |
| Above 20000  | 8              | 1                  | 0               | 9         |
| <b>Total</b>                                       | <b>34</b>      | <b>6</b>           | <b>0</b>        | <b>40</b> |
| X=0.14                      p>0.05 (Insignificant) |                |                    |                 |           |

The association of family income & test score is shown in present table 3.3. The probability value for Chi-Square test is 0.14 for 2 degrees of freedom which indicated family income and test scores. Moreover, it is reflected that family income isn't influenced with present problem.

Table- 3.4 Association of Dietary pattern with pre-test scores:

| Dietary pattern                                     | Test scores    |                    |                 | Total     |
|---|----------------|--------------------|-----------------|-----------|
|   | POOR<br>(1-10) | AVERAGE<br>(11-20) | GOOD<br>(21-30) |           |
| Vegetarian  | 8              | 2                  | 0               | 10        |
| Non veg.  | 10             | 4                  | 0               | 14        |
| Mixed   | 16             | 0                  | 0               | 16        |
| <b>Total</b>  | <b>34</b>      | <b>6</b>           | <b>0</b>        | <b>40</b> |
| X= 5.02                      p>0.05 (Insignificant) |                |                    |                 |           |

The association of dietary pattern & test score is shown in present table 3.4. The probability value for Chi-Square test is 5.02 for 2 degrees of freedom which indicated dietary pattern and test scores. Moreover, it is reflected that dietary pattern isn't influenced with present problem.

**Table- 3.5 Association of previous knowledge related to anemia prevention during pregnancy with pre-test scores:**

| Previous Knowledge | Test scores |                        |              | Total     |
|--------------------|-------------|------------------------|--------------|-----------|
|                    | POOR (1-10) | AVERAGE (11-20)        | GOOD (21-30) |           |
| Yes                | 3           | 2                      | 0            | 5         |
| No                 | 31          | 4                      | 0            | 35        |
| <b>Total</b>       | <b>34</b>   | <b>6</b>               | <b>0</b>     | <b>40</b> |
| X= 2.80            |             | p>0.05 (Insignificant) |              |           |

The association of previous knowledge & test scores is shown in present table 3.5. The probability value for Chi-Square test is 2.80 for 1 degrees of freedom which indicated previous knowledge & test scores. Moreover, it is reflected that previous knowledge isn't influenced with current problem.

## VII. Results

The result of this study indicates that there was a significant increase in post-test knowledge scores compared to pre-test scores of anemia prevention during pregnancy. The mean percentage knowledge score was observed  $8.17 \pm 2.92$  in pre-test & after implementation of awareness package post-test mean percentage was observed with  $22.55 \pm 3.80$ .

## VIII. Conclusion

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

Furthermore, awareness package related to anemia prevention during pregnancy among Antenatal mothers may consider as an effective tool when there is a need in bridging & modifying knowledge.

## IX. Limitations

- This was limited to Khudel, Indore.
- This was limited to 40 Antenatal mothers.

## X. References

1. World Health Organization. The prevalence of anaemia in women: a tabulation of available information. 2nd ed. Geneva: World Health Organization, 1992.  
Google Scholar
2. Puolakka J, Janne O, Pakarinen A, Vihko R. Serum ferritin as a measure of stores during and after normal pregnancy with and without iron supplements. *Acta Obstet Gynecol Scand* 1980;95(suppl):43–51.  
Google Scholar Crossref
3. Harris ED. New insights into placental iron transport. *Nutr Rev* 1992; 50:329–31.  
Google ScholarPubMed
4. Starrevelde JS, Kroos MJ, van Suijlen JD, Verrijt CE, van Eijk HG, van Dijk JP. Ferritin in cultured human cytotrophoblasts; synthesis and subunit distribution. *Placenta* 1995; 16:383–95.  
Google ScholarCrossrefPubMed
5. World Health Organization. Nutritional anaemias. *World Health Organ Tech Rep Ser* 1968;405.
6. Centers for Disease Control and Prevention. Recommendations to prevent and control iron deficiency in the United States. *MMWR Morb Mortal Wkly Rep* 1998; 47:1–29.  
PubMed
7. Abou Zahr C, Royston E. Maternal mortality. A global factbook. Geneva: World Health Organization, 1991.  
Google Scholar
8. Chi I, Agoestina T, Harbin J. Maternal mortality at twelve teaching hospitals in Indonesia—an epidemiologic analysis. *Int J Gynaecol Obstet* 1981; 19:259–66.  
Google Scholar Crossref PubMed