EFFECTIVENESS OF SELF-INSTRUCTION MODULE ON KNOWLEDGE REGARDING IRON DEFICIENCY ANEMIA (IDA) AND ITS PREVENTION AMONG PREGNANT MOTHERS.

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ABSTRACT

Background: Because of the increased iron requirements during pregnancy, pregnant women are recognized as the group most vulnerable to iron deficiency anaemia. Therefore present study aims to improve the knowledge level of pregnant mothers by providing them self-instruction module regarding iron deficiency anaemia and its prevention. **Material & Method:** Quantitative pre experimental research design was used to carry out the study. A sample of 60 pregnant mothers selected for the study through non probability convenient sampling technique. **Results:** The mean pre test knowledge score was 9.65 ± 1.28, whereas mean post test knowledge score was 29.63 ± 1.39. The post-test mean value knowledge score among pregnant mothers was significantly higher than the pre test mean value knowledge score. The mean difference was 19.98. The paired student "t" test value was 73.59 which was significant at $P=0.05$ level. The findings revealed that there was significant association between knowledge score with selected demographic variables of the pregnant mothers like Age, education, Nutritional habits and source of information regarding IDA. **Conclusion**: Study concluded that knowledge regarding iron deficiency anaemia and its prevention is much needed among pregnant mothers for prevention of future problems related to iron deficiency anaemia in both mother and child.

KEYWORDS: Iron deficiency anaemia, Pregnant mothers, Knowledge, Self-instruction module, Prevention.

INTRODUCTION

Anaemia is a major worldwide public health problem that mostly affects young children and pregnant women. As per WHO data availability, 42% of children less than 5 years of age and 40% of pregnant women globally are anaemic.[1] Anaemia is defined as a decrease in red cell haemoglobin concentration in relation to age, sex, and geographical specifications. It is termed as one of the most common nutritional deficiency globally and affects more than 1.6 billion people worldwide.[2]According to the World Health Organization (WHO), anemia is defined as hemoglobin (Hb) levels <12.0 g/dL in women and <13.0 g/dL in men.[3] The baseline measure of hemoglobin concentration that categorizes anemia is less than 7.0 g/dL for severe anemia, 7.0–9.9 g/dL for moderate anemia, and 10.0–11.9 g/dL for mild anemia.[4]

The estimated prevalence of anemia among pregnant women in India is higher than the global prevalence at 49.7%.[5] Adverse foetal, neonatal, and childhood outcomes are linked to maternal anaemia, however the link between the two has not been proven. Anemia in the mother raises the chance of a blood transfusion during delivery. The most typical cause of anaemia in pregnancy, aside from hemodilution, is iron deficiency. The first trimester and again at 24 to 28 weeks of gestation are the recommended times for a complete blood count to check for anaemia, according to the American College of Obstetricians and Gynecologists.[6] Iron deficiency may result from insufficient iron intake, decreased absorption, or blood loss. The cause of iron-deficiency anaemia varies based on age, gender, and socioeconomic status. It may also be seen with low

dietary intake, increased systemic requirements for iron such as in pregnancy, and decreased iron absorption such as in celiac disease. In developing countries, a parasitic infestation is also a significant cause of iron-deficiency anaemia.[7] Throughout pregnancy, iron deficiency anemia adversely affects the maternal and fetal well-being, and is linked to increased morbidity and fetal death. Affected mothers frequently experience breathing difficulties, fainting, tiredness, palpitations, and sleep difficulties. They also have an increased risk of developing perinatal infection, pre-eclampsia, and bleeding.[8] Approximately 25% of people worldwide have anaemia. Iron deficiency, the most common cause, is responsible for 50% of all anaemia's. The rate of iron deficiency is higher in developing countries compared to the United States, where the prevalence of iron-deficiency anaemia in men under 50 is 1%.[9] In global anaemia prevalence in 2019 was 29.9% in reproductive age women, corresponding to over half a billion women aged 15-49 years. There was higher prevalence 36.5% in pregnant women comparing to 29.6% in non-pregnant women of reproductive age.[10] According to a community based cross-sectional study by **Kumar V et al (2019),** the Prevalence of anemia among the pregnant women was 81.8%. 35.0% women were mild anemic, 45.4% were moderate and 1.4% were severe anemic. Occurrence of anemia was significantly associated with age, occupation, Parity, Timing of first ANC check up and IFA consumption of study participants.[11] **Yadav U et al (2020)** found 92% prevalence of anemia in women attending the Antenatal Outpatient Department in Uttar Pradesh using the WHO criteria and 87.6% with CDC criteria. About 63.2% of women had moderate anemia (WHO), of which 59.3% were between age group of 22 and 30 years, 61.4% were second gravidas, 60.7% came in the second trimester, and 59.8% had ≥1 live birth.[12] Because of the high prevalence of iron deficiency anaemia among pregnant women and adverse effects on pregnancy and fetus, we chose the following topic for the study.

Statement of Problem: "Evaluate the effectiveness of self-instruction module on knowledge regarding iron deficiency anaemia and its prevention among pregnant mothers residing in selected rural areas of Udaipur, Rajasthan."

OBJECTIVE
1. To assess the pretest knowledge score regarding iron deficiency anemia and its prevention among pregnant mothers
2. To develop and administer self-instruction module regarding iron deficiency anemia and its prevention among pregnant mothers.
3. To assess the post-test knowledge score regarding iron deficiency anemia and its prevention among pregnant mothers.
4. To determine the effectiveness of self-instruction module regarding iron deficiency anemia and its prevention among pregnant mothers.

5. To find out the association between pre-test knowledge score with selected socio- demographic variables.

MATERIAL AND METHODS

Research approach:- Quantitative approach
Research Design:- Pre experimental one group pretest post-test research design.
Research Setting: Study was conducted in rural areas of Udaipur, Rajasthan.
Population:- Study population consisted pregnant mothers residing in rural areas of Udaipur, Rajasthan.
Sampling technique and sample: 60 pregnant mothers selected through non probability convenient sampling technique.

Research Tool: The tools selected for the present study divided in two sections.
Section I:- Socio-demographic variables included 6 items such as age in years, education, occupational status, nutritional habits, previous knowledge regarding IDA and source of information.
Section II:- Structured knowledge questionnaire consists of 36 questions to assess the level of knowledge regarding IDA and its prevention. The area included were knowledge on blood, Production and degradation of blood cells, Function of blood, anemia, Risk factor of anemia, Sign and symptoms of anemia, Causes of anemia, Sign and symptoms of anemia, Type of anemia, Iron Deficiency Anemia, Causes of IDA, Sign, and symptom of IDA, Diagnosis, Treatment of iron deficiency anemia, Prevention of Iron deficiency anemia. Prior to tool administration all subjects were given an information sheet, explaining the purpose and outcome of study. Informed consent was taken from participants and self explanatory tools were administered to participants. Permission for study was taken from concerned authorities.

RESULTS

Table: 1. Distribution of samples according to socio demographic variables (N=60).

S. No.	Demographic Variables	Frequency	Percentage
1	Age (in years) a) 21-28 b) 29-36 c) 37-44	33 15 12	55% 25% 20%
2	Maternal education a) Illiterate b) Can read & write c) Primary d) Secondary e) Graduation & more	09 15 10 15 11	15% 25% 16.7% 25% 18.3%
3	Occupational Status a) House wife b) Employed	48 12	80% 20%
4	Nutritional habits a) vegetarian b) Non –vegetarian	42 18	70% 30%
5	Previous knowledge regarding IDA a) Yes b) No	10 50	16.7% 83.3%
6	Source of in information a) Health personal b) Mass Media c) Relatives & Community	40 15 05	66.7% 25% 8.3%

According to table 1, majority of the respondents 33 (55 %) belongs to the age group 21-28 years, 15 (25 %) respondents belongs to the age group 29-36 years and 12 (20 %) respondents belongs to the age group 37-44 years. With regard to maternal education, majority of the respondents 15 (25%) belongs to can read & write and secondary level category, 11 (18.3%) respondents belongs to graduation and above, 10 (16.7%) respondents belongs to primary and 9 (15%) belongs to illiterate. In view of occupational status, most of respondents were 48 (80%) house wife, while 12(20%) respondents were employed. Regarding nutritional habits, most of the respondents were 42(80%) vegetarian while 18 (30%) respondents were non-vegetarian. As per previous knowledge regarding IDA, 50(83.3%) were not having any previous knowledge while 10(16.7%) were having previous knowledge regarding IDA. Regarding source of information about IDA, majority of respondents 40 (66.7%) received knowledge from health personal, 15(25%) from mass media and 5(8.33%) received knowledge from relatives & community.

Table: 2- Pre test and post test level of knowledge among nursing students regarding polycystic ovarian syndrome.

S. No.	Level of Knowledge	Score (%)	Pre-Test		Post-Test	
			Frequency	Percentage	Frequency	Percentage
1	Inadequate knowledge	0-50%	48	80%	00	00
2	Moderate Knowledge	51-75%	12	20%	36	60%
3	Adequate knowledge	76-100%	00	00	24	40%
	TOTAL		60	100	60	100

Table 2, reveals that among 60 pregnant mothers, most of them 48 (80%) had inadequate knowledge level, 12 (20%) had moderate knowledge level and no one had adequate knowledge level in pre-test regarding Iron deficiency anemia (IDA) and its prevention. While in post test 24(40%) pregnant mothers had adequate knowledge level, 36(60%) had moderate knowledge level and no one had inadequate knowledge level regarding Iron deficiency anemia (IDA) and its prevention. From the above findings, it was inferred that, most of the pregnant mothers had inadequate and moderate knowledge level in pre-test and most of the pregnant mothers had adequate knowledge level in post-test regarding Iron deficiency anemia (IDA) and its prevention.
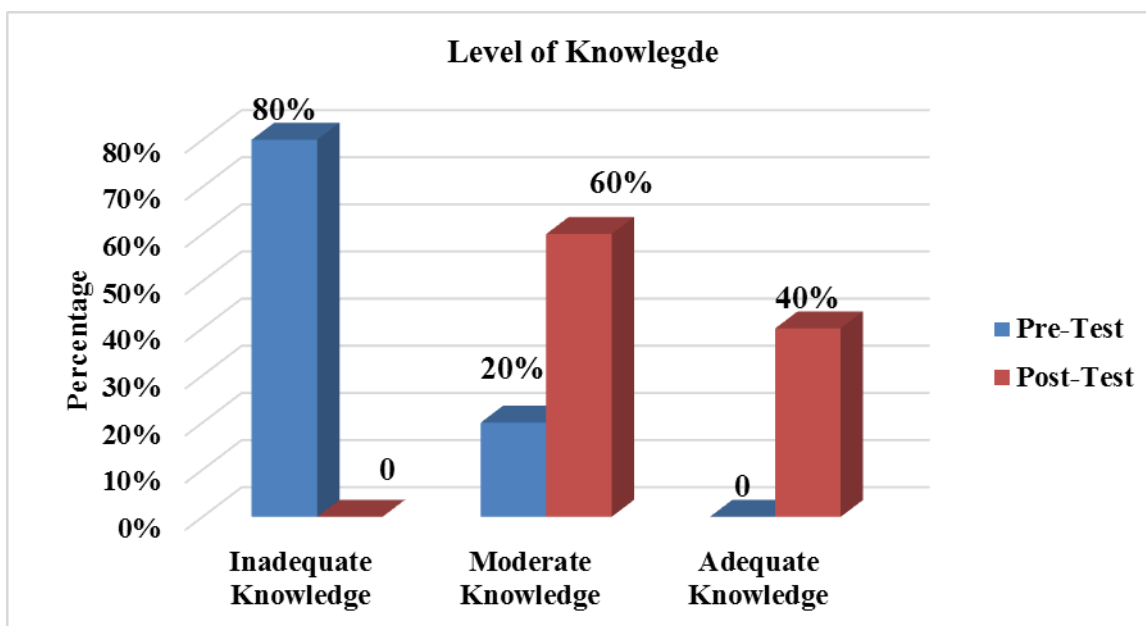
Figure 1: Percentage Distribution of Pre-test and Post-Test Level of Knowledge among pregnant mothers.

Table 3: Comparison of Pre test and post test level of knowledge among pregnant mothers regarding IDA.

S.No	Level of Knowledge	Mean	Standard Deviation	Mean Difference	't' Value
1	Pre-Test	9.65	1.28		
2	Post-Test	29.63	1.39	19.98	73.59*

Table 3, revealed that among pregnant mothers, the mean pre-test score was 9.65 with the standard deviation 1.28 and post-test score was 29.63 with the standard deviation 1.39. The mean difference was 19.98. The obtained 't' value 73.59 was statistically significant at p<0.05 level. Hence the stated hypothesis (H1) was accepted. It was inferred that the mean post-test level of knowledge score was more than the pre-test level of knowledge score. There is a significant difference between the mean pre and post-test level of Knowledge among pregnant mothers regarding Iron deficiency anemia (IDA) and its prevention. Thus self instructional module regarding Iron deficiency anemia (IDA) and its prevention was proven to be effective on the level of knowledge among pregnant mothers.

On the basis of chi square test there was significant association found between the knowledge score regarding Iron deficiency anemia (IDA) and its prevention among pregnant mothers with demographic variables like age in years ($\chi2=7.01$, p=.03), maternal education ($\chi2=10.09$, p=.03), nutritional habits ($\chi2=3.95$, p=.04) and source of information ($\chi2=8.14$, p=.01). While rest of the demographic variables like occupational status ($\chi2=3.32$, p=.06) and previous knowledge regarding IDA ($\chi2=3.03$, p=.08) were not associated with knowledge score regarding Iron deficiency anemia (IDA) and its prevention among pregnant mothers.

DISCUSSION

Our study findings revealed that among 60 pregnant mothers, most of them 48 (80%) had inadequate knowledge level, 12 (20%) had moderate knowledge level in pre-test regarding Iron deficiency anemia (IDA) and its prevention. Our result supported by **Vinay Kumar G et al (2020)**[13], his explorative descriptive study also revealed that 42.22% of women had good knowledge, 33.33% of women had average knowledge and 24.44% of women had low knowledge about anemia. Our result also supported by, **Amanjeet Kaur (2019)**[14] with similar finding which showed that 74.4% of the pregnant women had inadequate knowledge and 25.6% of the pregnant women had moderately adequate knowledge on iron deficiency anemia. Studies conducted by **Keneni Berhanu et al (2018)**[15], **Chandrasekhar M et al (2016)**[16] and **D'Souza, Prima (2015)**[17] also revealed similar findings regarding knowledge assessment about iron deficiency anemia and its prevention.

Our study revealed in post test, 24(40%) pregnant mothers had adequate knowledge level, 36(60%) had moderate knowledge level and no one had inadequate knowledge level regarding Iron deficiency anemia (IDA) and its prevention. There was enhancement in knowledge level in post test due to self instructional module. The mean pre-test score was 9.65 with the standard deviation 1.28 and post-test score was 29.63 with the standard deviation 1.39. The mean difference was 19.98. The obtained 't' value 73.59 was statistically significant at p<0.05 level. It was inferred that the mean post-test

level of knowledge score was more than the pre-test level of knowledge score.

Our findings supported by **Padma Hepsiba and Firdousa Jan (2020)**[18] with similar findings in their study to improve the knowledge level of antenatal mothers regarding management of iron deficiency anaemia through structured teaching program. They revealed that there was a significant difference in level of knowledge from pre test to post test.

Nahrisah, P et al (2020)[19] also revealed similar findings in their quasi-experimental study to assess the effect of integrated pictorial handbook education and counselling on improving anemia status. The post-test means of hemoglobin $F_{(1, 132)} = 122$, p-value <0.001, and hematocrit levels $F_{(1, 132)} = 373$, p-value <0.001, were significantly different and higher in the intervention group compared to the control group. **Raikar K et al (2020)**[20] also found similar result indicating the nutrition education session were effective in increasing the knowledge of the subjects regarding nutrition related health problems. **Meena H, Chaturvedi D (2020)**[21] also revealed similar findings while assessing effectiveness of structured teaching program on knowledge regarding malnutrition and its prevention.

Our study revealed that there is a significant association between the pre test knowledge score regarding Iron deficiency anemia (IDA) and its prevention among pregnant mothers with demographic variables like age in years, maternal education, nutritional habits and source of information.

Our findings partially supported by study conducted by **Raikar K et al (2020)**[20] in which mother's educational status (P = 0.024) was significantly associated with pre test knowledge level. **Mangala S. Khadse, Bharati Weljale (2020)**[22] also revealed that age and educational level of primi antenatal mothers was significantly associated with the knowledge level regarding anemia and its effect on health.

CONCLUSION
Findings of our study strongly recommend the need for conducting education program to increase the knowledge regarding iron deficiency anemia and its prevention among pregnant mothers. By educating anticipated mothers, problems related pregnancy period, pregnancy outcome and pregnancy product can be minimized. It helps to reduce both morbidity and mortality of mother and child due to Iron deficiency anaemia.

LIMITATIONS: The small size (60) of the sample made it difficult to draw generalization. A structured questionnaire was used for data collection which restricts the amount of information that can be obtained from the respondents, only knowledge was assessed; no attempt was made to assess their attitudes due to time shortage and less resources.

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