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"A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION AND MANAGEMENT OF ANEMIA DURING PREGNANCY AMONG ANTENATAL MOTHERS IN SELECTED URBAN AREAS OF AHMEDABAD."

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Abstract :

BACKGROUND: Anemia is a condition in which the blood does not have enough healthy red blood cells to carry adequate oxygen to tissues. In pregnancy it's often from iron/folate deficiency, infections or blood loss and raises risks for IUGR, low birth weight, preterm delivery and maternal complications.

OBJECTIVE: To evaluate the effectiveness of a structured teaching programme on knowledge regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

METHODOLOGY: A quantitative research approach with a one-group pre-test and post-test design was used. Sixty antenatal mothers were selected through non-probability convenience sampling. Data were collected using a structured knowledge questionnaire.

RESULTS: The post-test knowledge score was higher than the pre-test score with a mean difference of 8.02. The calculated t-value (29.64) was greater than the table value (2.00) at 0.05 level of significance. A significant association was also found with age and occupation.

CONCLUSION: The structured teaching programme was effective in improving knowledge regarding prevention and management of anemia during pregnancy among antenatal mothers.

KEYWORDS: study, evaluate , effectiveness ,structured teaching programme, knowledge, prevention, management, anemia, pregnancy, antenatal mothers, urban areas

I. INTRODUCTION

Anemia is a common nutritional and health problem characterized by a decreased level of hemoglobin in the blood, resulting in reduced oxygen supply to body tissues. It often causes symptoms such as fatigue, weakness, dizziness, shortness of breath, and headache. During pregnancy, anemia becomes a major public health concern as it affects both maternal and fetal health. According to the Indian Council of Medical Research (ICMR), anemia in pregnancy is defined as hemoglobin (Hb) level less than 11 g/dl in the first and third trimester and less than 10.5 g/dl in the second trimester.

Anemia in pregnancy is mainly caused by iron and folic acid deficiency, poor nutrition, infections, blood loss, and chronic diseases. If untreated, it may lead to serious complications such as pre-eclampsia, preterm labour, postpartum hemorrhage, and increased susceptibility to infections. It also affects fetal outcomes, leading to intrauterine growth restriction (IUGR), low birth weight, and premature birth. According to the World Health Organization, anemia during pregnancy is classified as mild (Hb 10–10.9 g/dl), moderate (Hb 7–9.9 g/dl), and severe (Hb below 7 g/dl).

Anemia remains highly prevalent among pregnant women, especially in developing countries like India. The National Family Health Survey (NFHS-5) reports that more than half of pregnant women in India are anemic. To address this major health issue, the Government of India launched the Anemia Mukt Bharat initiative, which focuses on reducing anemia through improved nutrition, iron and folic acid supplementation, and awareness programs among women and children. Therefore, understanding anemia in pregnancy and its prevention is essential for improving maternal and neonatal health outcomes.

OBJECTIVES OF STUDY:

1) To assess the level of pre-test knowledge score regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.
2) To assess the level of post-test knowledge score regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.
3) To evaluate the effectiveness of structured teaching programme by comparing pretest and post- test knowledge score after administration of structured teaching programme regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.
4) To find out the association between selected demographic variables with pre-test knowledge score regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

HYPOTHESIS:

H0 -There will be no significant difference in post-test level of knowledge after administration of structured teaching programme regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

H1 -There will be significant difference in post-test level of knowledge after administration of structured teaching programme regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

H2 - There will be a significant association between selected demographic variables and pre-test knowledge score regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

II. REVIEW OF LITERATURE :

Reviewing literature is an important part of research that helps the researcher understand existing knowledge related to the study topic. According to S. K. Sharma (2005), literature review is a broad, comprehensive and systematic analysis of scholarly publications and other relevant materials. Similarly, the University of Wisconsin Writing Centre describes literature review as a critical analysis of published knowledge through summarizing, comparing and classifying previous studies. Reviewing literature helps the researcher to identify gaps in knowledge and understand the current status of research related to anemia and its prevention.

Many studies have shown that structured teaching programmes and health education are effective in improving knowledge about anemia and its prevention among women. Research conducted among pregnant and lactating mothers in different regions revealed that lack of awareness regarding causes, symptoms, and dietary sources of iron is common. However, after educational interventions or nutrition education programmes, there was a significant improvement in knowledge, attitude and dietary practices related to anemia prevention.

Several quasi-experimental and pre-experimental studies among antenatal mothers demonstrated that structured teaching programmes significantly improved knowledge scores in post-tests compared to pre-tests. Studies conducted in different parts of India and other countries found that educational interventions increased awareness about iron-rich diet, iron supplementation, and prevention of anemia during pregnancy. These findings indicate that teaching programmes play a major role in improving maternal knowledge and promoting healthy behaviours.

Other descriptive and cross-sectional studies have highlighted the high prevalence of anemia among pregnant women and the need for better awareness and early antenatal care. Factors such as low socio-economic status, late antenatal booking, poor dietary habits, and irregular iron supplementation contribute to anemia during pregnancy. Many women also lack adequate knowledge about anemia and its management.

Overall, the review of literature shows that anemia during pregnancy is a common public health problem and that health education and structured teaching programmes are effective strategies to improve knowledge and preventive practices among antenatal mothers. These studies support the need for educational interventions to enhance awareness and promote better management and prevention of anemia during pregnancy.

III. RESEARCH METHODOLOGY

A quantitative research approach was adopted to evaluate the effectiveness of a Structured Teaching Program (STP) regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad. The study utilized a pre-experimental one-group pre-test post-test research design. The independent variable was the Structured Teaching Program, while the dependent variable was knowledge regarding prevention and management of anemia during pregnancy.

The study was conducted in selected urban areas of Ahmedabad. The target population comprised antenatal mothers , and the accessible population included those who were available and willing to participate during the data collection period. A total of 60 antenatal mothers were selected using a non-probability convenient sampling technique. Inclusion criteria included antenatal mothers those who are willing to participate in study and available during the time of data collection

Data were collected using a self-structured knowledge questionnaire consisting of 30 multiple-choice questions, with a maximum score of 30. Content validity of the tool was established by five nursing experts, and reliability was determined using the test-retest method (r = 0.9), indicating good reliability. A pilot study was conducted to assess feasibility and clarity of the tool.
The pre-test was administered, followed by the Structured Teaching Program using lecture-cum-discussion and audiovisual aids. A post-test was conducted after seven days to evaluate knowledge gain. Data were analyzed using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired t-test and Fisher's chi-square test).

IV. RESULT AND ANALYSIS

The data collected from 60 antenatal mothers were analyzed using descriptive and inferential statistics to evaluate the effectiveness of the Structured Teaching Program (STP) on knowledge regarding prevention and management of anemia during pregnancy.

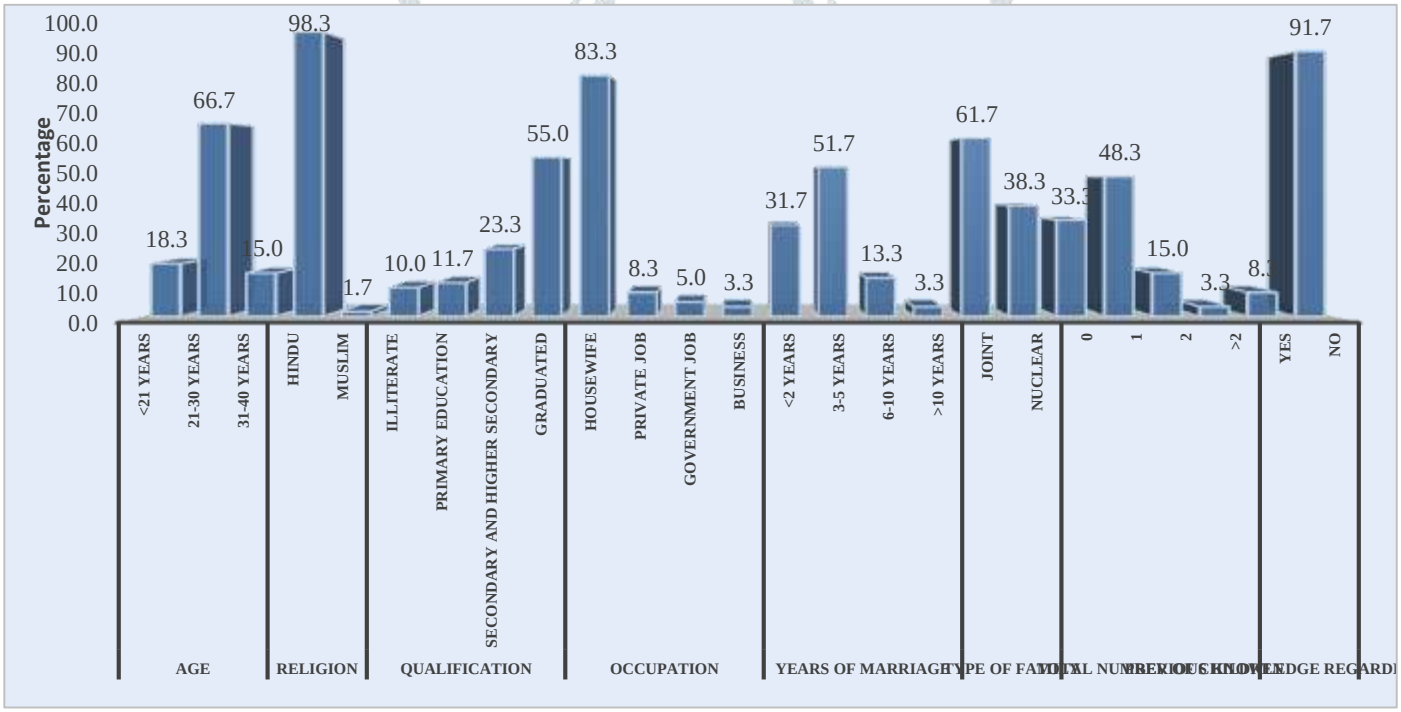
4.1 Demographic characteristics

majority of the samples 40 (66.7%) belonged to the 21–30 years age group. Most of the samples 59 (98.3%) were Hindu. Regarding educational qualification, the majority 33 (55%) were graduates. According to occupation, most of the samples 50 (83.3%) were housewives. The majority of the samples 31 (51.7%) had 3–5 years of married life. Most of the samples 37 (61.7%) belonged to joint families. Regarding number of children, the majority 29 (48.3%) had one child. Most of the samples 55 (91.7%) had no previous knowledge regarding anemia.

DEMOGRAPHIC DATA		FREQUENCY	PERCENT
Age	<21 years	11	18.3
	21-30 years	40	66.7
	31-40 years	9	15.0
Religion	Hindu	59	98.3
	Muslim	1	1.7
Qualification	Illiterate	6	10.0
	Primary Education	7	11.7
	Secondary and Higher Secondary	14	23.3
	Graduate	33	55.0
Occupation	Housewife	50	83.3
	Private Job	5	8.3
	Government Job	3	5.0
	Business	2	3.3
Years of marriage	<2 years	19	31.7
	3-5 years	31	51.7

	6-10 years	8	13.3
	>10 years	2	3.3
Type of family	Joint	37	61.7
	Nuclear	23	38.3
Total number of children	0	20	33.3
	1	29	48.3
	2	9	15.0
	>2	2	3.3
Previous knowledge regarding anemia	Yes	5	8.3
	No	55	91.7

Level of knowledge	**PRE-TEST**		**POST-TEST**	
	Frequency	**Percentage (%)**	**Frequency**	**Percentage (%)**
POOR	**38**	**63.3**	**00**	**00**

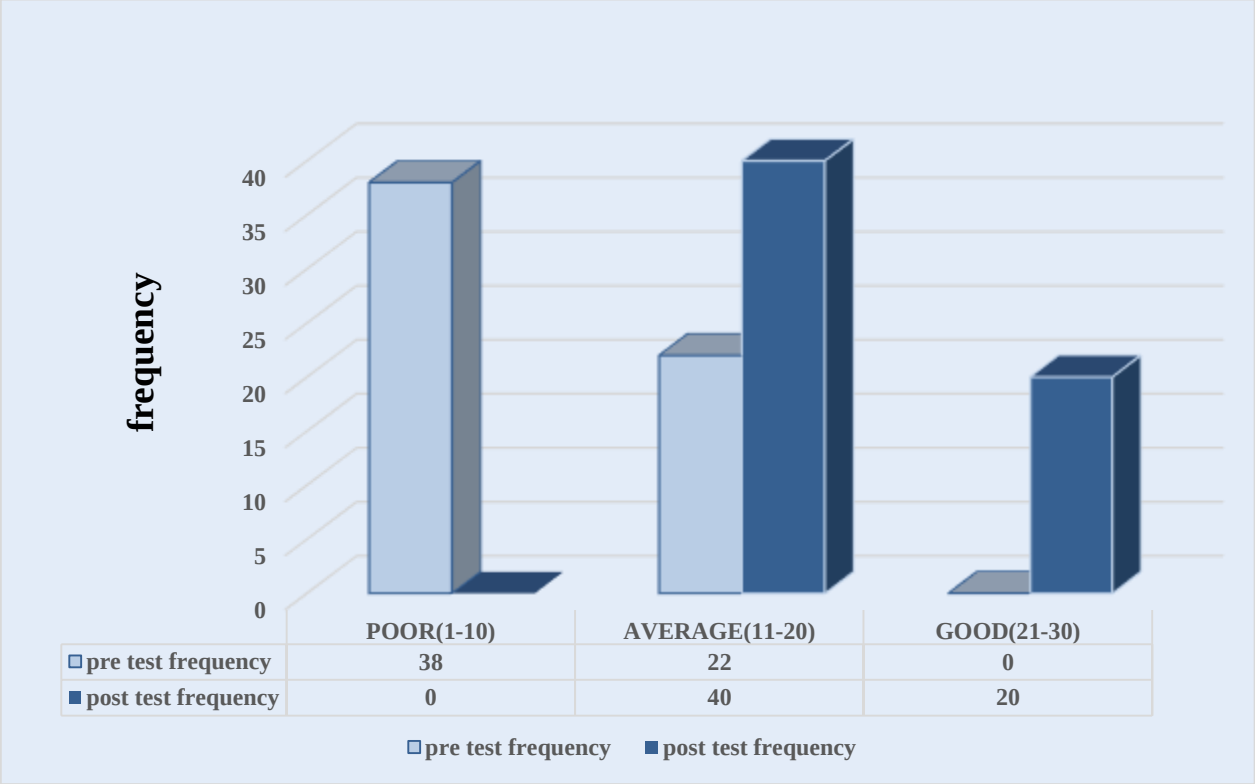


4.2 Comparison of Pre-Test and Post-Test Knowledge Scores

In the level of knowledge before and after administration of the Structured Teaching Programme. In the pre-test, the majority of the samples 38 (63.3%) had poor knowledge and 22 (36.7%) had average knowledge, while none of the samples had good knowledge. After administration of the Structured Teaching Programme, none of the samples remained in the poor category, 40 (66.7%) had average knowledge and 20 (33.3%) had good knowledge.

This indicates that the Structured Teaching Programme improved the level of knowledge among the samples in the post-test.

(1-10)				
AVERAGE (11-20)	**22**	**36.7**	**40**	**66.7**
GOOD (21-30)	**00**	**00**	**20**	**33.3**
TOTAL	**60**	**100**	**60**	**100**



4.3 Area-wise Knowledge Gain

Area-wise analysis showed the maximum percentage gain in knowledge related to D/E (41.67%), followed by sign and symptoms (32.67%), incidence and causes (30.42%), prevention (30.56%), types (29.17%), schemes (28%), and introduction and definition (27.33%). The least percentage gain was observed in management (18.57%).

Overall, the mean knowledge score increased from 9.93 (mean % 33.11) in pre-test to 19.67 (mean % 65.57) in post-test, showing an overall knowledge gain of 26.72% after the intervention.

Item	Score	Pre Test			Post Test			Mean Diff	% Gain
		Mean	SD	Mean %	Mean	SD	Mean %		
Related to introduction and definition	5	2.13	0.87	42.67	3.50	0.87	70.00	1.37	27.33
Related to Incidence and causes	4	1.23	0.95	30.83	2.45	0.81	61.25	1.22	30.42

Related to types	2	0.42	0.53	20.83	1.00	0.69	50.00	0.58	29.17
Related to sign and symptoms	5	2.00	1.06	40.00	3.63	0.86	72.67	1.63	32.67
Related to D/E	2	0.53	0.60	26.67	1.37	0.58	68.33	0.83	41.67
Related to prevention	3	1.22	0.85	40.56	2.13	0.70	71.11	0.92	30.56
Related to schemes	2	0.50	0.68	25.00	1.60	0.61	53.00	0.56	28.00
Related to management	7	1.90	1.23	27.14	3.20	0.86	45.71	1.30	18.57
Total Knowledge	30	9.93	2.25	6.39	19.67	2.12	33.11	8.02	26.72

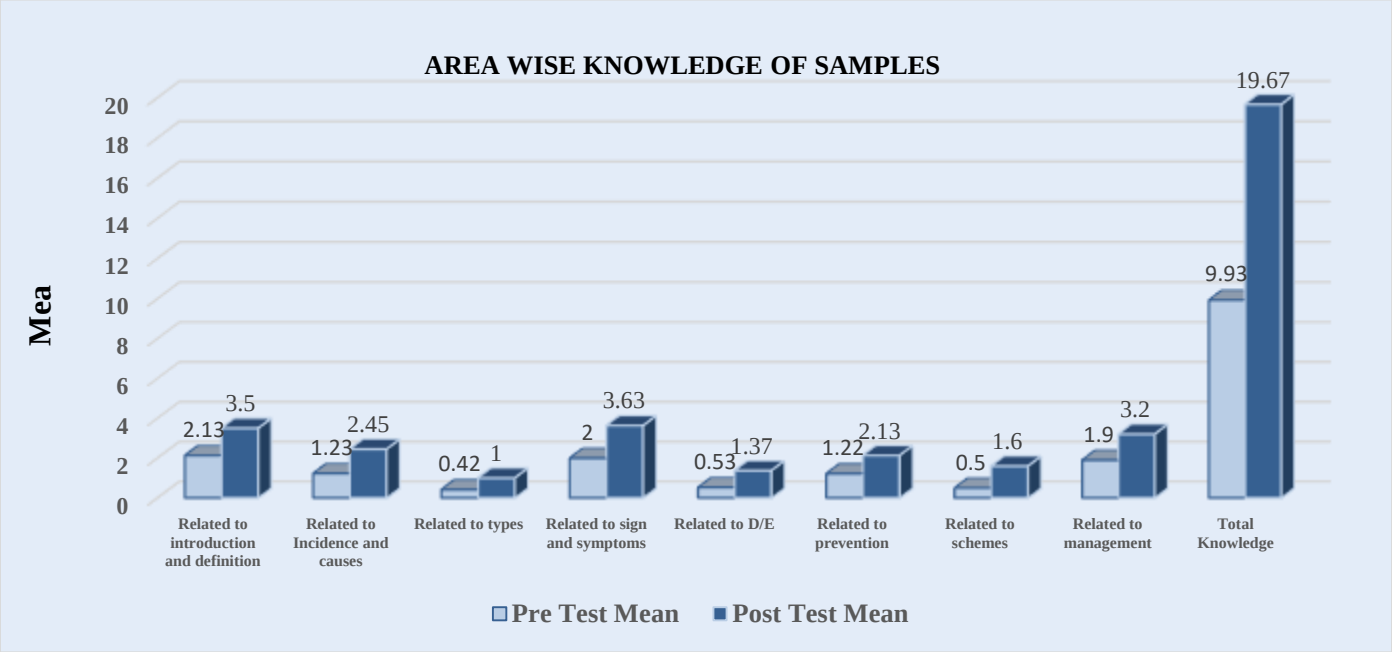


Table 4.4 Mean, Mean Difference, Standard Deviation (SD) and 't' test value of the Pre-test and Post-test Knowledge scores of samples. [N=60]

Table 4.4 shows the comparison of Pre-test and Post-test knowledge scores of samples regarding prevention and management of anemia during pregnancy among antenatal mothers. The mean Pre-test score was 9.93, while the mean Post-test score was 19.67, with a mean difference of 9.74. The standard deviation of the Pre-test score was 2.25 and the Post-test score was 2.12.

The calculated t-value (29.64) was higher than the tabulated t-value (2) at 0.05 level of significance with 59 degrees of freedom. Therefore, the null hypothesis was rejected, indicating that the structured teaching programme was effective in improving the knowledge of antenatal mothers regarding prevention and management of anemia during pregnancy.

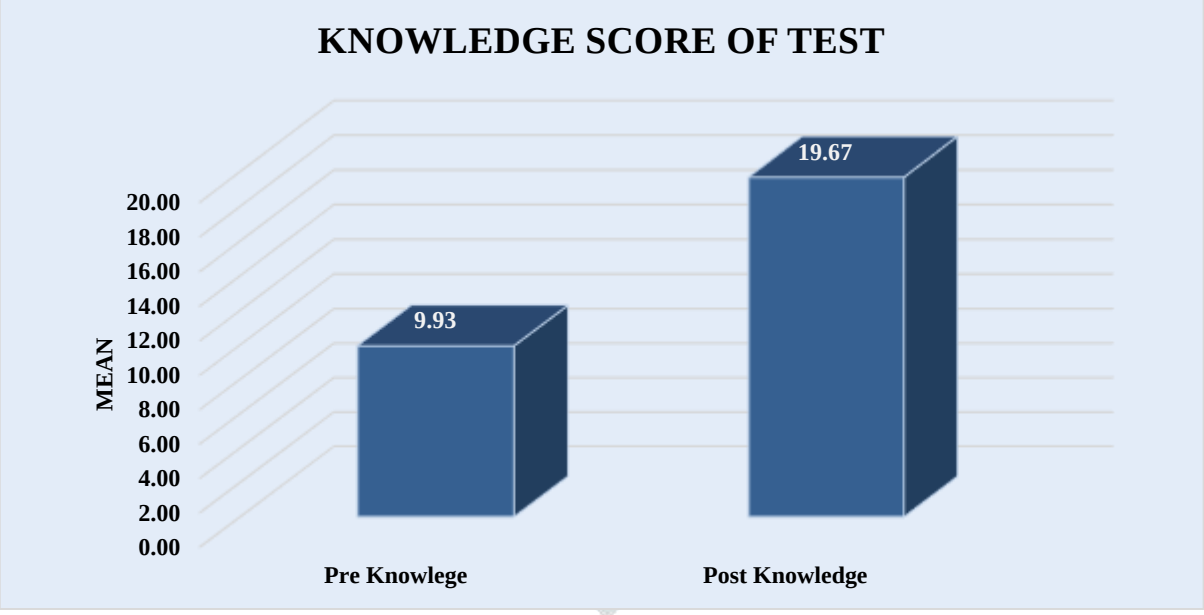
Demographic variables		Pre Knowledge		Total	Chi Square	DF	Table Value	S/NS
		Average	Poor					
1.Age	<21 years	3	8	11	7.65	2	5.99	S
	21-30 years	19	21	40				
	31-40 years	0	9	9				
2.Religion	Hindu	22	37	59	0.589	1	3.84	NS
	Muslim	0	1	1				
3.Qualification	Illiterate	2	4	6	0.337	3	7.82	NS
	Primary education	2	5	7				
	Secondary and higher secondary	5	9	14				
	Graduated	13	20	33				
4.Occupation	Housewife	15	35	50	9.617	3	7.82	S
	Private Job	2	3	5				
	Government Job	3	0	3				

Knowledge test	Mean	Std. Deviation	t value	DF	Table Value	S/NS
Pre Knowledge	9.93	2.25	29.64	59	2	S
Post Knowledge	19.67	2.12				

	Business	2	0	2				
5.Years of marriage	<2 years	7	12	19	1.216	3	7.82	NS
	3-5 years	12	19	31				
	6-10 years	3	5	8				
	>10 years	0	2	2				
6.Type of family	Joint	12	25	37	0.745	1	3.84	NS
	Nuclear	10	13	23				
7.Total number of children	0	8	12	20	0.879	3	7.82	NS
	1	9	20	29				
	2	4	5	9				
	>2	1	1	2				
8.Previous knowledge regarding anemia	Yes	2	3	5	0.026	1	3.84	NS
	No	20	35	55				

4.5Association Between Pre-Test Knowledge and Demographic Variables

Chi-square analysis revealed that age ($\chi^2 = 7.65$, $p < 0.05$) and occupation ($\chi^2 = 9.617$, $p < 0.05$) had significant association with pre-test knowledge scores. Other variables such as religion, qualification, years of marriage, type of family, total number of children, previous knowlege showed no significant association.



Conclusion of Analysis

The findings clearly indicate a statistically significant improvement in knowledge scores after the administration of the Structured Teaching Program. Therefore, the null hypothesis (H_0) was rejected and the research hypothesis(H_1) was accepted, confirming the effectiveness of the intervention.

V. Discussion, Conclusion, Implications and recommendations

The study evaluated the effectiveness of a Structured Teaching Program (STP) on knowledge regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad.

The findings showed a significant improvement in knowledge after the intervention. The mean pre-test score (9.93) increased to 19.67 in the post-test, and the calculated value (29.64) was statistically significant at 0.05 level.

Age and occupation showed significant association with pre-test knowledge, while other demographic variables did not. The findings indicate that structured health education plays an important role in improving awareness and promoting preventive health practices among antenatal mothers.

Conclusion: The study concluded that a knowledge deficit existed before the intervention. The Structured Teaching Program was effective in significantly improving knowledge regarding prevention and management of anemia during pregnancy among antenatal mothers in selected urban areas of Ahmedabad. Regular educational programs are essential to promote early detection and anemia health awareness.

Implications and Recommendations: The study suggests that nurses should organize regular awareness programs in urban areas. Future research can be conducted with larger samples, experimental designs, and long-term follow-up to assess sustained practice.

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