JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"A STUDY TO EVALUATE THE EFFECT OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING ANEMIA AND ITS PREVENTION AMONG ANTENATAL MOTHERS IN SELECTED COMMUNITY AREA AT AHMEDABAD CITY."

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ABSTRACT

Background

Anemia is the condition in which the blood doesn't have enough healthy red blood cells to carry adequate oxygen to tissues. According to WHO, Anemia in pregnancy is defined as the hemoglobin (Hb) concentration of less than 11g/dL. During pregnancy, plasma volume expands (maximum around 32 weeks) resulting in Hb dilution. For this reason, Hb level below 10g/dl at any time during pregnancy considered anemia. Hb level below 9 g/dL requires detailed investigations and appropriate treatment. According to NFHS-5 survey (2021), there is increase in prevalence of Anemia in pregnant women in India from NFHS-4 survey (2015-16) 50.4% to 52.2%. Anemia during pregnancy may cause pre-eclampsia, intercurrent infection, heart failure, preterm labor. During labor, anemia can cause uterine inertia, postpartum hemorrhage, cardiac failure and shock. There is increased chance of puerperal sepsis, subinvolution, poor lactation, puerperal venous thrombosis, pulmonary embolism and poor wound healing.

Aim

This study aim to evaluate the effect of structured teaching programme on knowledge regarding anemia and its prevention among antenatal mothers in selected community area at Ahmedabad city.

Objectives of the Study

1. To evaluate the pre-test knowledge regarding anemia and its prevention among antenatal mothers.
2. To evaluate the post-test knowledge regarding anemia and its prevention among antenatal mothers.
3. To evaluate the effectiveness of structured teaching programme on knowledge regarding anemia and its prevention among antenatal mothers.
4. To find out association between pre-test knowledge score with selected demographic variables among antenatal mothers.

Method

A Quantitative research approach with Quasi-experimental research design was used with one group pretest-post test design. The investigator used non-probability convenient sampling technique for selecting 60 samples. A structured knowledge questionnaire to assess the knowledge of the samples. The reliability of the structured knowledge questionnaire was determined by 'test-retest method' and using 'Karl parson's correlation co-efficient formula'. Descriptive and inferential statistics was used to analyze the data.

Result

Majority of the samples 25 (41.7%) belong to the age group of 26-30 years, 08 (13.3%) samples belong to the age group of 18-20 years, 19 (31.7%) belong to the age group of 21-25 years and 08(13.3%) belong to age group of 18-20 years. Majority of the samples 41 (68.3%) were primary / secondary school level, 14 (23.3%) were higher secondary school level and 05 (08.3%) were graduation and above level. Majority of the samples 41 (68.3%) were housewives and 19 (31.7%) were employee. Majority of the samples 44(73.3%) were vegetarian, 4 (6.7%) were non-vegetarian and 12(20%) were mixed. Majority of sample 32 (53.3%) having information from health care professionals, 21 (35%) having information from family members/friends and 07 (11.7%) having information from mass media (TV, radio, newspaper, mobile).

The mean pre-test knowledge score of samples regarding anemia and its prevention was 11.95, whereas mean post- test knowledge score was 20.90 with a mean difference of 8.95 and SD pretest was 2.80 and posttest was 2.65 The calculated 't' value 38.34 was greater than tabulated 't'=1.98 which was statistically proved at 0.05 level of significance. It revealed that the structured Teaching programme was effective in increasing knowledge among the Samples regarding anemia and it prevention.

The association between the pretest score and demographic variables was tested using the chi-square test. There was significant association found between pre-test knowledge score and demographic variables such as occupation and diet pattern. Thus it was concluded that there was significant association between pretest knowledge score and the selected demographic variables and also between pretest practice score and the selected demographic variables.

Conclusion

The analysis and interpretation of data collected from 60 samples, before and after administration of structured teaching programme in terms of knowledge regarding anemia and its prevention among antenatal mothers in selected community area at Ahmedabad city. The mean post-test knowledge score was higher than the mean pre-test knowledge score. Hence, it was proved that the structure teaching programme was effective in increasing knowledge regarding anemia and its prevention among antenatal mothers in selected community area at Ahmedabad city.

Key Words

Evaluate, effect, structured teaching programme, knowledge, anemia, community, antenatal mother

INTRODUCTION

Anemia is the condition in which the blood doesn't have enough healthy red blood cells to carry adequate oxygen to tissues. This leads to reduced oxygen flow to the body's organs. Having anemia make you feel tired and weak. You may have shortness of breath, dizziness, headache, or an irregular heartbeat. According to WHO, Anemia in pregnancy is defined as the hemoglobin (Hb) concentration of less than 11g/dL. Indian Council of Medical Research considers hemoglobin (Hb) level below 10.9 g/dl as cut off point for Anemia during pregnancy. During pregnancy, plasma volume expands (maximum around 32 weeks) resulting in Hb dilution. For this reason, Hb level below 10g/dl at any time during pregnancy considered anemia. Hb level below 9 g/dL requires detailed investigations and appropriate treatment.

Anemia in pregnancy could be due to malnutrition, blood loss, infections, chronic diseases, parasites and chronic hemolysis and several risk factors have been recognized as unhealthy lifestyle, multiple pregnancies, alcohol, smoking and menstrual disorders. Iron and folic acid deficiency are two most prevalent causes of anemia in pregnancy, with subsequent fetal complications as IUGR, low birth weight and prematurity, while vitamin deficiency is rare during pregnancy as it usually causes infertility. Anemia during pregnancy may cause pre-eclampsia, intercurrent infection, heart failure, preterm labor. During labor, anemia can cause uterine inertia, postpartum hemorrhage, cardiac failure and shock. There is increased chance of puerperal sepsis, subinvolution, poor lactation, puerperal venous thrombosis, pulmonary embolism and poor wound healing.

WHO/World Health Statistic Data (2016) shows that 40.1% of pregnant women worldwide were Anemic in 2016 and more than half of the women in India. India contributes to about 80% of the maternal death due to anemia. According to NFHS-5 survey (2021), there is increase in prevalence of Anemia in pregnant women in India from NFHS-4 survey (2015-16) 50.4% to 52.2%. Around 51.3% pregnant women in Gujarat have anemia. In Gujarat, the prevalence rate in age group between 20-30 years is 56.92% and in age group between 30-40 years is 60.25%. In that, Dang has highest 72.3% and Surat has lowest 39%. In Gandhinagar, 65.8% of women has anemia while in Ahmedabad the figure is 62.9%. and the rural (57.6%) has high incidence than urban (51.8%). There is need to aware
the antenatal mother about anemia and its prevention among antenatal mothers.

OBJECTIVES OF THE STUDY

1. To evaluate the pre-test knowledge regarding anemia and its prevention among antenatal mothers.
2. To evaluate the post-test knowledge regarding anemia and its prevention among antenatal mothers.
3. To evaluate the effectiveness of structured teaching programme on knowledge regarding anemia and its prevention among antenatal mothers.
4. To find out association between pre-test knowledge score with selected demographic variables among antenatal mothers.

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A Quantitative research approach with Quasi-experimental research design was used with one group pretest posttest design. The investigator used non-probability convenient sampling technique for selecting 60 samples. A structured knowledge questionnaire to assess the knowledge of the samples. The reliability of the structured knowledge questionnaire was determined by 'test-retest method' and using 'Karl parson's correlation co-efficient formula'. Descriptive and inferential statistics was used to analyze the data.

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Majority of the samples 25 (41.7%) belong to the age group of 26-30 years, 08 (13.3%) samples belong to the age group of 18-20 years, 19 (31.7%) belong to the age group of 21-25 years and 08 (13.3%) belong to age group of 18-20 years. Majority of the samples 41 (68.3%) were primary / secondary school level, 14 (23.3%) were higher secondary school level and 05 (08.3%) were graduation and above level. Majority of the samples 41 (68.3%) were housewives and 19 (31.7%) were employee. Majority of the samples 44(73.3%) were vegetarian, 4 (6.7%) were non-vegetarian and 12(20%) were mixed. Majority of sample 32 (53.3%) having information from health care professionals, 21 (35%) having information from family members/friends and 07 (11.7%) having information from mass media (TV, radio, newspaper, mobile).

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The association between the pretest score and demographic variables was tested using the chi-square test. There was significant association found between pre-test knowledge score and demographic variables such as occupation and diet pattern. Thus it was concluded that there was significant association between pretest knowledge score and the selected demographic variables and also between pretest practice score and the selected demographic variables.

Table 1: Analysis and Interpretation of Demographic Variables of the Samples

SR. NO	DEMOGRAPHIC VARIABLE	FREQUENCY	PERCENTAGE (%)
1	**Age**		
	A 18-20 years	08	13.3
	B 21-25 years	19	31.7
	C 26-30 years	25	41.7
	D 31-35 years	08	13.3
	TOTAL	**60**	**100.0**
2	**Educational status**		
	A Primary / secondary school level	41	68.3
	B Higher secondary school level	14	23.3
	C Graduation and above	05	08.3
	Total	**60**	**100.0**

3	**Occupation**		
	A Housewife	**41**	**68.3**
	B Employee	**19**	**31.7**
	TOTAL	**60**	**100.0**
4	**Diet pattern**		
	A Vegetarian	**44**	**73.3**
	B Non-vegetarian	**04**	**6.7**
	C Mixed	**12**	**20.0**
	TOTAL	**60**	**100.0**
5	**Source of information**		
	A Family members/ Friends	**21**	**35.0**
	B Mass media (TV, radio, newspaper, mobile)	**07**	**11.7**
	C Health care professionals	**32**	**53.3**
	TOTAL	**60**	**100.0**

Table 1 shows that the distribution of samples by **age**, majority of the samples 25 (41.7%) belong to the age group of 26-30 years, 08 (13.3%) samples belong to the age group of 18-20 years, 19 (31.7%) belong to the age group of 21-25 years and 08(13.3%) 18 years. Distribution of samples according to **educational status**, majority of the samples 41 (68.3%) were primary / secondary school level, 14 (23.3%) were higher secondary school level and 05 (08.3%) were graduation and above level. As regard **occupation**, majority of the samples 41 (68.3%) were housewives and 19 (31.7%) were employee. Distribution of samples according to **diet pattern**, majority of the samples 44(73.3%) were vegetarian, 4 (6.7%) were non-vegetarian and 12(20%) were mixed. As about **source of information**, majority of sample 32 (53.3%) having information from health care professionals, 21 (35%) having information from family members/friends and 07 (11.7%) having information from mass media (TV, radio, newspaper, mobile).

Figure: 1.1 Bar graph Showing the Age Distribution of the Samples

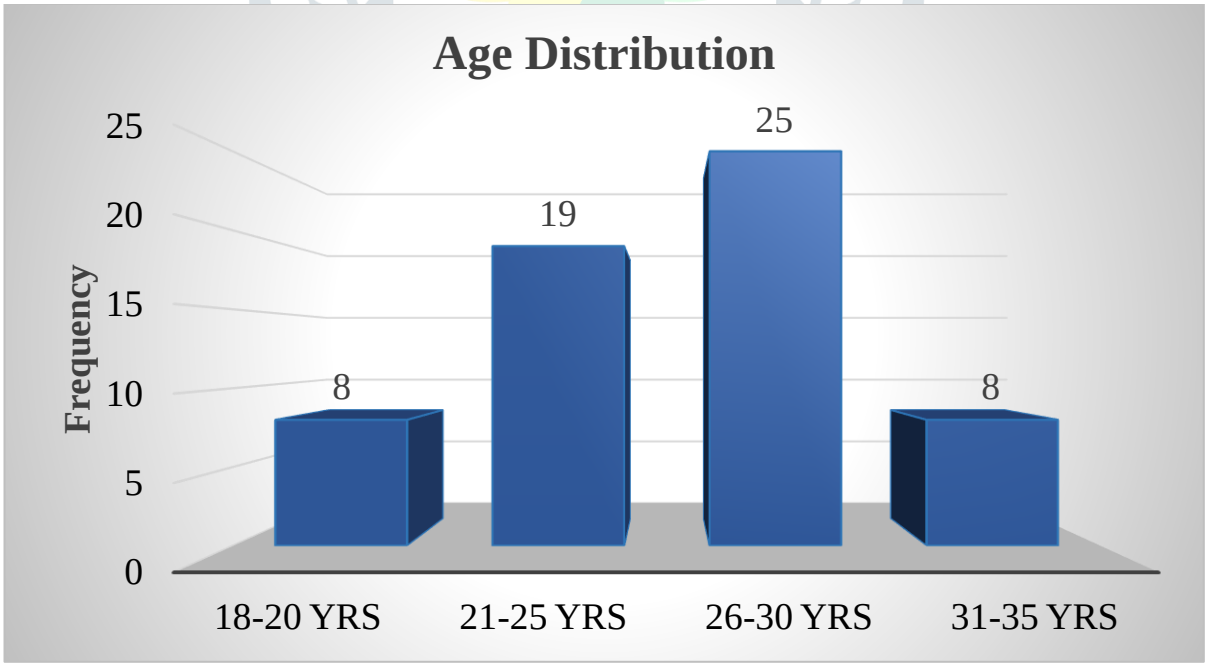

Figure: 1.2 Bar graph Showing the Educational Status of the Samples

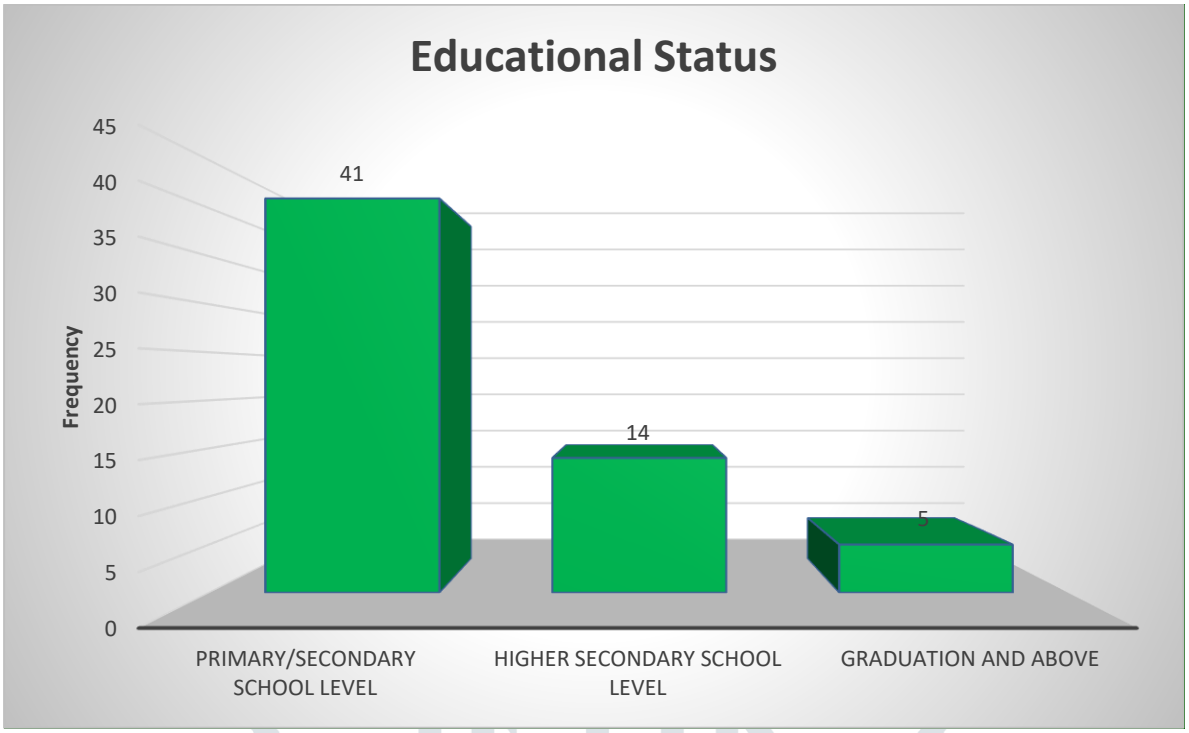

Figure: 1.3 Bar graph Showing the occupation of the Samples.

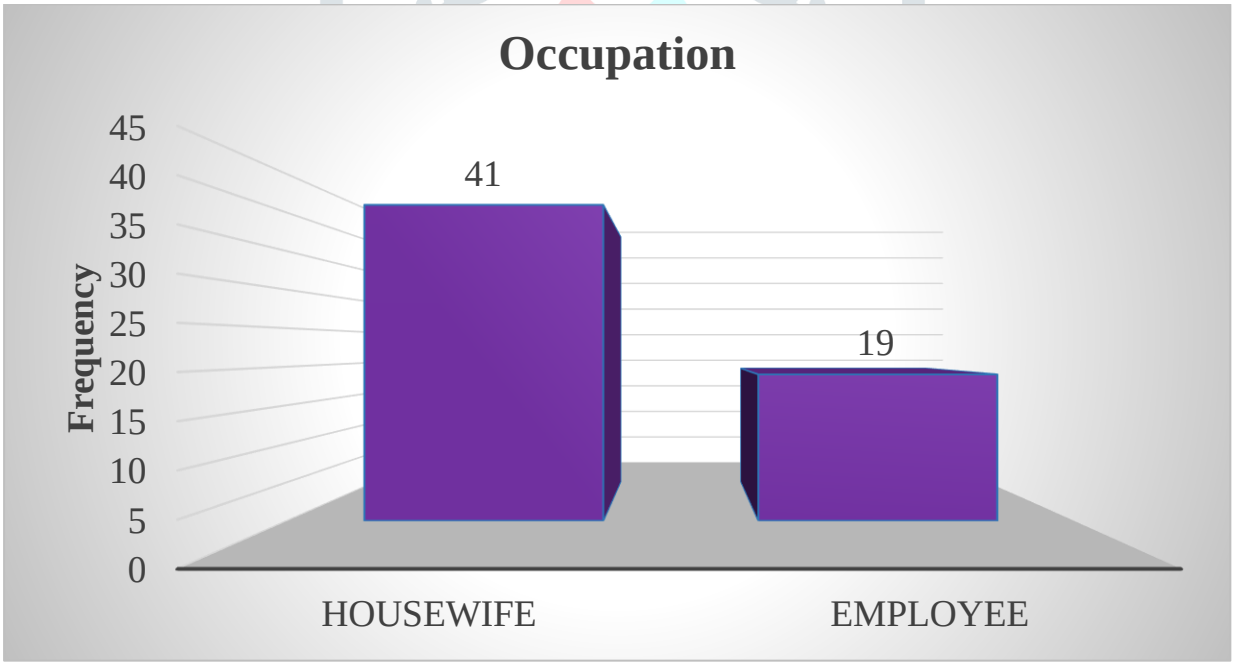

Figure: 1.4 Bar Graph Showing the diet pattern of the samples

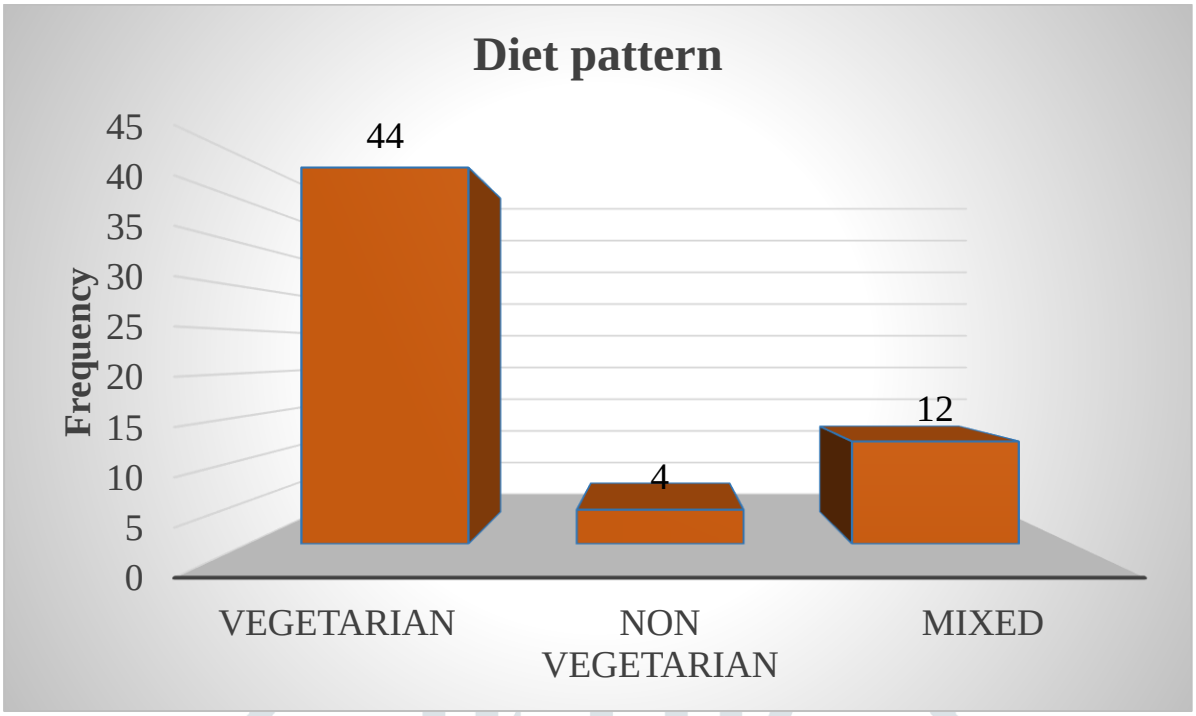

Figure: 1.5 Bar Graph Showing the source of information of the samples

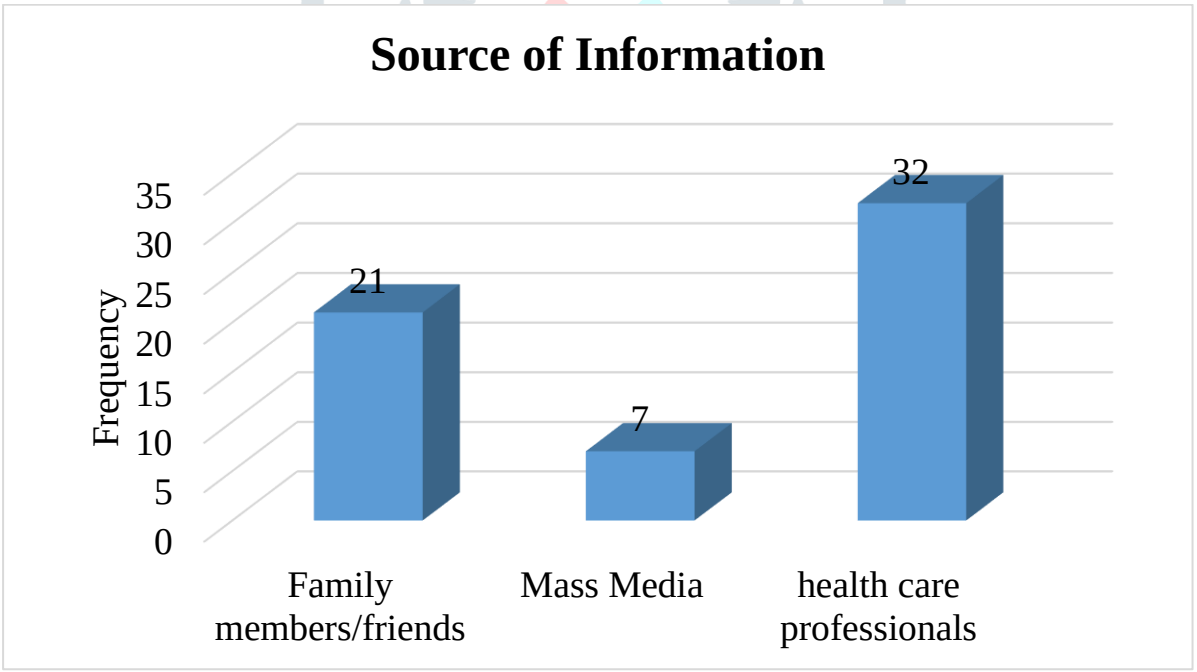

Table-2: Analysis And Interpretation of the Data Related to the Knowledge of the Samples Before And After Administration of the Structured Teaching Programme.

		Pre Test			Post Test				
ITEM	**SCORE**	**MEAN**	**SD**	**MEAN %**	**MEAN**	**SD**	**MEAN%**	**MEAN DIFF**	**% GAIN**
RELATED TO DISEASE AND TYPE	4	1.80	0.61	45.00	2.80	0.82	70.00	1.00	25.00
CLINICAL FEATURES OF ANEMIA IN PREGNANCY	1	0.55	0.50	55.00	0.93	0.25	93.00	0.38	38.00
CAUSES OF ANEMIA IN PREGNANCY	4	1.32	0.81	33.00	2.77	0.93	69.25	1.45	36.25
CONSEQUENCES OF ANEMIA IN PREGNANCY	2	0.28	0.61	14.00	1.48	0.62	74.00	1.20	60.00
DIAGNOSTIC EVALUATION	1	0.83	0.38	83.00	1.00	0.00	100.00	0.17	17.00
MANEGEMENT OF ANEMIA IN PREGNANCY	4	1.55	0.70	38.75	2.13	0.95	53.25	0.58	14.50
PREVENTION OF ANEMIA IN PREGNANCY	14	5.62	1.74	40.14	9.78	1.57	69.86	4.16	29.71
Total	**30**	**11.95**	**2.81**	**39.83**	**20.90**	**2.65**	**69.67**	**8.95**	**29.83**

Table-2: shows that the mean pre-test knowledge score of **related to disease and type** was 1.80, SD was 0.61 and the mean post-test score was 2.80 and SD was 0.82 with a mean difference of 1.00. The mean pre-test knowledge score of **clinical features of anemia in pregnancy** was 0.55, SD was 0.50 and the mean post-test score was 0.93 and SD was 0.25 with a mean difference of 0.38. The mean pre-test knowledge score of **causes of anemia in pregnancy** was 1.32, SD was 0.81 and the mean post-test score was 2.77 and SD was 0.93 with a mean difference of 1.45. The mean pre-test knowledge score of the **consequences of anemia in pregnancy of anemia in pregnancy** was 0.28, SD was 0.61 and the mean post-test score was 1.48 and SD was 0.62 with a mean difference of 1.20. The mean pre-test knowledge score of **diagnostic evaluation of anemia in pregnancy** was 0.83, SD was 0.38 and the mean post-test score was 1.00 and SD was 0.00 with a mean difference of 0.17. The mean pre- test knowledge score of **management of anemia in pregnancy** was 1.55, SD was 0.70 and the mean post-test score was 2.13 and SD was 0.95 with a mean difference of .58. The mean pre- test knowledge score of **prevention of anemia in pregnancy** was 5.62, SD was 1.74 and the mean post-test score was 9.78 and SD was 1.57 with a mean difference of 4.16.

The above table shows that the percentage gain in the area related to disease and type was 25.00. In the area related to clinical features of anemia in pregnancy was 38.00. In the area related to causes of anemia in pregnancy was 36.25. In the area related to consequences of anemia in pregnancy was 60.00. In the area related to diagnostic evaluation of anemia in pregnancy was 17.00. In the area related to the management of anemia in pregnancy was 14.50. In the area related to the prevention of anemia in pregnancy was 29.71.

So, the investigator concludes that there was a significant increase in the mean post-test knowledge score (20.90) as compared to the mean pre-test knowledge score (11.95) of samples after the administration of the Structured Teaching Programme.

Figure: 2 Bar Graph Showing the Distribution of Area Vise Mean Knowledge Score

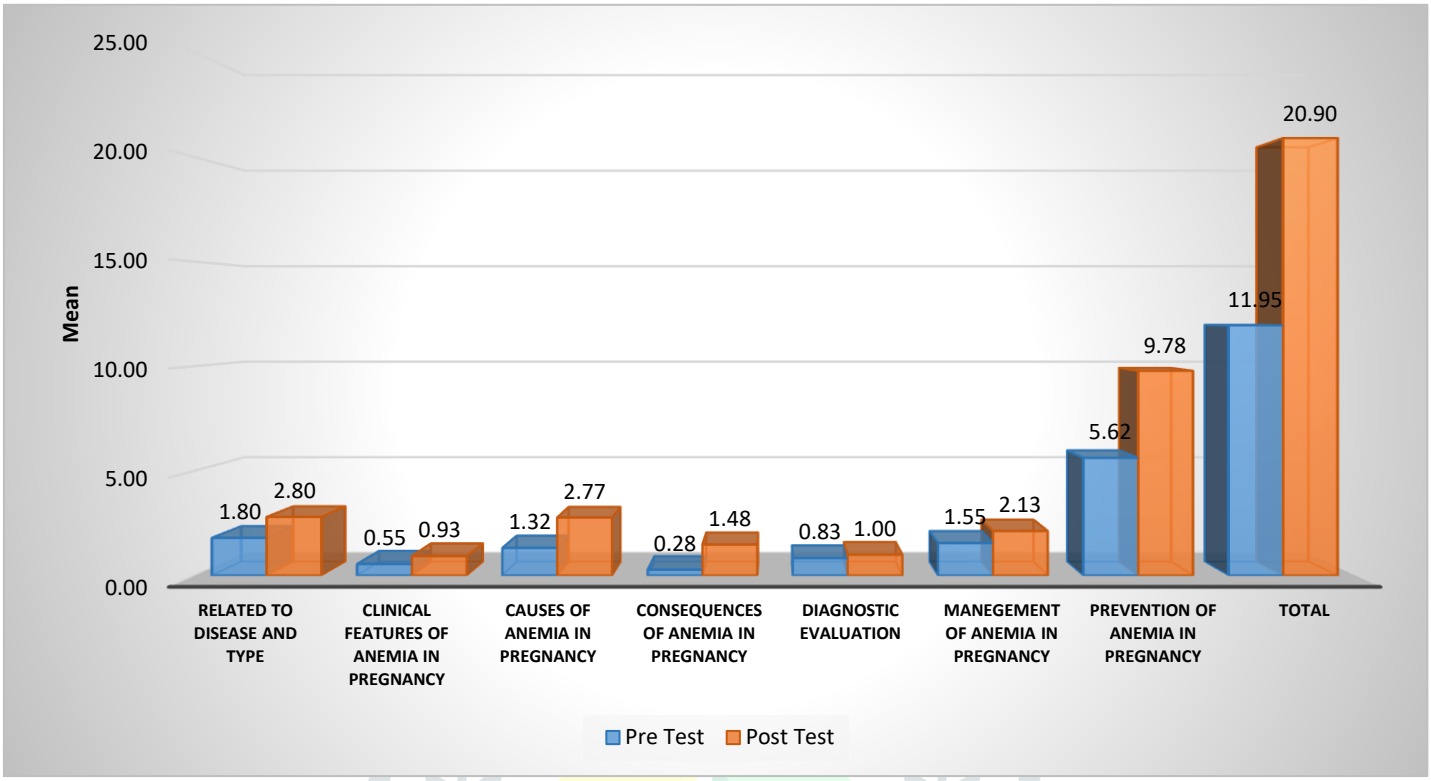

Table-3: Analysis And Interpretation Of The Data Related To Knowledge To Evaluate The Effect Of Structured Teaching Programme In Terms Of Knowledge Regarding Anemia and its Prevention Among Antenatal Mothers In Selected Community area At Ahmedabad City.

LEVEL OF KNOWLEDGE	PRE-TEST		POST-TEST	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
POOR (1-10)	18	30	00	00
AVERAGE (11-20)	42	70	26	43.3
GOOD (21-30)	00	00	34	56.7
TOTAL	60	100	60	100

Table: 3 shows the the total 42(70%) of the samples had Average, 18(30%) of the sample had Poor and 0(0%) sample had good knowledge in pre-test knowledge score. Whereas 26(43.3%) samples had Average, 34(56.7%) samples had Good, and 0(0%) samples had poor knowledge in post-test knowledge score regarding anemia in

pregnancy and its prevention. Thus, the researcher concluded that a Structured Teaching Programme was effective in gaining knowledge regarding anemia in pregnancy and its prevention.

Figure:3.1 Bar Graph Showing The Distribution Of Pre-Test Level Of Knowledge Score.

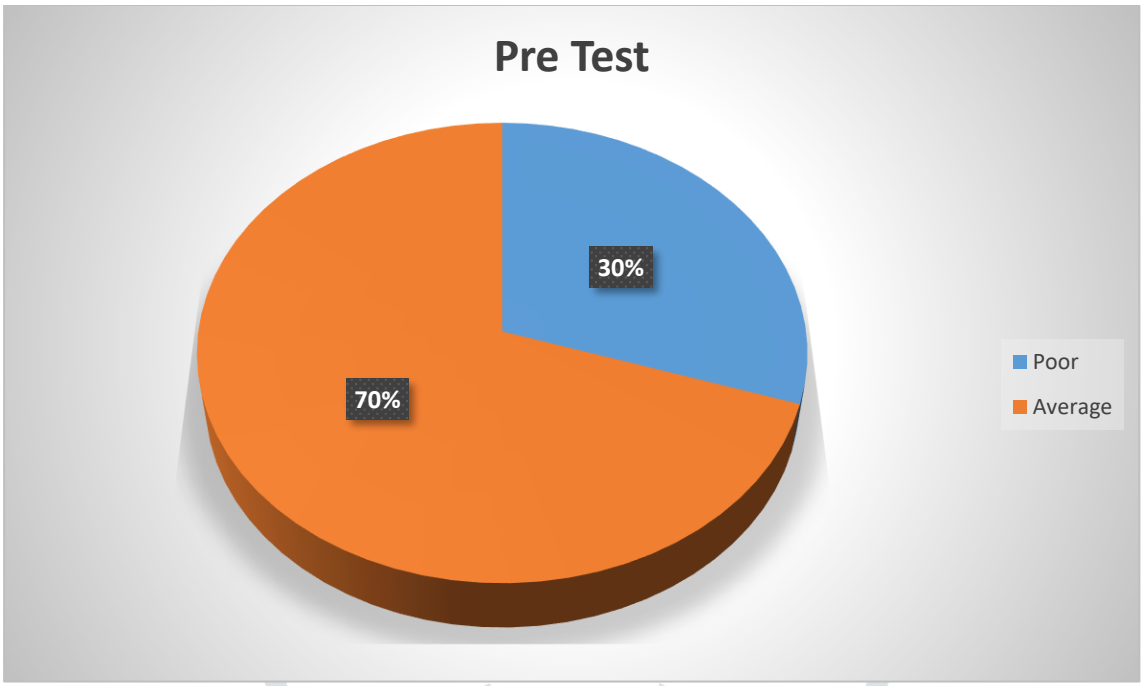

Figure:3.2 Bar Graph Showing The Distribution Of Post-Test Level Of Knowledge Score.

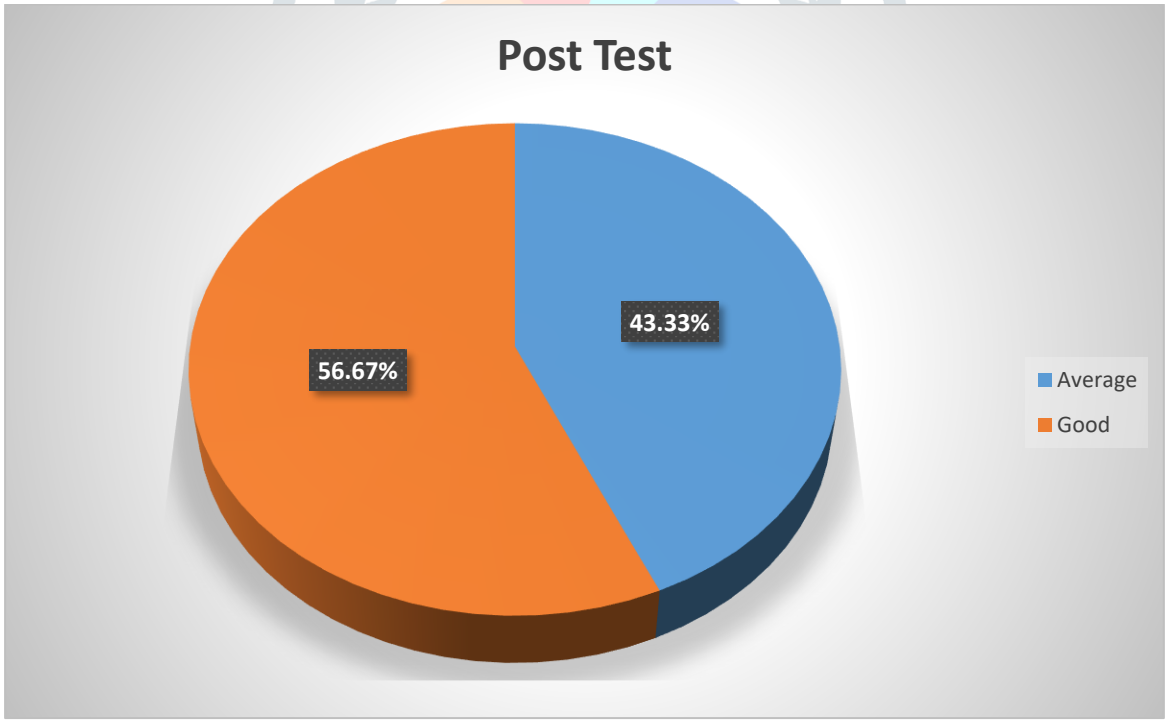

Table: 4 Mean, Mean Difference, Standard Deviation (SD) And 'T' Test Value Of The Pre-Test And Post-Test Knowledge Score Of The Samples.

Knowledge test	Mean	Standard Deviation	t	DF	Table Value	Sig/Non-Sig
PRE-TEST TOTAL SCORE	11.95	2.80	38.34	59	1.98	Sig
POST-TEST TOTAL SCORE	20.90	2.65				

Table: 4 shows the comparison between pre-test and post-test knowledge scores obtained by the respondents regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city. The mean pre-test score was 11.95 and the mean post-test score was 20.90. The mean difference between pre-test and post-test knowledge scores is 8.95. The table was also showing that the standard deviation (SD) of mean difference for pre-test is 2.80 and for post-test is 2.65. The "t" test value is 38.34 and the tabulated"t" value is 1.98 at a 0.05 level of significance. The Bar graph reveals that the mean post-test knowledge score was significantly higher than the mean pre-test knowledge score. The calculated "t" value was greater than the tabulated "t" value. Therefore, the null hypothesis H0 was rejected and research hypothesis H1 was accepted and it revealsthat a Structured Teaching Programme was effective in terms of knowledge among the samples. The Researcher concludes that there was a significant increase in the mean post-test knowledge score as compared to the mean pre-test knowledge score after the administration of a Structured Teaching Programme.

Figure:4 Bar Graph Showing The Distribution of Pre-Test And Post-Test Level of Knowledge Score

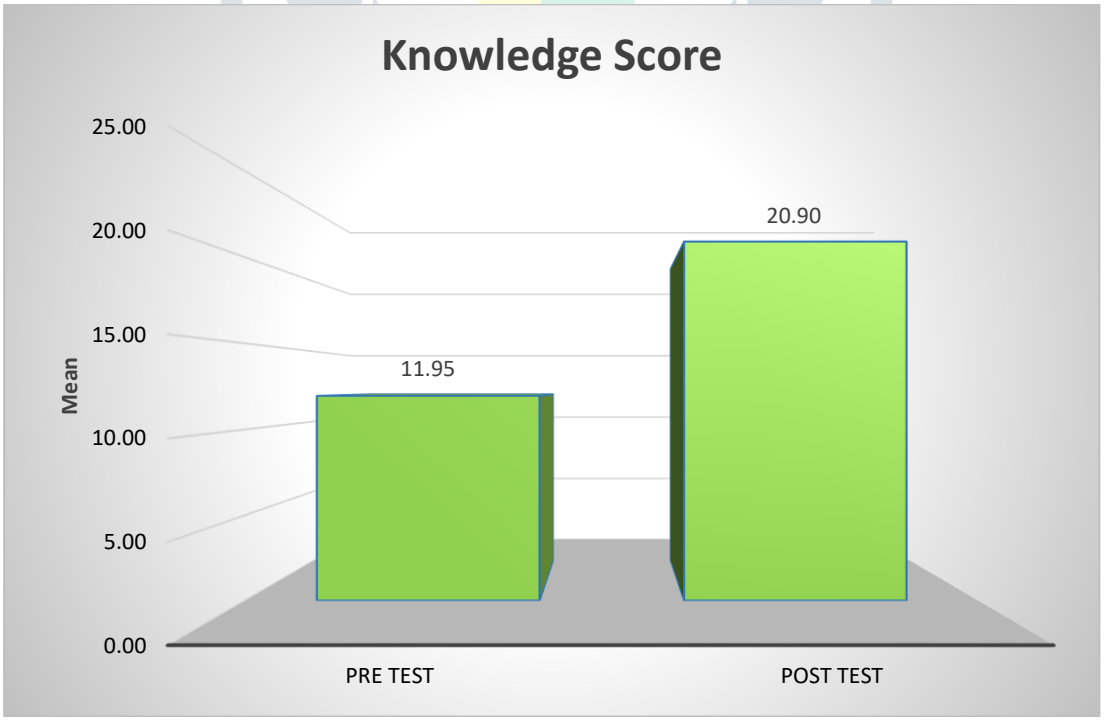

Table: 5 Analyses And Interpretation Of The Data Related To Association Of Demographic Variables With Pre-Test Score Knowledge.

Demographic variables		Pre Test		Total	Fishers Chi Square	DF	Table value	Sig/ Non-sig
		Average	Poor					
Age	18-20 years	4	4	8	2.51	3	7.82	Non Sig
	21-25 years	15	4	19				
	26-30 years	18	7	25				
	31-35 years	5	3	8				
Educational status	Primary/secondary school level	30	11	41	1.519	2	5.99	Non Sig
	Higher secondary school level	8	6	14				
	Graduation and above	4	1	5				
Occupation	Housewife	21	14	41	4.00	1	3.84	Sig
	Employee	21	4	19				
Diet pattern	vegetarian	25	12	44	6.005	2	5.99	Sig
	Non-Vegetarian	10	0	4				
	Mixed	7	6	12				
Source of Information	Family members/friends	15	6	21	0.625	2	5.99	Non Sig
	Mass Media	4	3	7				
	Health care professionals	23	9	32				

Table: 5 shows **Age** group with the pre-test knowledge scores, the calculated value of chi-square 2.51 was less than 7.82, the table value of chi-square at the 3 degree of freedom and 0.05 level of significance. Therefore, age was non-significant for the knowledge of the samples. Under the **Educational status** of samples with pre-test knowledge scores, the calculated value of chi-square 1.519 was less than 5.99 the table value of chi-square at the 2 degree of freedom and 0.05 level of significance. Therefore,the Educational status of samples was non-significant for the knowledge of the samples. Under the **Occupation** of samples with pre-test knowledge scores, the calculated valueof chi-square 4.00 was more than 3.84 the table value of chi-square at the 1 degree of freedom and 0.05 level of significance. Therefore, the occupation of samples was significant for the knowledge of the samples. Under **diet pattern** of samples with pre-test knowledge scores, the calculated value of chi- square 6.005 was more than 5.99 the table value of chi-square at the 2 degree of freedom and 0.05 level of significance. Therefore, from **diet pattern** of samples was significant for the knowledge of the samples. Under **source of information** of samples with pre-test knowledge scores, the calculated value of chi- square 0.625 was less than 5.99 the table value of chi-square at the 2 degree of freedom and 0.05 level of significance. Therefore, from source of information of samples was non-significant for the knowledge of the samples.

DISCUSSION

The present study was conducted to evaluate the effect of a structured teaching programme on knowledge regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city. The researcher collected the samples by the Non-Probability convenience Sampling Technique. The researcher collected the data by using a structured knowledge questionnaire to evaluate the knowledge regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city.

The researcher using a quasi-experimental, one group pre-test post-test design. The tool consists of demographic variables and a structured knowledge questionnaire to evaluate the knowledge regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city. The main study was conducted from 01-02-2022 to 11-02-2022, on 60 antenatal mothers in selected community area at Ahmedabad city, and who met the inclusion criteria, who were selected by Non- Probability convenience sampling technique. After the selection of samples, the level of knowledge was evaluated by using a structured knowledge questionnaire.

The researcher introduced herself to the participants and objectives were explained and informed consent was taken. The study group is selected and then a pre-test with the help of a structured knowledge questionnaire regarding anemia in pregnancy and its prevention was conducted. On the same day as an intervention, a structured teaching programme was administered regarding anemia in pregnancy to the study group. Then after on the 7th day post- test was conducted using the same structured knowledge questionnaire.

The data identified from the present study shows that the mean pre-test knowledge score 11.95. These findings indicate the need to develop a structured teaching Programme. In the present study, the investigator has developed a structured teaching Programme and administered to the antenatal mothers in selected community area at Ahmedabad city, to improve their knowledge. After administration of structured teaching programme mean post-test knowledge score 20.90.

CONCLUSION

Analysis and interpretation of data collected from 60 samples, before and after administration of a Structured Teaching Programme in terms of knowledge regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city. Descriptive and inferential statistical methods were used to analyze the data. The mean post-test knowledge score was higher than the mean pre-test knowledge score. The Significance of the difference between pre-test and post knowledge scores was statistically tested using paired “t” test and it was found significant.

Hence it was proved that the Structured Teaching Programme was effective in increasing knowledge regarding anemia in pregnancy and its prevention among antenatal mothers in selected community area at Ahmedabad city. There was a significant association between occupation, diet pattern and pre-test knowledge score. Hence it was concluded that there is no significant association between demographic variable age, educational status and source of information and pre-test knowledge score.

ACKNOWLEDGEMENT

I would like to thank, Dr. Sunitha Mathew (guide cum principal), Ms. Chandrika Dharajiya(class coordinator), staff of JG college of nursing for them constant guidance, suggestions, immense knowledge andplenty experience have encouraged me in all the time of my academic research and daily life. They advised me suchgreat research topic. They are supportive and encouraging right from the conception stage to its final report. Words are insufficient to offer thanks for them invaluable advice, continuous support, genuine concern and constructive suggestions. It is indeed a great and privileges to be supported and guided by them.

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