



**“A STUDY TO ASSESS THE EFFECTIVENESS
OF STRUCTURED TEACHING PROGRAMME
ON KNOWLEDGE REGARDING CAUSES AND
PREVALENCE OF ANEMIA AMONG MOTHER
OF PREADOLESCENCE GIRLS FROM
SELECTED URBAN AREAS OF BHOPAL,
[M.P.]”**

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Abstract:

BACKGROUND: Anemia is a serious public health problem. It is the second-commonest contributing factor to years lost by preadolescents to disability and death. Targeting preadolescent girls will allow a window of

opportunity to correct their nutritional health and improve their obstetric outcomes. Studies in India have reported varying prevalence rates of anemia among preadolescent girls. Hence, we did a systematic review and meta-analysis of community-based studies to obtain a comprehensive pooled estimate of the prevalence of anemia among preadolescent girls in India.

MATERIAL AND METHODS - The present study was conducted at Adampur Nagar, Bhopal. Total population of this area was 3368. A sample is a subset of a population selected to participate in the research study (**Polit and Hungler 1999**).

In the present study purposive sampling technique was used to select the sample. Purposive sampling is a type of non-probability sampling. The limited time and availability of the subjects as per the sampling criteria made the investigator to adopt the present sampling technique. In the present study, the sample consisted of 30 Mothers of Preadolescent girls who had living in Adampur Nagar, Bhopal, M.P

RESULT Pre-test most of the mothers 20 (66.67%) had average knowledge score, 10 (33.33%) subjects had poor knowledge score and no one had good knowledge regarding Causes and prevalence of Anemia in Preadolescent girls. In post test 23(76.67%) had good knowledge, 7(23.33%) had average knowledge score and there was none with poor knowledge regarding Causes and prevalence of Anemia in Preadolescent girls in Adampur Nagar, Bhopal

CONCLUSION- The aim of the study was to evaluate the effectiveness of structured teaching program regarding Causes and prevalence of Anemia in Preadolescent girls in Adampur Nagar, Bhopal were selected. Structured teaching was given and post test was taken after seven days.

KEY WORD: Anemia, Mother's of Preadolescent Girls, Structured Teaching Program, Knowledge.

I INTRODUCTION

Iron deficiency anemia is prevalent worldwide. Iron has a major role in human body. According to previous study iron is needed for various functions. Oxygen transport, DNA synthesis, and electron transport are few examples. According to a study report by WHO, iron deficiency is nearly 2.5 times more prevalent in comparison to IDA. WHO estimates nearly two billion people suffering from anemia and approximately 50% of these cases are due to iron deficiency. IDA, most severe stage of iron deficiency (defined as a low hemoglobin concentration with iron deficiency) was found in 3% of the adolescent females in the United State of America.

Preadolescence is a stage of **human development** following **middle childhood** and preceding **adolescence**. It commonly ends with the beginning of **puberty**. Preadolescence is commonly defined as ages 9–12 ending with the major onset of **puberty**. It may also be defined as simply the 2-year period before the major onset of **puberty**. Preadolescence can bring its own challenges and **anxieties**. Although IDA occurs at all age and

involves both the sexes, adolescent girls are more prone to it. The WHO defined Preadolescent as the population of 9-14 years of age . The highest prevalence is between the ages of 10 and 14 years when requirements are at peak. More than 50% girls in this age group have been reported to be anemic [11-14]. The requirement for iron in fact doubles during adolescence as compared to younger age. There is a significant increase in the requirement of iron from preadolescent level of approximately 0.7-0.9 mg iron per day to as much as 1.37-1.88 mg per day in Preadolescent boys and 1.40-3.27 in Preadolescent girls .In India, the prevalence of anemia in Preadolescent girls is 56% (64 million girls) . Prevalence of anemia varies in different parts of the world, different states of a country and even in different districts of a state. Preadolescent girls are more vulnerable to iron deficiency and anemia due to increased requirement of iron which in turn is caused by abrupt increase in lean body mass and total blood volume, and menstrual blood loss.

II. MATERIAL AND METHODS

The present study was conducted at Adampur Nagar, Bhopal. Total population of this area was 3368.

SAMPLE-

A sample is a subset of a population selected to participate in the research study (**Polit and Hungler 1999**).

SAMPLING TECHNIQUE-

In the present study purposive sampling technique was used to select the sample. Purposive sampling is a type of non-probability sampling.

The limited time and availability of the subjects as per the sampling criteria made the investigator to adopt the present sampling technique.

SAMPLE SIZE In the present study, the sample consisted of 30 mothers of Preadolescent girls living in Adampur Nagar, Bhopal.

SAMPLE SELECTION CRITERIA

The sample frame structured by the researcher included the following criteria:

Inclusion criteria -

- (a) Mothers of preadolescent girls living in adampur nagar, Bhopal
- (b) Mothers who were willing to participate in the study
- (c) Mothers who could understand and respond in Hindi and English.

(d) Mothers who were present in Adampur Nagar, during data collection.

Exclusion criteria

- (a) Mothers who had any chronic psychiatric problem.
- (b) Mothers who were not willing to participate in the study.
- (c) Mothers who were not present in Adampur Nagar, during data collection.

RESEARCH METHODOLOGY Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. The present study aimed to assess the effectiveness of structured teaching program me on the knowledge regarding Causes and prevalence of Anemia in Preadolescent girls in Adampur Nagar, Bhopal The chapter dealt with the research approach, research design, variables under study, population and sample, sampling technique, criteria for sample selection, and description of tools, pilot study, data collection process and plan for data analysis.

RESEARCH APPROACH- A research approach tells the researcher as to what data to collect and how to analyze them. It is the overall plan or blueprint chosen to carryout the study. It also suggests the possible conclusion to be drawn from the data.

Pre experimental research approach (which is a subject of quasi-experimental Research) using the one group pre-test, post-test design was adopted for the study. In this one group pre-test and post-test design was used. Only one group was observed before and after the manipulation or intervention. In this study the investigator aimed at finding the effectiveness of structured teaching on the knowledge regarding Causes and prevalence of Anemia in Mother's of Preadolescent girls at selected area Adampur , Bhopal.

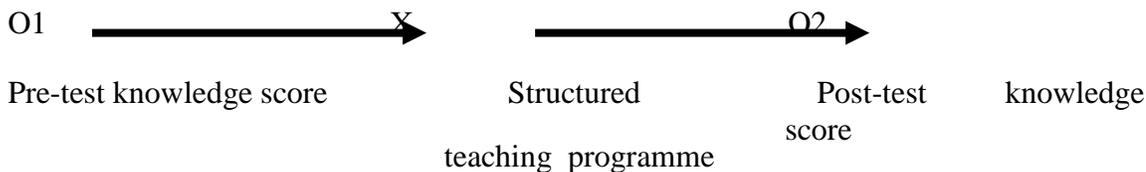
RESEARCH DESIGN

“A research design is the arrangement of conditions for the collection and analysis of data in a Manner that aims to combine relevance to the research purpose with economy in procedure.”

(Kothari. C.R. 2006)³

The research design (**Figure-2**) selected for this study was one group pre-test post-test design to measure the gain in knowledge scores among mothers of preadolescent girls who were given structured teaching program. So this was represented as-

- O₁ - Pre-test
- X - Implementation of structured teaching program
- O₂ - Post-test



b The investigator introduced a base measure before and after a structured teaching program, which was depicted as O₁ and O₂ respectively. In the present study the measure was knowledge regarding causes and prevalence of anemia among mothers of preadolescents girls.. The intervention was the structured teaching program, which was depicted as X.

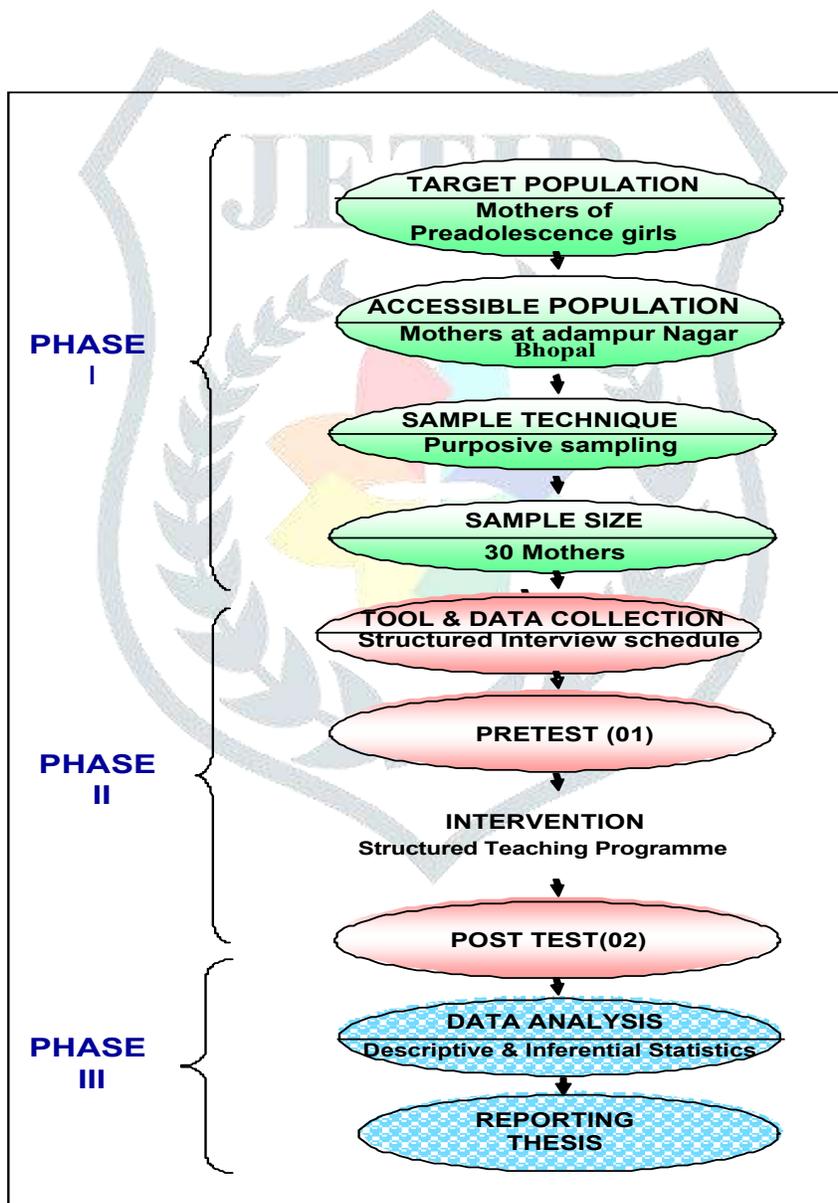


Figure – 1: Conceptual framework, Modified Kings Goal Attainment Theory

The schematic representation of the study design presented showed that the study was conducted in three phases.

Phase-I

The target population selected for this study was Mothers of preadolescence girls living in urban slums. The accessible population for the study was mothers of preadolescence at selected urban slum of Adampur Nagar, Bhopal . By purposive sampling technique 30 mothers were selected and structured interview schedule was prepared to assess knowledge of mothers. Lesson plan was made based on the review of literature, personal experience of the investigator and existing need of teaching on causes and prevalence of anemia in preadolescence.

Knowledge questionnaire and content of structured teaching program were prepared based on blue print. Tool was validated by experts and reliability was established by Split half method.

Phase-II

Pre- test was conducted by administration of structured interview schedule to measure the knowledge of Mothers of preadolescence girls on first day regarding causes and prevalence of anemia in preadolescence. Implementation or administration of structured teaching was done just after the pre- test on first day itself. Structured teaching on causes and prevalence of anemia was discussed and explained to the mothers with the help of charts. Post -test was conducted using the same tool on the seventh day.

Phase-III

Analysis and interpretation of collected data, was done to find association of pre-test knowledge scores with the sample characteristics and compare the pre–test knowledge score with the post - test.. Reporting of the thesis.

VARIABLES UNDER STUDY

A concept which can take on different quantitative values is called variable (**Kothari. C.R. 2006**)³.

Two types of variables were identified in this study.

- Independent variables
- Dependent variable

Independent variable - The independent variable is manipulated by the researcher. The independent variable is the presumed cause for the resulting effect on the dependent variable. In the present study the independent variables were age, type of family, educational status, Religion , monthly family income, occupation of mother, Health Status and refuse disposal .

Dependent variables- The dependent variable usually is the variable that the researcher is interested in understanding, explaining or predicting. It is the outcome variable, which is measured or observed following the intervention of the independent variable. In the present study, gain in knowledge regarding Causes and prevalence of Anemia in Mother’s of Preadolescent girls in Adampur Nagar, Bhopal was dependent variable.

SETTING OF THE STUDY-

Settings are the physical location and conditions in which the data collection takes place in a study. (**Polit and Hungler 1999**)⁶.

The present study was conducted at Adampur Nagar, Bhopal Total population of this area was 2168.

THE POPULATION

A population is the aggregation of elements showing some common set of criteria. (Basavanthappa, B.T 2003)¹.

Target Population:

In the present study the target population was Mother's of preadolescents girls living in urban slums of Bhopal.

Accessible Population:

DATA ANALYSIS AND INTERPRETATION

This Chapter dealt with the analysis and interpretation of data collected from 30 mothers to determine the effectiveness of structured teaching on the knowledge regarding Causes and prevalence of Anemia in Mother's of Preadolescent girls in Adampur Nagar, Bhopal.

Analysis of data can be defined as the systematic organization and synthesis of research and testing of research hypothesis using those data that has been analyzed and interpreted in the light of objectives and hypothesis of the study by using descriptive and inferential statistics (paired 't' test and chi square test).

OBJECTIVES-

- 1) To assess the knowledge of mothers of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescents girls.
- 2) To find association between pretest knowledge scores and selected demographic variables.
- 3) To evaluate the effectiveness of structured teaching program on knowledge of Mothers of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescent girls

HYPOTHESES

H₁ There will be significant association between pretest knowledge scores and selected demographic variables at the level of $p < 0.05$.

H₂ The mean posttest knowledge score of the mothers of Preadolscent Girls will be significantly higher than the mean pre test knowledge score after the administration of structured teaching program at the level of $p < 0$.

III RESULT**SECTION I SOCIO-DEMOGRAPHIC VARIABLES**

Table-1 (a)-Frequency and Percentage distribution of selected demographic variables

N=30

| Selected demographic variables | Frequency (n) | Percentage (%) |
|--|---------------|----------------|
| 1. Age of mother in years: | | |
| a < 20 | 1 | 3.33 |
| b 21-30 | 29 | 96.67 |
| c 31-40 | 0 | 0 |
| d >40 | 0 | 0 |
| 2. Type of family: | | |
| a Nuclear. | 4 | 13.33 |
| b Joint. | 26 | 86.67 |
| 3. Educational Status: | | |
| a Illiterate. | 4 | 13.33 |
| b Primary Education. | 2 | 6.67 |
| c Higher Education. | 23 | 76.67 |
| d Graduate and above | 1 | 3.33 |
| 4. Monthly family Income in rupees: | | |
| a <2500. | 15 | 50 |
| b 2501-5000. | 11 | 36.67 |
| c 5001-7500. | 3 | 10 |
| d >7500 | 1 | 3.33 |
| 5. Occupation of mother: | | |
| a Housewife. | 26 | 86.67 |
| b Employed | 1 | 3.33 |
| c Self Employed | 3 | 10 |
| d Laborer/Housemaid | 0 | 0 |

Data presented in Table 1(a) revealed that in this study maximum mothers 29 (96.67 %) belonged to the age group of 21-30 years and no one was above 30 years (**Fig-4**). Out of 30 mothers, 26 (86.67%) belonged to joint family and 4 (13.33%) belonged to nuclear family (**Fig-5**). Most of mothers 23 (76.67%) had education up to high school, 4 (13.33%) were illiterate, 2 (6.67%) had primary education and only 1 (3.33%) was graduate and above (**Fig-6**). The monthly income of 15 (50%) families was <2500 Rs/month, 11(36.67%) had between 2501-5000, 3 (10%) had between 5001-7500 and 1 (3.33%) had >7500 (**Fig-7**). 6 (86.67%) of mothers were housewives, 3 (10%) were self-employed and 1 (3.33%) were employed (**Fig-8**).

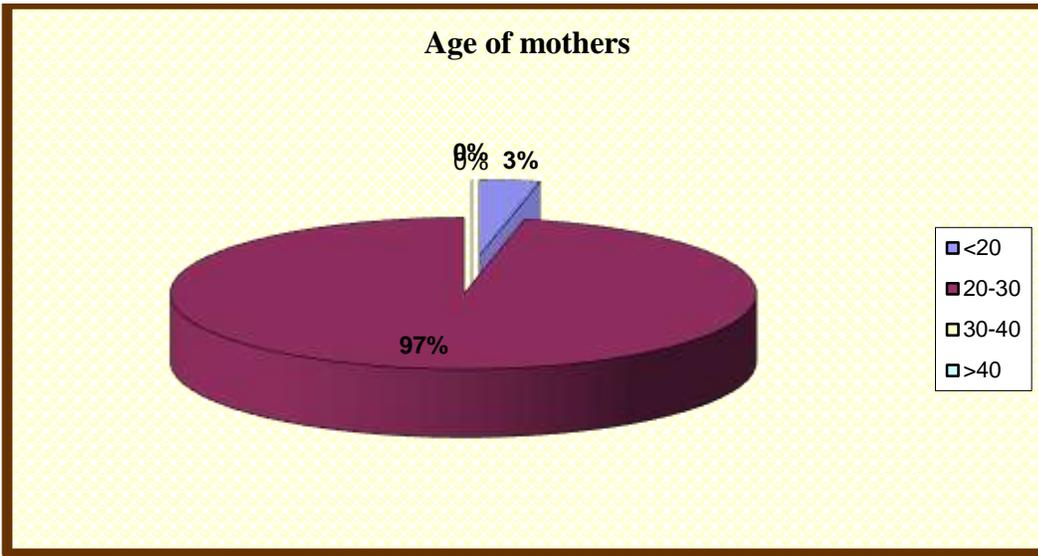


Figure No. 4– Pie diagram showing percentage distribution according to the age of mothers

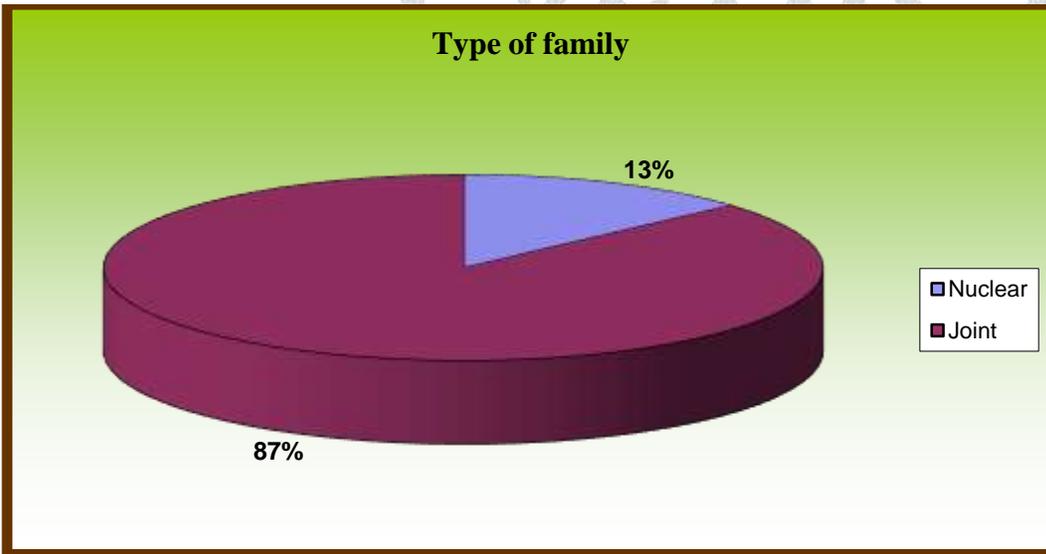


Figure No. 5 – Pie diagram showing percentage distribution according to the type of family.

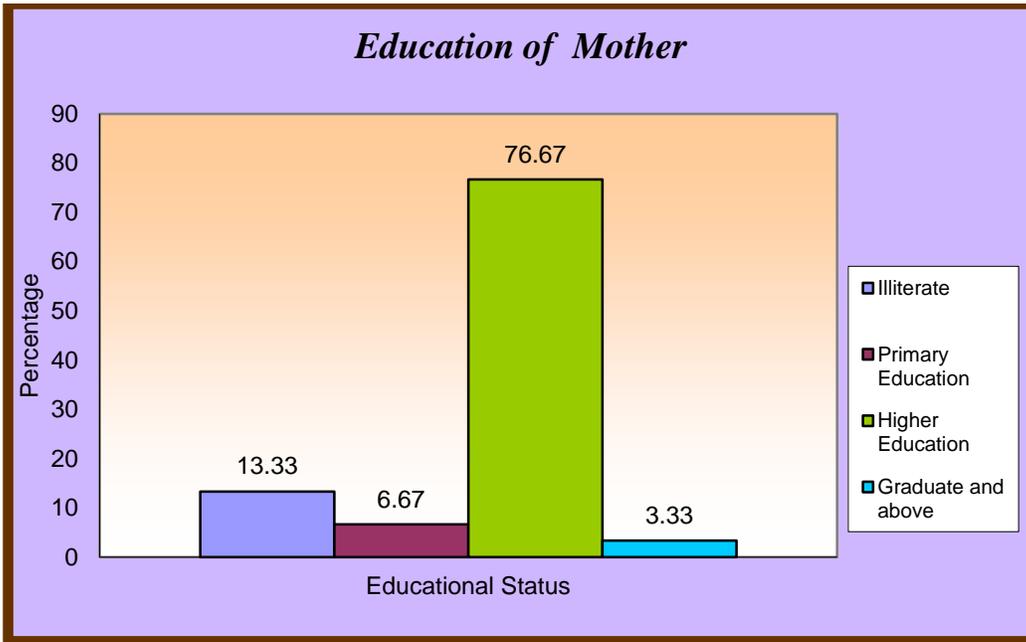


Figure No. 6 –Bar diagram showing percentage distribution according to the educational status

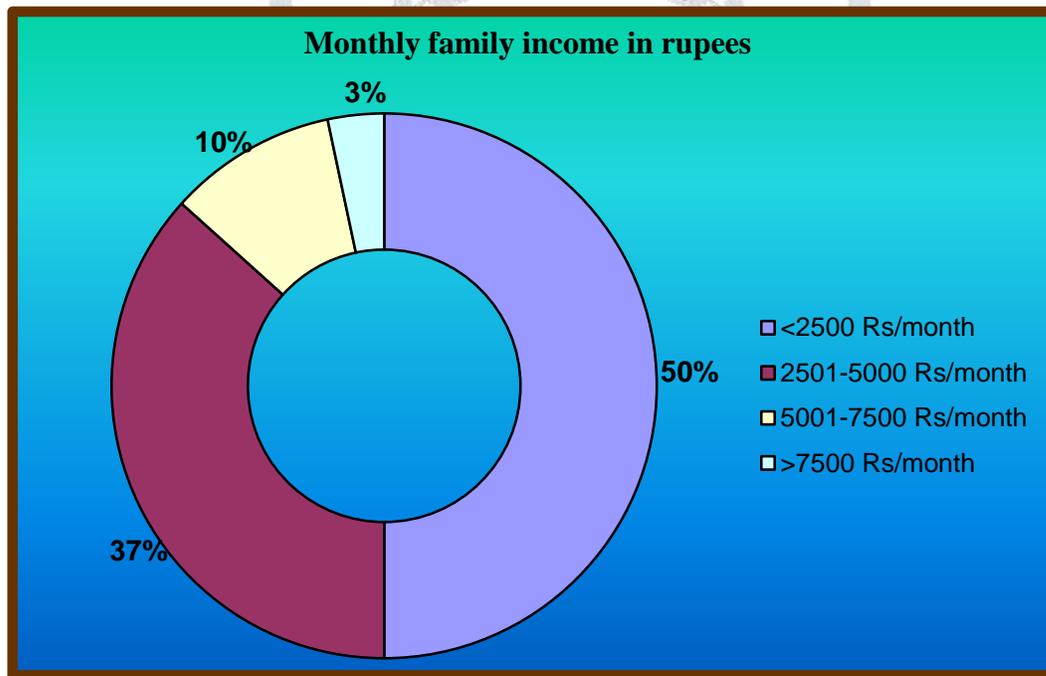


Figure No. 7 –Doughnut showing percentage distribution according to the monthly family income in rupees

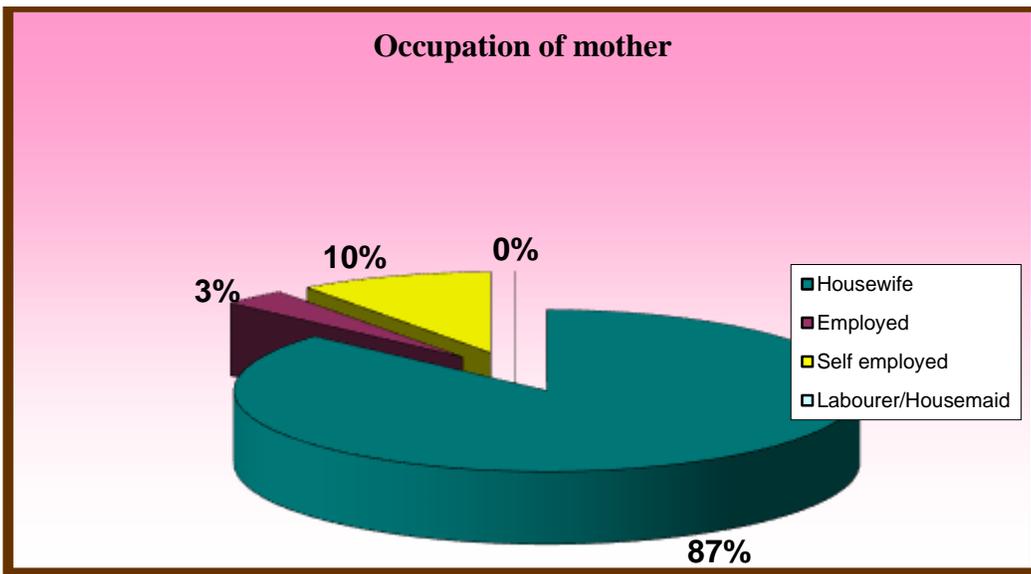


Figure No. 8 –Pie diagram showing percentage distribution according to the occupation of mother

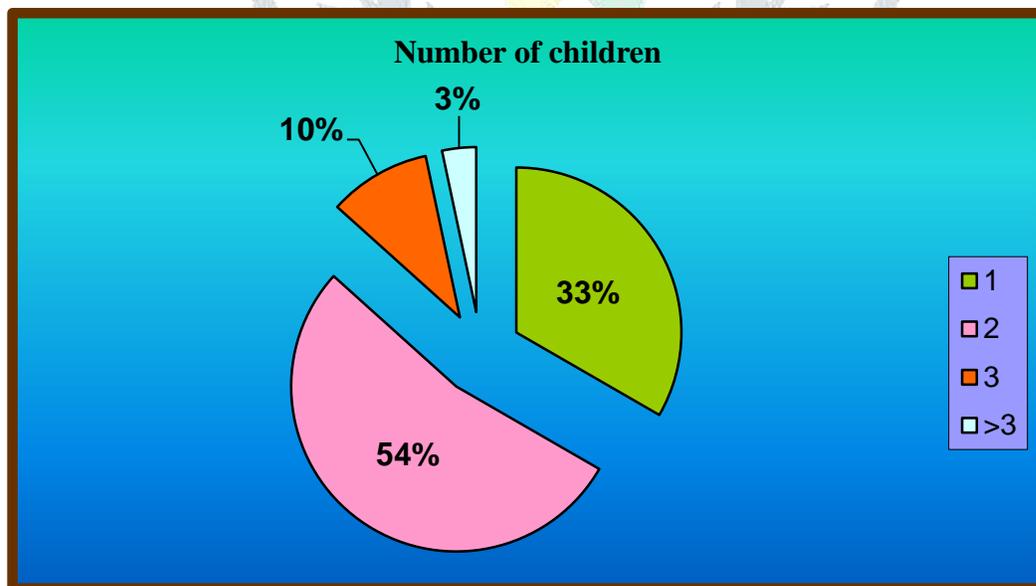
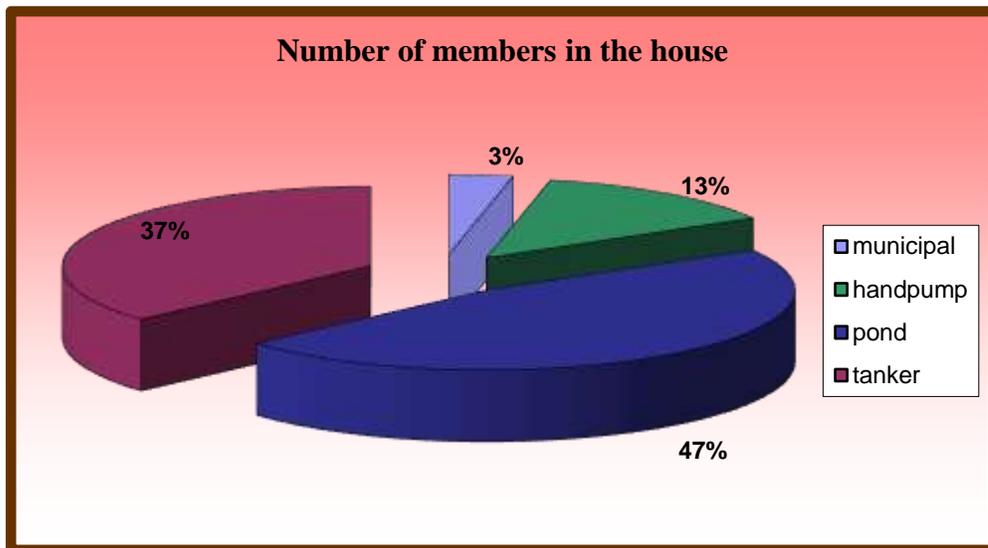


Figure No. 9 –Pie diagram showing percentage distribution according to the number of children

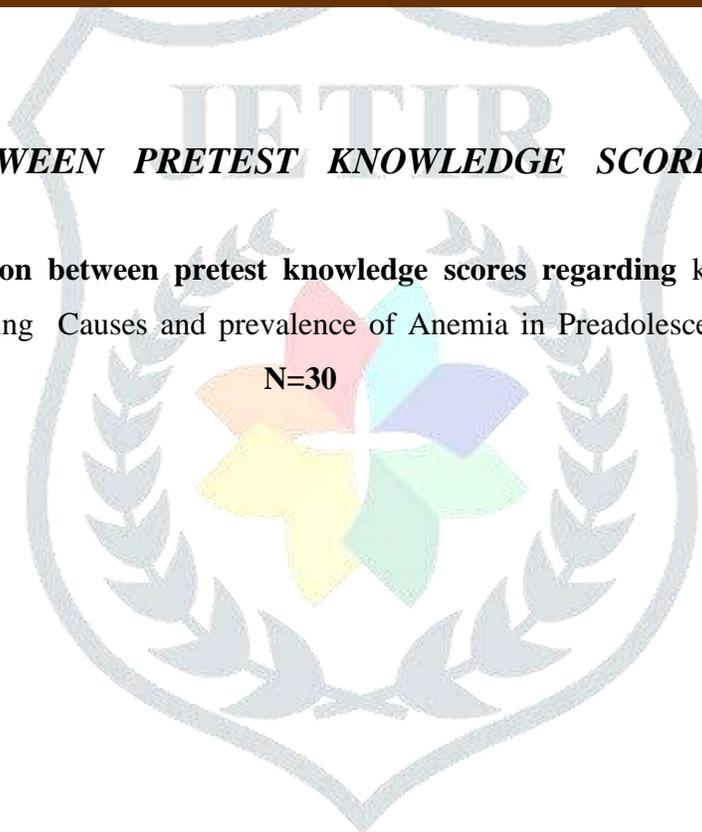


4.2 SECTION II

ASSOCIATION BETWEEN PRETEST KNOWLEDGE SCORES AND SELECTED VARIABLES

Table No. 2(a): Association between pretest knowledge scores regarding knowledge of Mother’s of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescent girls in Adampur Nagar, Bhopal at selected area .

N=30



| Selected demographic variables | Pre –test knowledge score | | | df | χ^2 value |
|--|---------------------------|---------|------|----|----------------|
| | Poor | Average | Good | | |
| 1. Age of mother in years: | | | | | |
| a. < 20 | 00 | 01 | 0 | 6 | 0.50 NS |
| b. 20-30 | 10 | 19 | 0 | | |
| c. 30-40 | 00 | 00 | 0 | | |
| d. >40 | 00 | 00 | 0 | | |
| 2. Type of family: | | | | | |
| a. Nuclear. | 02 | 02 | 0 | 2 | 1.37 NS |
| b. Joint. | 08 | 18 | 0 | | |
| 3. Educational Status: | | | | | |
| a Illiterate. | 04 | 00 | 0 | 6 | 12.63* S |
| b Primary Education. | 02 | 00 | 0 | | |
| c Higher Secondary. | 04 | 19 | 0 | | |
| d Graduate and above | 00 | 01 | 0 | | |
| 4. Monthly family Income (in rupees): | | | | | |
| a <2500. | 06 | 09 | 0 | 6 | 3.36 NS |
| b 2501-5000. | 04 | 07 | 0 | | |
| c 5001-7500. | 00 | 03 | 0 | | |
| d >7500. | 00 | 01 | 0 | | |
| 5. Occupation of mother: | | | | | |
| a Housewife. | 08 | 18 | 0 | 6 | 3.11 NS |
| b Employed | 01 | 00 | 0 | | |
| c. Self employed | 01 | 02 | 0 | | |
| d. Labourer/Housemaid | 00 | 00 | 0 | | |

P<0.05* P <0.01** P < 0.001***

NS - Not Significant S – Significant

TABLE No. 2(b) :Association between level of pretest knowledge scores regarding knowledge of mother's of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescent girls in Adampur Nagar, Bhopal at selected area. N=30

| Selected demographic variables | Pre-test knowledge score | | | Df | χ^2 value |
|--|--------------------------|---------|------|----|----------------|
| | Poor | Average | Good | | |
| 1. No of children: | | | | | |
| a) 1. | 3 | 07 | 0 | 6 | 4.07 NS |
| b) 2. | 4 | 12 | 0 | | |
| c) 3 | 2 | 01 | 0 | | |
| d) 3 | 1 | 00 | 0 | | |
| 2. Water supply in the houses through which system: | | | | | |
| a) Municipal corporation pipeline | 0 | 01 | 0 | 6 | 2.21 S |
| b) Hand pump | 2 | 02 | 0 | | |
| c) Stagnant water like pond | 5 | 09 | 0 | | |
| d) Tanker supply | 3 | 08 | 0 | | |
| 1. Health Status | | | | | |
| a) Sick | 0 | 00 | 0 | 8 | 3.03 S |
| b) Poor | 0 | 00 | 0 | | |
| c) Average | 9 | 18 | 0 | | |
| d) Good | 1 | 00 | 0 | | |
| | 0 | 02 | 0 | | |

P<0.05* P <0.01** P < 0.001*** NS - Not Significant S - Significant

The data in Table 2(a) and 2(b) depicted that the computed chi-square values between the pretest knowledge scores and the selected variables only the educational status of mothers got significant association with the knowledge of mothers. Other selected variables like age of mother, type of family, monthly family income, occupation of mother, number of children, water supply, Health Status, type of the house and refuse disposal.

4.2 SECTION III

Pre test knowledge level and Post test knowledge level of mothers

This section dealt with the pretest knowledge level and post-test knowledge level of mothers regarding causes and prevalence of anemia among preadolescent girls. It was also been analyzed in terms of frequency and percentage.

Table-3 Grading of sample based on pre-test and post test knowledge score.

N=30

| SCORE | PRE-TEST | POST-TEST |
|----------------|-------------|------------|
| 0-8 (Poor) | 10 (33.33%) | 0(0%) |
| 9-16 (Average) | 20 (66.67%) | 7(23.33%) |
| 17-24 (Good) | 0(0%) | 23(76.67%) |

Maximum score -24

Data in the table -3 showed that in pre-test most of the mothers 20 (66.67%) had average knowledge score, 10 (33.33%) subjects had poor knowledge score and no one had good knowledge regarding causes and prevalence of anemia in preadolescent girls. In post test 23(76.67%) had good knowledge, 7(23.33%) had average knowledge score and there was none with poor knowledge regarding causes and prevalence of anemia in preadolescent girls as shown in **Figure 14**.

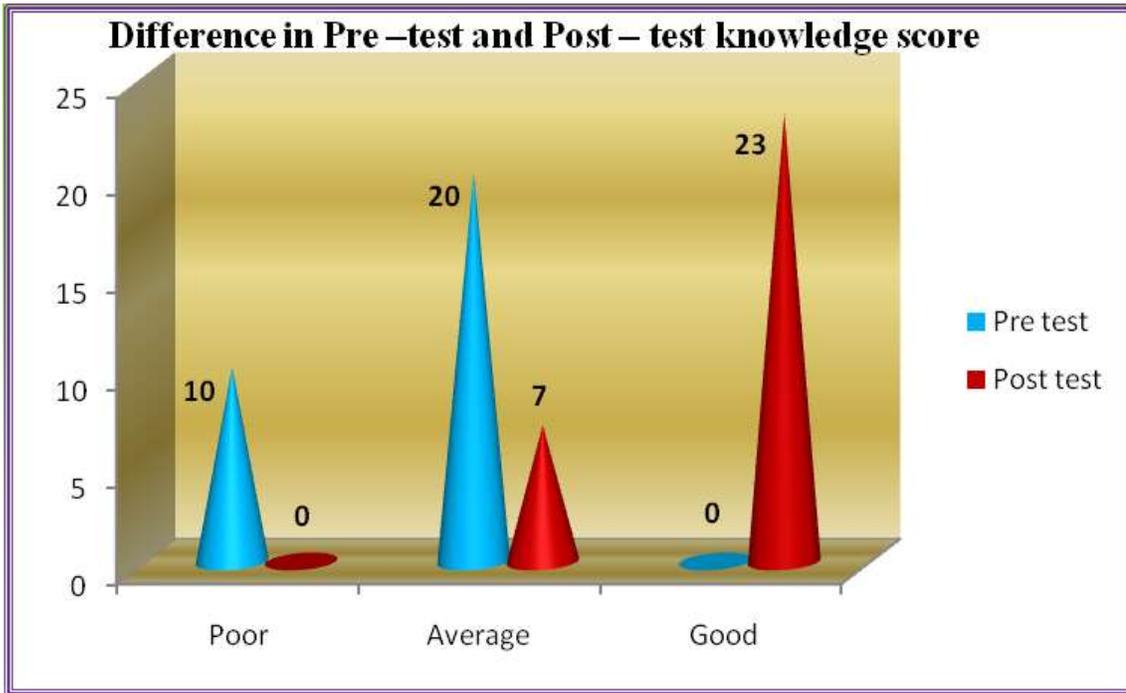
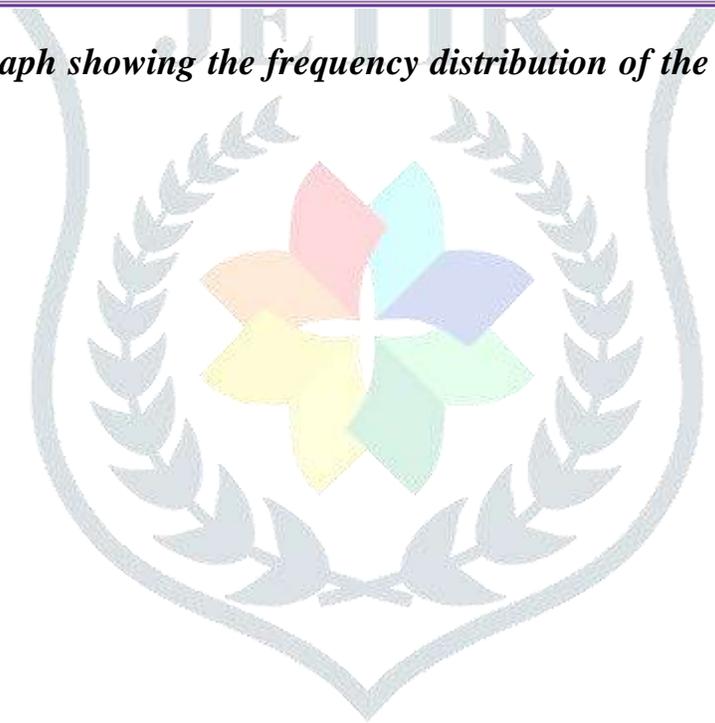


Figure No. 14 –Bar graph showing the frequency distribution of the pretest knowledge level of mothers.



4.3 SECTION IV

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME

Table No 4: Difference between pretest and post test knowledge scores.

N=30

| Test or Knowledge Score | Mean | Mean percentage | SD | Mean difference | 't' Value |
|-------------------------|------|-----------------|-------|-----------------|----------------------|
| Pretest | 9.6 | 40% | 10.55 | 9 | 5.016 ^{***} |
| Post test | 18.6 | 77.5% | | | |

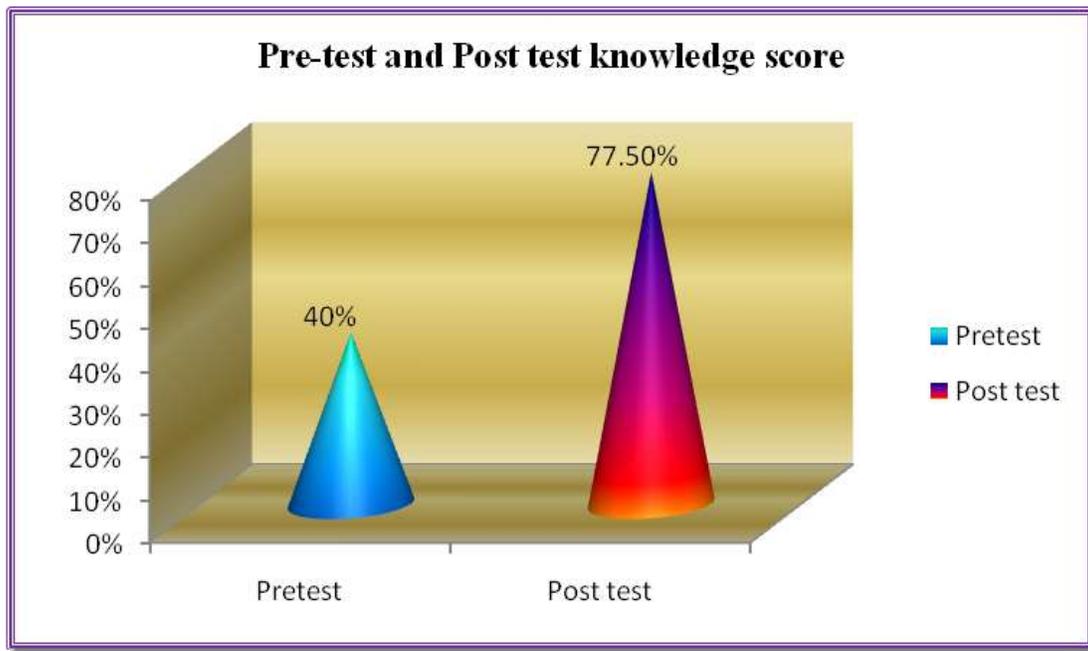
Maximum score- 24

P<0.05*

P <0.01**

P < 0.001***

This table - depicted that mean post-test score was 18.6 (77.5%) which was higher than pre-test score 9.6 (40%), and computed 't' value ($t_{29}=5.016$) was more at the level of $p < 0.001$, thus indicated highly significant difference and effectiveness of structured teaching programme, in increasing the knowledge of mothers of preadolescents girls regarding causes and prevalence of anemia in preadolescents girls.



Pyramid diagram showing difference between pre –test and post – test knowledge score

IV DISCUSSION

In this chapter major findings of the study were discussed in line with the objectives, hypothesis, review of literature in relation to similar studies conducted by other researchers and conceptual framework.

The main aim of this study was to assess the effectiveness of structured teaching program regarding

OBJECTIVES OF THE STUDY

- 1) To assess the knowledge of mothers of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescents girls.
- 2) To find association between pretest knowledge scores and selected demographic variables.
- 3) To evaluate the effectiveness of structured teaching program on knowledge of Mothers of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescent girls
- 4) Discussion of the assessment of the knowledge of Mothers of preadolescents girls regarding Causes and prevalence of Anemia in Preadolescent girl.
- 5) Total 30 sample were taken for the study .Out of 30, 20 (66.67%) had average knowledge score, 10 (33.33%) subjects had poor knowledge score and no one had good knowledge regarding Causes and prevalence of Anemia in Preadolescent girls in pre-test

Discussion of association between pretest knowledge score and selected demographic variables

In order to find the relationship between pretest knowledge and selected demographic variables chi-square test was used. The findings revealed that among the selected variables only the educational status of mother had got significant association with the pre-test knowledge score of mothers. Other selected variables like age of mother, type of family, monthly family income, occupation of mother, number of children, water supply, refuse disposal, type of the house were not associated with pre test knowledge score.

There was significant association $\chi^2 = 12.63$ [P<0.05] between the educational status of mother and pre-test knowledge score of mother

Discussion on the effectiveness of structured teaching programmed on knowledge regarding causes and prevalence of anemia in preadolescent girls

Pre-test knowledge score of 30 mothers regarding causes and prevalence of anemia in preadolescent girls were 20 (66.67 %) mothers obtain average knowledge score and 10 (33.33 %) had poor knowledge score and no one out of 30 had good knowledge score. In post-test 23 (76.67%) had good knowledge score, 7(23.33%) mothers obtained average knowledge score and 0 (0%) had poor knowledge score. The mean posttest knowledge score 18.6 (77.5%) higher than the mean pretest score 9.6 (40 %).

The above results clearly indicated that the structured teaching was effective in increasing the knowledge score among mothers.

Further to know the statistical significance between pretest and posttest knowledge score 't' test was computed. The 't' test value ($t_{29}=5.016$ p<0.001 level) showed that there was a highly significant difference between pre-test and post- test knowledge score (Table-4).

Hypothesis formulated by the researcher that there would be significant association between selected demographic variables and pre-test knowledge scores of mothers regarding causes and prevalence of anemia in preadolescent girls in the present study, found that there was indeed a significant association between educational status of mothers and pre-test knowledge score of mothers regarding causes and prevalence of anemia in preadolescent girls. And this hypothesis was finally accepted.

Another hypothesis was there would be significant difference in the pre-test and post test knowledge score of mothers regarding causes and prevalence of anemia in preadolescent girls and it was found that post knowledge score was significantly higher than the pre-test knowledge score regarding causes and prevalence of anemia in preadolescent girls. And hence this hypothesis was also accepted.

V. CONCLUSION-

The aim of the study was to evaluate the effectiveness of structured teaching program regarding causes and prevalence of anemia in preadolescent girls were selected. Structured teaching was given and post test was taken after seven days.

After detailed analysis the findings revealed the following –

- ✓ Pretest mean knowledge score of mothers of preadolescents girls regarding causes and prevalence of anemia on prevention in Preadolescents girls was 9.6 (40%) and posttest mean knowledge score was 18.6 (77.5%).
- ✓ Structured teaching program was an effective method to increase the gain in knowledge of mothers of preadolescents girls.
- ✓ There was significant association between pretest knowledge score and educational status of mother. Therefore it could be concluded that structured teaching program helped in improving the knowledge of mothers of preadolescents girls and could be used in various settings.

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