A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM REGARDING ANEMIA AND ITS PREVENTION AMONG ANTENATAL MOTHERS IN SELECTED HOSPITAL OF GREATER NOIDA

SUBMITTED TO THE FACULTY OF SCHOOL OF NURSING

GALGOTIAS UNIVERSITY, GREATER NOIDA, UP

In Partial Fulfillment of the Requirement For the Degree of B. Sc Nursing

BY

Roll No.	Group Members
16GSON101037	AABID KHAN
16GSON101043	AANIS SHAN
16GSON101042	DAWOOD ISLAM
16GSON101010	GULAFSHA

SCHOOL OF NURSING

GALGOTIAS UNIVERSITY, GREATER NOIDA, UP

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CERTIFICATE

This is to certify that this thesis titled "**A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM REGARDING ANEMIA AND ITS PREVENTION AMONG ANTENATAL MOTHERS IN SELECTED HOSPITAL OF GREATER NOIDA** " is the bonafide work in the partial fulfillment of the requirement for the degree of Bachelor of Science in Nursing.

Enrollment no.	**Group Members**
16GSON101042	DAWOOD ISLAM
16GSON101037	AABID KHAN
16GSON101043	AANISH SHAN
16GSON101010	GULAFSHA

PROF (Dr.) Ashia Qureshi

Dean, School of Nursing

Galgotias University

GUIDE: Mrs. Shilpa Katoch

Assistant Professor

School of Nursing

Galgotias University

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ABSTRACT

Anemia is a common nutritional deficiency disease especially prevalent among women of child bearing age , particularly during pregnancy and is often a contributory cause of maternal death. Anemia is a condition associated with decreased quality of red blood cells, which reduces the ability to transport oxygen to peripheral tissues. The leading cause of anemia is iron deficiency anemia. In india it's prevalence varies from 20% to 97% in different sets of population mainly pregnant in women of child bearing age.

STATEMENT : A study to assess the effectiveness of structured teaching program regarding prevention of anemia among antenatal mothers in selected hospitals of Noida. The aim of the study was to assess the knowledge on anemia and its prevention and the effectiveness of structured teaching program among antenatal mothers in selected hospitals of Noida. A pre-experimental one group pre-test, post-test design was used for conducting the study in selected hospital of Greater Noida. Purposive sampling technique was used for selecting the sample for study. The sample size was 30. Tool developed and used for data collection were: questionnaires. The data was analyzed and interpreted in terms of objectives and the research hypothesis stated. Descriptive and inferential statics were used for data analysis. Result shows that the mean post test score (14.733) of antenatal mothers is higher than the mean pre test score (11.033), with the mean difference of 4.567. The obtained mean difference was found to be statistically significant as evident from the 't' value of (7.96) for df (29) at 0.05 level of significance which is greater than the table value (1.729). Therefore it can be inferred that the structured teaching program was an effective method for improving the knowledge on anemia and its prevention.

The finding of the study have several implications on nursing practice, nursing research, nursing administration , nursing education. Based on the findings, recommendations for further research were also made.

Key words: Prevention Of Anemia , Structured Teaching Program , Knowledge.

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Introduction

CHAPTER I

INTRODUCTION

Iron clearly is the body's gold, a precious mineral to be hoarded and closely guarded. A low hemoglobin level may represent a dietary iron deficiency. Iron forms a major component of the proteins, hemoglobin in red blood cells and myoglobin in muscle cells. The daily requirement of iron by a woman is twice as great as a man.

In pregnancy good nutrition is necessary at all stages of foetal life. Proper nutrition is absolutely essential during pregnancy and lactation. During pregnancy extra nutrition is required not only for the growing foetus but also for the mother as she undergoes major changes in her body systems. Any dietary deficiency affects both mother and foetus as early as 12 weeks of gestation and continues till delivery.

Anemia is a common nutritional deficiency disease especially prevalent among women of childbearing age, particularly during pregnancy, and is often a contributory cause of maternal death. Anemia is a condition associated with a decrease in the quantity of red blood, cells, which reduces the ability to transport oxygen to peripheral tissues.

It is assumed that iron deficiency is one of the biggest contributing factors to the global burden of Anemia. More than half the world's population of preschool aged children and pregnant women reside in countries where anemia is a severe public health problem (56.3% and 57.5% respectively). The proportion is lower for non pregnant women of childbearing age, but still significant (29.6%). Countries with anemia as a severe public health problem were grouped in Africa, Asia, and Latin America and the Caribbean.

Nutritional anemia is one of the important public health problems not only in India but also in most of the south East Asian countries. About 4- 16% of maternal death is due to anemia.

It also increases the maternal morbidity, fetal and neonatal mortality and morbidity significantly. Anemia in pregnancy is a condition with effects that may be deleterious to mothers and fetuses. Indeed, it is a known risk factor for many maternal and fetal complications.

In India, anemia is the most common nutritional problem affecting more than ½ of the total population particularly in children and pregnant women where the incident is 50 to 97%. It has been suggested prevalence of anemia in pre-school children and pregnant women is sensitive index of the situation in the community. Anemia in pregnancy is a common problem that deserves more attention. Anemia is frequently severe in these situations and can be expected to contribute significantly to maternal mortality and morbidity.

World, Wide the leading causes of anemia is iron deficiency anemia. It is estimated that approximately 1.3 billion individuals in the world. Suffer from anemia making it one of the most important public health issues on the international agenda. In developing countries. Iron deficiency afflicts approximately two billion people and is the principal causes of anemia. In India its prevalence varies from 20% to 97% in different sets of population, mainly pregnant women and women of child bearing age.

NEED FOR THE STUDY

According to WHO (1991) in the world 500,000 women die every year as a result Of pregnancy and childbirth. This means that every minute of a day there is one maternal Death , 99% of these deaths occur in the developing countries. The maternal mortality rate in the world is 390/100,000 live birth , In India 100,000 women die every year as a result of pregnancy and childbirth , which means one maternal death in every five minutes . The maternal mortality rate is 340/100,000 women of reproductive ages.

According to WHO, the maternal death due to anemia is 17.6% in India. Anemia is often a contributory cause of maternal death and is notoriously responsible for Intrauterine growth retardation , pre-term labour , intrauterine death and low birth weight

Babies . So , the investigator was interested in educating the antenatal mothers regarding iron deficiency anemia.

The National Nutritional Anemia Control programme includes pregnant women, feeding, women , family planning acceptors and children in its target group and renders service to control anemia. Indian Council of Medical Research (ICMR) stated , prevalence rate of anemia is as high as 62 %. The ICMR study had made the observation & concluded that the high drop out and non compliance rate of 47.2% and significantly low consumption of tablets were serious constraints in the success of any national programme for the control of anemia in pregnant women.

Because of lack of education about daily requirement is the main reason for Iron deficiency anaemia and a structured teaching programme may enhance the knowledge and change the attitude of pregnant mothers to take Iron rich diet . The investigator hope that it is an urgent need to develop structured teaching programme to educate women about Iron deficiency anaemia and its prevention.

STATEMENT OF PROBLEM

A study to assess the effectiveness of structured teaching program regarding anemia and ots prevention among antenatal mothers in selected hospital of Greater Noida.

OBJECTIVES

- To assess the pre-interventional level of knowledge regarding prevention of anemia among antenatal mothers of selected hospital of Greater Noida.
- To assess the effectiveness of structured teaching programme on knowledge regarding prevention of anemia in antenatal women in selected hospital of Greater Noida.
- To find out the association between post-test knowledge score and selected demographic variables.

HYPOTHESIS

- Ho- There will be no significant difference in pre-test and post-test knowledge score on anemia and its prevention among antenatal mother.
- H1- There will be significant difference in pre-test and post-test knowledge score on prevention of anemia among antenatal mother.
- H2- There will be significant association between level of knowledge score and selected demographic variable.

OPERATIONAL DEFINITIONS

Assess: It refers to evaluate the effectiveness of structured teaching programme.

Effectiveness: In this study it refers to the extent to which structured teaching programme will bring change in knowledge antenatal mother regarding prevention of anemia in terms of significance knowledge of gain scores.

Structured teaching program: In this study it refers to information material intended to enhance the knowledge of antenatal mothers regarding prevention of anemia.

Prevention: In this study it refer to the action of stopping something from happening or arising.

Anemia: it refers to a condition in which the Hb level is 10mg/dl or less than 10mg/dl.

ASSUMPTIONS

- Antenatal mothers have a limited knowledge regarding anemia and its prevention during pregnancy.
- Structured Teaching Program may improve the knowledge regarding the anemia and its prevention during pregnancy.

LIMITATIONS

- The study is limited to antenatal mothers only.
- The study is limited to selected selected hospital of Greater Noida.
- Study is limited to structured teaching program on anemia and its prevention during pregnancy.

CONCEPTIONAL FRAMEWORK

Accordingto Trees and Trees, "One of the important purposes of the conceptual framework is to communicate clearly the interrelationship of various concepts."

According to Polit Hungler, "Conceptual framework represents a less formal and less well developed attempt at organizing phenomena than theory and deal with abstractions that are assembled by virtue of their relevance to a common theme."

Conceptualization provides a frame of reference for research, education and practice. It directs research by pointing out solutions to practical problems.

The three phases of models are :-

- ❖ Input
- ❖ Process
- ❖ Outcome

Input: It refers to antenatal mothers and their existing characteristics: Age**,** Educational qualification, Family income, Parity, Gestational age, Type of diet. Target group is the antenatal mothers of selectedhospital of Greater Noida.

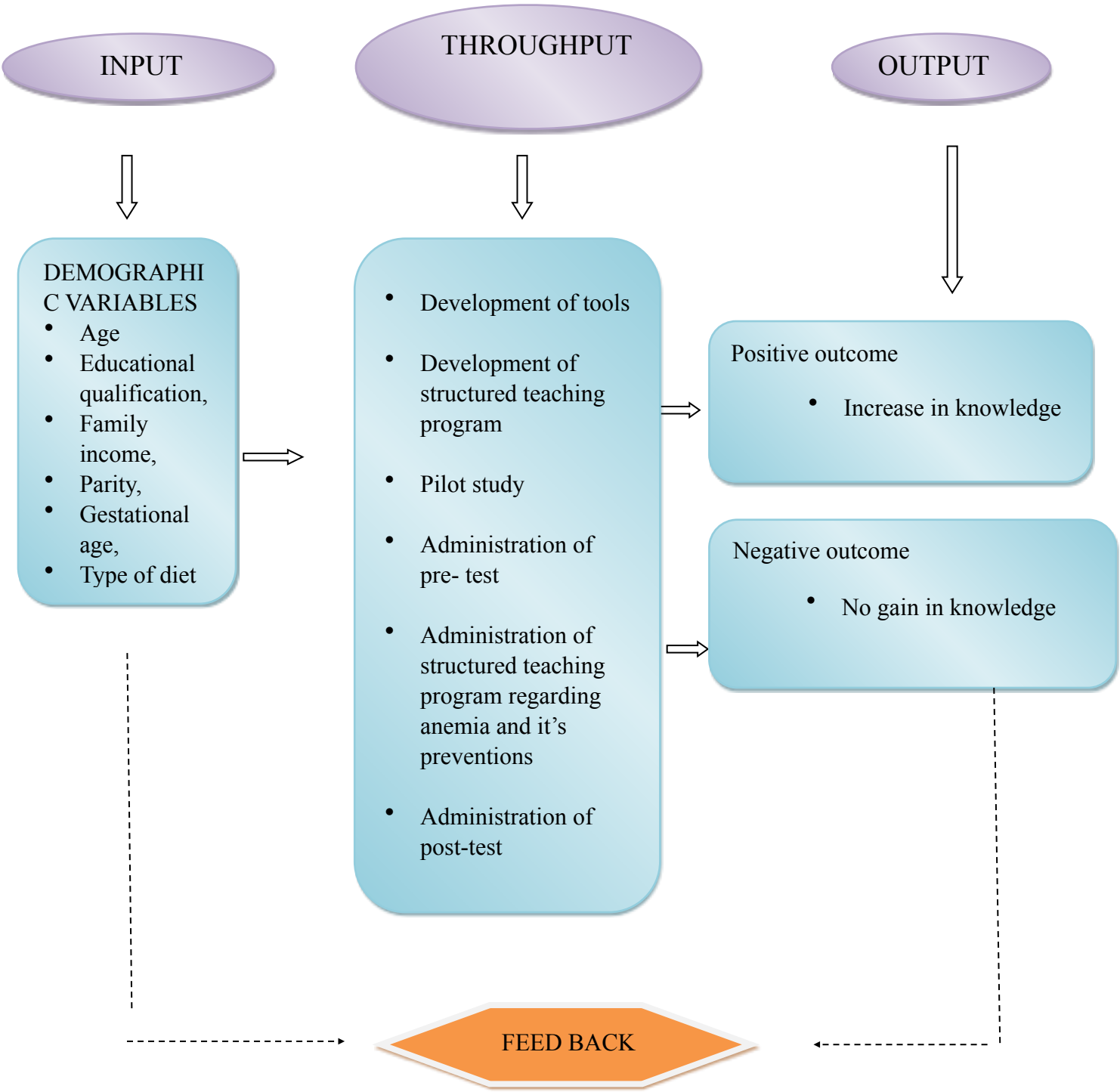
Process: It refers to the different operational aspects of the developmental and implementation of structured teaching programme which includes the following aspects :

- Development of structured knowledge questionnaire
- Validation of tools
- Try out the tools
- Reliability of the tools
- Development of structured teaching programme
- Pilot study
- Assessment of knowledge
- Administration of teaching programme
- Final data collection
- Evaluating the effectiveness of Structured Teaching Programme by pre-test and post-test of one group design.

Output: It refers to the target group exposed to structured teaching programme on anemia and its prevention. Evaluation of knowledge of antenatal mothers before and after the administration of Structured Teaching Programme to find the evidence of the desired changes in the knowledge of antenatal mothers reagarding anemia and its prevention during pregnancy. If the antenatal mothers acquire adequate knowledge, they will have improved knowledge reagarding anemia and its prevention.

Evaluation: This is the process of arriving at judgements and decisions based on careful appraisal of data information. In the present study, evaluation is done for the input, process, and output phases through systematic collection of data at each phase.

Feedback: It is the process by which information is received from each level of the system. In the present study, feedback is done through collecting information and opinionnaire.



Key:

⟶ : Included in study

-----→ : Not included in study

Figure1: Conceptual framework of research study based on general system theory

SUMMARY

This Chapter dealt with the Introduction, need for the study, statement of the problem, objectives, operational definitions, hypothesis, assumptions, delimitations and conceptual framework.

Chapter-II is devoted to review of related research and non-research literature relevant to the study.

Chapter-III presents the methodology adopted for the present study which includes the research approach , research design, setting, sample and sampling technique, development and description of the data collection tools, data collection procedure and plan for data analysis.

Chapter-IV presents the result finding of the study

Chapter-V offers a brief summary of the study , discussion and conclusion drawn by the researcher, limitation of the study as well as the implications and recommendations of the study.

This report will end with selected references and appendices.

Chapter-2

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

This chapter deals with the review of published and unpublished research studies and non research literature related to the present study. A review of related literature is an integral component of any scientific research it involves systematicidentification,location,scrutiny and summary of written materials contain information on research problem.

According to Polit and Hungler (2014), A review of related literature is an essential aspect of scientific research. It broadens the understanding and helps to gain an insight necessary for the development of a broad conceptual context into which the problem fits.

According to Best (2013), a review of related literature helps the researcher to assess what is already known, what is still unknown and untested, justified the need for its replication, throw some light on the feasibility of the study and problems that may be encountered. It also helps to uncover promising methodological tools, which shed light on way to improve the efficiency of data collection and obtain useful information on how to increase the effectiveness of data analysis.

LITERATURE RELATED TO PREVENTION OF ANEMIA AMONG ANTENATAL MOTHER

The primary aim of antenatal is to achieve a healthy baby from the healthy mother. Ideally it starts from the conception and continues throughout. The central purpose of antenatal care is to identify high risk cases as early as possible. About 0.9% maternal death of total deaths occurred globally, India accounts one quarter of maternal death world wide. India stands very high maternal mortality rate in the world showing an average of MMR of 407 per 1 lakh live birth

more than I lakh women die each year due to pregnancy related causes. Estimated MMR in Karnataka is 195 per lakh live birth. The major causes of maternal mortality are anemia (19% toxemia 8%) hemorrhage (29%) sepsis (16%) obstructed labour (10%) abortion (9%) and other (9%) (**Park.** K 2005)

A study was conducted by E.L. Guind W promoted al this study was conducted to determine the effects of severe antenatal maternal anemia on pregnancy outcome. The retrospective study compared with the groups with anemia (Hb%<8g/dl and Hb%>10g/dl) Iron deficiency anemia was most commonest cause for anemia maternal anemia was found to be significantly associated with more frequent preterm birth (29.2% / 9.2%) and increased low birth weight (2933g / 3159g) many studies indicated that routine iron supplementation may have beneficial effects on pregnancy outcome severe anemia adverse effect for the new born and can be prevented by treating early in pregnancy.

A study was conducted on "Comparison of screening methods for anemia in pregnant women in Awassa, Ethiopia " screening of anemia is essential for implementing and monitoring effective antenatal programmes. Overall prevalence of anemia Hb < 11g/dl was 15% mild anemia Hb%<10-10.g/dl Moderate anemia Hb%-7to 9.9g/dlsevere anemia < 7g/dl. W.H.O color scale were calculated for Hb% cutoff points <11.<10 and <9g /dl. The diagnosis of anemia based clinical symptoms remains reliable andiron and \folic acid supplementation prevents the anemia in pregnancy and normal weight babies are \expected at term (Tromed. Int health 2003-April 8 (4) 301-309).

A Study was conducted on "Prevalence of multiple micro-nutrient deficiency amongst pregnant women in rural area of Haryona " to assess the prevalence of micro-nutrient deficiency. The study revealed that deficiency of micro-nutrients during pregnancy are known cause of L.B.W. there is a high prevalence of micro-nutrient deficiency due to poor dietary intake of food and low frequency of non-consumption of food groups rich in micro-nutrients there were 31.8% of illiteracy and majority 81.9% belong to lower middle socio-economic studies 70% pregnant

women were vegetarian food items rich in micro-nutrients were generally consumed less frequently.

A Study was conducted on “Iron supplementation during pregnancy”. The revealed that pregnant women are at high risk for iron deficiency anemia. Routine Iron supplementation during pregnancy has been almost universally recommended to prevent maternal anemia, to improve maternal iron status in puerperal even in women who enter pregnancy with adequate iron stores and also there is an association between maternal iron status in pregnancy and iron status of infants post-partum routine iron supplementation during pregnancy seems to be right strategy to prevent maternal anemia in developing countries where traditional diet provides inadequate iron.

A study conducted at Bharati Vidyapeeth Medical College Pune, in a rural area in Maharashtra, to assess the cause of high perinatal and neonatal mortality, showed, poor utilization of primary health care, services and very poor maternal care receptivity, especially in terms of antenatal care. A very high perinatal mortality rate of 81.3/1000 lives births and a neonatal mortality rate of 63.7/1000 live births were observed in the study. This study recommends a community approach to health care improvements, women’s education and grass root level health personnel.

A study conducted by the Human Reproduction and Research Centre and Department of Obstetrics and Gynecology at Lucknow included a total of 677 women attending the antenatal clinic from January to December 1997. Among them 493 were screened for anemia and 431 were anemic, i.e., the incidence of anemia was 87.4%, showing Hb level below 11 gm /dl. Realizing the magnitude of the problem, the primary functions of the midwives, in promoting the health of the antenatal women is to disseminate health related information to the client. Antenatal women should be taught to incorporate, health related behaviors such as, intake of iron rich diet, correct dosage and use of iron supplements and protection from worm infestation.

A study was conducted at Bangalore in St. John's Medical College on reducing maternal anemia through community participation. The study included samples from both rural and urban areas. (N = 1052). Prevalence of anemia (Hb<11g/dl) among pregnant women in the base line survey was (60.4%). The mean Hb was 10.33 g/dl + 1.68. Knowledge of the definition, causation and potential impact of anemia on the mother and the infant was low ranging from 0.5 to 10.5%. Additional results demonstrated inadequate counselling by health workers, resulting in women's lack o understanding about the rationale for consuming iron supplements during pregnancy.

A study was conducted in Ludhiana, to assess the knowledge of urban mothers about High risk conditions during pregnancy, and the relationship of knowledge with age education. income and occupation. The sample size was 40. The findings revealed that the mothers possessed fairly high level of mean percentage knowledge (70.62). Mothers with highest level of education obtained the highest mean percentage knowledge score (88.4). Those with VIII pass had the lowest mean knowledge percentage score (36.25). Younger group mothers had (17-26 years) the highest mean percentage knowledge score (80.35) whereas the older age group had (37 – 47 years) the lowest knowledge scor (48). Mothers who had been working had a higher knowledge score than the housewives.

A study was conducted on the effectiveness of structured teaching program for antenatal women regarding selected high-risk factor during pregnancy selected hospital of Bangalore. Result that structure teaching program increase the knowledge of several of antenatal mother pre-test score (73.8)and post-test score (43.5).

A Study was Conducted on prevalence of anemia in pregnancy at Pucallpa regional hospital, Peru. 1,015, pregnant women were assessed and the potential association between anemia and chronological age, schooling, previous pregnancies and weight gain during

pregnancies was also assessed. The prevalence of anemia is 70.1%. Anemia is directly related to number of previous pregnancies and inversely related to weight gain during pregnancy. The result shows that the prevalence of anemia is high.

A Study was Conducted to assess the compliances of pregnant women on iron supplementation at a large-scale iron supplementation programme was conducted for the 70,000 pregnant women. The problem identified were such a late entry to antenatal care, high dropout rate from antenatal care, and misdirected continued testing of women who were not anemic at registration. The study recommended that in most countries' attention should be directed towards changing dietary habits to enhance the availability of local food stuffs that are rich in iron

A Study was Conducted in National University Hospital at Singapore to determine the prevalence and predictors of anemia in Pregnancy. All women delivered at the hospital had their Hb estimated. Less than 11gm/dl, blood was taken to establish causes of anemia. Data was collected with regard to their antenatal progress, and factors predisposing to anemia in pregnancy. The most common cause of anemia is iron deficiency and its prevalence is (81.3%). The most common cause of anemia is iron deficiency and its prevalence is (81.3%). The occurrence of anemia in pregnancy is related to low social economic is (81.3%). The occurrence of anemia in pregnancy is related to low socio-economic status of the women. Multiparous women of the lower socio-economic class who tend to book late in pregnancy were found to have highest risk of anemia. The study confirm that Iron deficiency anemia is the most common cause of anemia in pregnancy and is a major health problem developing and developed countries.

A Study was Conducted on the importance of time intervals between child birth and anemia in pregnancy. During pregnancy some parameters have been studied in order to detect anemia, number of erythrocytes, hematocrits, hemoglobin and iron in the serum of 100 women.

The greater group of pregnant women (68%) decided for the second pregnancy after two years while 32% after four years at least. All parameters related to anemia were present in the groups of shorter time intervals between births. Thus, in the first trimester anemia was detected time intervals between births. Thus, in the first trimester anemia was detected in13.3% of pregnant women's while only 7.1% in those with the longer intervals between deliveries. In the third trimester 50% of antenatal mothers were anemic with short time intervals between births and only 21.4% of women with long time interval between births were anemic. Greater presence of anemia in women with shorter time interval between pregnancies may be statistically significant. Therefore, frequent pregnancies are one of the causes of anemia. They are more often detected in multipara with shorter time intervals between deliveries.

A Study was Conducted on "Iron deficiency anemia it is prevalent in a sample of pregnant women at delivery in Germany" to determine the prevalence and risk factors of iron deficiency pregnancy the study revealed that studies on leucocyte count correlated significantly with ferration value. Low education level young maternal age were significant factors in iron deficiency anemia which is prevalent in Germany it could prevented by routine iron supplementation.

SUMMARY

This chapter dealt with a review of literature related to the present study. Literature review has enabled the investigator to select the tool, independent variables, and data collection techniques and decide the plan of statistical analysis with deeper insight and knowledge.

Chapter-3

CHAPTER-III

METHODOLOGY

In a research study the researcher moves from the beginning of the study (posing a question) to the end (obtaining an answer) in a logical sequence of predetermined steps that are similar across studies. The purpose of methodology section is to communicate to readers, what the researcher did to solve the research problem or to answer the question**.**

Research methodology is the framework for conducting a study, a way to systematically solve the research problem.

Research methodology refers to developing or refining procedures or controlled investigations for obtaining and analyzing data. This chapter deals with the methodological approach to assess the effectiveness structured teaching program of knowledge about Prevention of anemia in antenatal mothers. It includes the description of research approach, research design, variables, setting, population, sample, sample size, sampling technique, criteria for selection of sample, instrument used for the study, description of the tool, validity, reliability, pilot study, procedure for data collection and data analysis plan.

RESEARCH APPROACH

The research approach is the broad basic procedure for the collecting plan data in a particular research institute. The approach used for the present study in experimental research approach to accomplish the objective of the study. The approach helps to a great extent in evaluating programs, procedures and techniques.

Treece and Treece(1986) stated that, research approach is the overall plan for how to obtain answers to handle some of the difficulties encountered during the research process.

In this study, the quantitative research approach is considered appropriate to evaluate the

effectiveness of the structured teaching program regarding knowledge about prevention of anemia among antenatal mothers.

RESEARCH DESIGN

Research design is the skeleton of the study. The term refers to how the researcher puts a research study together to answer a question or a set of questions. The research design spells out the strategies that the researcher adopts to develop information that is accurate, objective and interpretable.

Polit& Beck (2012) stated that "the research design is the overall plan for addressing a research questions, including specifications for enhancing the study's integrity ''.

The research design selected for the present study is a pre-experimental one group pretest-posttest design in order to assess the knowledge of antenatal women, before and after the structured teaching programme on prevention of anemia. The base measure was knowledge test, and the treatment was a structured teaching programme (S.T.P) on prevention of anemia. The design adopted for the present study is represented in Table 1.

In one group pre-test – post-test design, the dependent variable is measured before the independent variable is applied. After an appropriate period of time has elapsed, the dependent variable is measured again. In the analysis of data, the difference between the initial and terminal measurements represents the effect of independent variable.

GROUP	PRE-TEST	INTERVENTION	POST- TEST
One group of antenatal women who are attending antenatal clinics of GIMS Hospital	Knowledge of antenatal women regarding anemia in pregnancy and its prevention (O1)	Teaching on anemia and its prevention during pregnancy using flash cards and flip charts (X)	Knowledge of antenatal women regarding anemia in pregnancy and its prevention (O1)

Where,

O_1 – Knowledge assessment of antenatal women regarding anemia in pregnancy and its prevention before the structured teaching programme (STP).

X- Intervention or teaching which is a structured teaching programme (STP) on prevention of anemia using flash cards and flip charts.

O_2 – Knowledge assessment of antenatal women regarding anemia in pregnancy and its prevention before the structured teaching programme (STP).

Table 1: Schematic presentation of research design

VARIABLES UNDER STUDY

A variable is anything that can change or anything that is liable to vary.

Abdullah and Levine stated that "Variables are the characteristic traits or attributes of the person or thing observed under study".

Polit and Hungler (2014) stated that, "a variable is, as the name implies that varies. A variable is the quality of an organism, group or situation that takes different value."

Three types of variables were identified in this study :

1. Independent variable
2. Dependent variable
3. Extraneous variable

1. **Independent variable** : "An independent variable that stands alone and is not dependent on any other. In this study structured teaching programme is the independent variable.
2. **Dependent variable** : It is the outcome variable of interest, the variable that hypothesised to dependent on or be caused by another variable, the independent variable. The dependent variable in this study is knowledge of antenatal mothers

regarding anemia and its prevention during pregnancy.

3. **Extraneous variable** : Any uncontrolled variable that greatly influences the results of the study is called an extraneous variable. The extraneous variable in this study are:
    - Age
    - Educational qualification
    - Family income
    - Parity
    - Gestational age
    - Type of diet

RESEARCH SETTING

The selection of appropriate setting is important because the setting can influence the way that people behave, feel and how they respond. The researcher needs to decide where the investigation will be implemented and where the data will be collected.

According to **Polit and Beck(2012**), "setting is the physical location and condition in which data collection takes place in the study.

In the present study, the research setting was antenatal out patient department (O.P.D) of Government Institute of Medical Sciences, Greater Noida.

POPULATION

Population is the total number of people or elements of defined set who met the criteria, the researcher has established for a study from whom the sample will be selected and to whom the findings will be generalized

According to Polit and Beck "population is the entire aggregation of cases in which a researcher is interested.

In the present study population comprised of all antenatal women (12-36 weeks of gestation) who attend the antenatal outpatient department Government Institute of Medical Sciences, Greater Noida.

SAMPLE

Sample consists of a subset of units which comprise the population selected by investigators or researchers to participate in their research project.

In the present study, sample comprised of antenatal mothers who attend the outpatient department of Government Institute of Medical Sciences, Greater Noida.

SAMPLE SIZE

Sample size in the present study consists of 30 Antenatal mothers.

SAMPLING TECHNIQUE

Sampling is a process of selecting representative units from entire population of a study. Sampling is necessary because it is more economical and efficient to work with a small group of elements.

Abdellah and Levine (2013), stated that "the choice of sampling techniques depends on the nature of the problem, the kind of variables included in the study, the type of research and the number of sampling unit."

In the present study sample selection was done by purposive sampling technique. The investigator waited at the antenatal registration room and identified the clients who met the inclusion criteria and were willing to participate in the study.

SAMPLING CRITERIA

Inclusion criteria

1. Antenatal women between 12 – 36 weeks of gestation

2. Antenatal women who are able to read and write Hindi or English

Exclusion criteria

Antenatal women who are not willing to participate in the study.

DATA COLLECTION TOOLS AND TECHNIQUE

The most important and crucial aspect of any investigation is the collection of appropriate information, which provides the necessary data for the study.

Polit and Hungler (1999),stated that "the task of selecting or developing an appropriate method for collecting data is among the most challenging task in research process."

Based on the conceptual framework and objectives of the present study, that is

TOOL 1- Demographic data (Age**,** Educational qualification, Family income, Parity, Gestational age, Type of diet**)** to collect the baseline data.

TOOL 2 – A structured questionnaire to assess the knowledge of the antenatal mothers regarding anemia and its prevention during pregnancy.

DEVELOPMENT OF THE TOOL

Selection and preparation of the tools was based on-

- A review of research and non- research literature was carried out in areas related to effectiveness of structured teaching program on prevention of anemia among antenatal mothers.
- Discussion with advisors, guides, experts in the fields of obstetrics.
- Discussion with peer group.
- Opinions of experts sought to determine the clarification and appropriateness of the

items.

CONTENT VALIDITY OF THE TOOL

According to **Treece and Treece,** "Validity refers to an instrument or test actually testing what it is supposed to be testing."

According to **Polit and Hungler,** "Validity refers to the degree to which an instrument measures what it is supposed to be measuring."

For the content validity of tools, criterion rating scales were prepared which consists of items with three responses for rating against each criterion like "fully met", "partially met", and "to some extent" with the remark column for each criterion. The tools along with request letter statement of problem, objectives and criteria rating scales were submitted to 7 experts from the same fields of Obstetrics and Gynaecology for validation. Among the experts 2 were doctors and 5 were nursing professors.

- The experts were chosen on the basis of their clinical expertise, experience, qualification. Experts were requested to judge the items on the basis of their relevance, clarity, feasibility and organization of items.
- Based on expert's opinion, necessary modifications were made. There was 100% agreement on all items.

DESCRIPTION OF TOOL

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem.

TOOL I: Demographic data

This consists of questions to elicit identification data regarding Age, Educational qualification, Family income, Parity, Gestational age, Type of diet.

TOOL II: Questionnaire to elicit knowledge

This consists of 25 multiple choice questions, each with 4 options. The respondents are instructed to write (a, b, c or d) in a box provided against each answer. Each right answer is given 1 mark. The maximum possible score is 25.

The categorization is as follows:

17 - 25 - Excellent

09 - 16 - Good

0- 08 - Poor

TRY OUT OF THE TOOL

After obtaining formal administrative approval, the try out was done on 30 antenatal mothers who had the characteristics of similar to these of the subjects under study. A try out was in a similar setting for pilot study in selected hospital to find out the reliability, clarity of items, and ambiguity of the study.

The average times taken by Antenatal mothers to answer the questions were 40-45 minutes. The tools were found to be unambiguous and appropriate.

PILOT STUDY

According to **Treece and Treece (1996) "**Pilot study is the miniature trial run of the methodology, planned for a major project. The purpose of pilot study is two fold :- to make improvements in the research project and to detect a problem that must be eradicated before the major study is attempted".

After obtaining formal administrative approval, the try out was done on 10 antenatal mothers was conducted in B.R. Ambedkar Hospital, Noida U.P

PROCEDURE FOR PILOT STUDY

- Self-introduction was given and rapport established.
- Purpose of study was explained.
- The purposive sampling technique was used to select 10 students.
- Structured knowledge questionnaire was administered to assess knowledge.
- Post test was taken after a period of 12 – 14 days. The data were analyzed using the paired 't' test calculated from the mean and standard deviations of pre-test and post-test scores.
- The obtained result of the pilot study showed a significant increase in the knowledge of the antenatal mothers regarding anemia and its prevention.

DATA COLLECTION PROCESS

- A formal permission was obtained from the Administrator of Government Institute of Medical Sciences, Greater Noida.
- The antenatal women, who come for regular visits, fulfilled the inclusion criteria, and those who were willing to participate in the study, were selected using purposive sampling technique.
- After obtaining the signature in the consent form, a pre-test to assess the knowledge was given to the samples and this was followed by the teaching.
- The women were given opportunity to clarify the doubts after the teaching.
- After 5 days the post test to assess the knowledge after the administration of tool.

PLAN FOR DATA ANALYSIS

Analysis is the systematic organization and synthesis of research data and the testing of research hypothesis using these data. Based on the objectives and hypothesis of the study the

following steps are taken to analyse the data.

1. Organize the data in a master sheet
2. Calculate frequencies and percentages to show distribution of subjects according to baseline variables.
3. Calculate mean, median and standard deviation of pretest and posttest scores, and paired ‘t’ test to determine the effectiveness of teaching interventions.

SUMMARY

This chapter on methodology has dealt with the research design, variables under study, setting of the study, population, sample, sample size and sampling technique, development of tool and description of data collection tools, content validity, try out of the tool, procedure for data collection and plan for data analysis.

Chapter-4

CHAPTER IV

RESULTS

This chapter deals with the analysis and interpretation of the collected data to assess the effectiveness of structured teaching programme regarding anemia and its prevention during pregnancy in a selected hospital of Greater Noida.

The purpose of analysis is to reduce the data to an interpretable form, so that the research problem can be studied and tested. The research analyst has broken down the data in constituent parts to obtain answers to the research questions and to test the research hypothesis.

According to Polit and Hungler(1999), "Data analysis is the systemic organization and synthesis of research data and testing of research hypothesis using that data".

Analysis and interpretation of data are based on data collected from 30 samples of antenatal mothers from selected hospital of Greater Noida. The Analysis and interpretation of the data are based on the objectives of the study and hypothesis to be verified.

OBJECTIVES OF THE STUDY WERE:

- To assess the pre-interventional level of knowledge regarding anemia and its prevention during pregnancy among antenatal mothers of selected hospital of Greater Noida.
- To assess the effectiveness of Structured Teaching Program on knowledge regarding anemia and its prevention during pregnancy among antenatal mothers of selected hospital of Greater Noida.
- To find out the association between the post- test knowledge score and selected demographic variables.

THE HYPOTHESIS FOR THE STUDY WERE:

- **H_0**– There was no significant difference in pre-test and post-test knowledge score regarding anemia and its prevention during pregnancy among antenatal mothers.

- **H_1**- There was significant difference in pre-test and post-test knowledge score regarding anemia and its prevention during pregnancy among antenatal mothers**.**

- **H_2**-There was significant association between post-test knowledge scores and selected demographic variables.

ORGANIZATION AND PRESENTATION OF DATA:

The findings are presented according to the objectives set for the study. The data are organized under the following headings:

- **SECTION I:** Findings related to frequency and percentage distribution to describe demographic characteristics.

- **SECTION II:** Findings related to Pre-test and Post-test scores regarding anemia and its prevention during pregnancy among antenatal mothers**.**

SECTION-I

Findings related to frequency and percentage distribution of demographic characteristics.

- This section describes the demographic characteristics of the sample subjects under study. The sample consisted of 30 samples .The data obtained described the characteristics pertaining to their Age, Educational qualification, Family income, Parity, Gestational age, Type of diet. Frequency and percentage were computed for describing the sample characteristics. Table 1 represents the characteristics of the samples.

TABLE 2: Findings related to frequency and percentage distribution of demographic characteristics. N=30

S.NO	Demographic Characteristics	Prevention of Needle Stick Injury		Chi square (χ^2)
		Frequency (f)	Percentage (%)	
1.	**Age (in years):** a.<20 b.20-29 c.30 & above	 27 3 0	 90% 10% 0%	χ^2=0.792 (N/S)
2.	**Educational Qualification** a) No formal education b) Primary c) Secondary d) Graduation and above	 0 5 20 05	 0% 17% 66% 17%	χ^2=0 (N/S)
3.	**Family income per month in rupees** a) <3000 b) 3000-5000 c) 5000-8000 **d)** >10000	 0 0 5 25	 0% 0% 17% 83%	χ^2=0 (N/S)
4.	**Parity** a) Primigravida b) Multigravida	 23 7	 77% 23%	χ^2=0.048 (N/S)
5.	**Gestational age** a) 1st trimester b) 2nd trimester c) 3rd trimester	 20 8 2	 66% 27% 7%	χ^2=0.368 (N/S)
6.	**Type of diet** a) Vegetarian **b)** Non-vegetarian	 18 32	 40% 60%	χ^2=0 (N/S)

The data depicted in Table 1 shows that;

- Majority of the samples 27 (90%) were in the age group of less than 20 years and 3 (10%) were in the age group between 20-29 years.
- Majority of the samples 20 (66%) were having secondary education, 5 (17%) were having primary education and 5 (17%) were graduates.

- Majority of the sample s25 (83%) were having the family monthly income more than Rs 10,000 and 5 (17%) were having family monthly income between Rs.5000-Rs.8000.
- Majority of women 23 (77%) were primigravida and 7 (23%) were multigravida.
- Majority of the samples 20 (66%) were in 1st trimester whereas 8 (27%) and 2 (7%) were in 2nd trimester and 3rd trimester respectively.
- Majority of the samples 32 (60%) were non vegetarian and 18 (40%) were vegetarian.
- All the demographic vaiables were not associated with post-test knowledge score, statistically not significant as calculated by using Chi square formula.

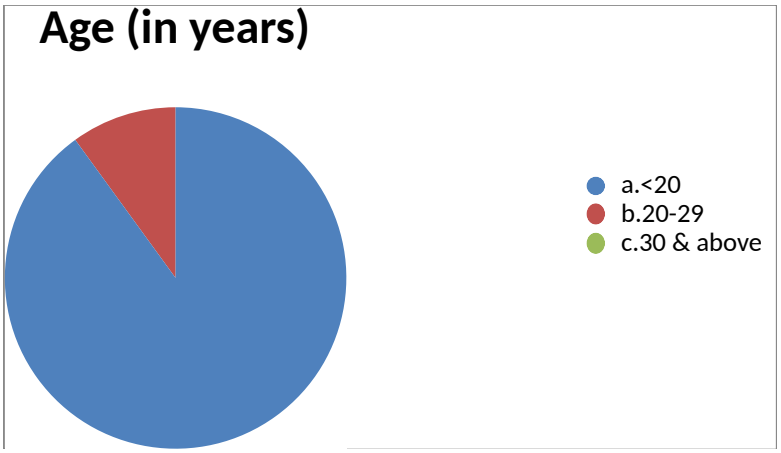


Figure 2: Pie graph showing percentage distribution of antenatal mothers according to age in years.

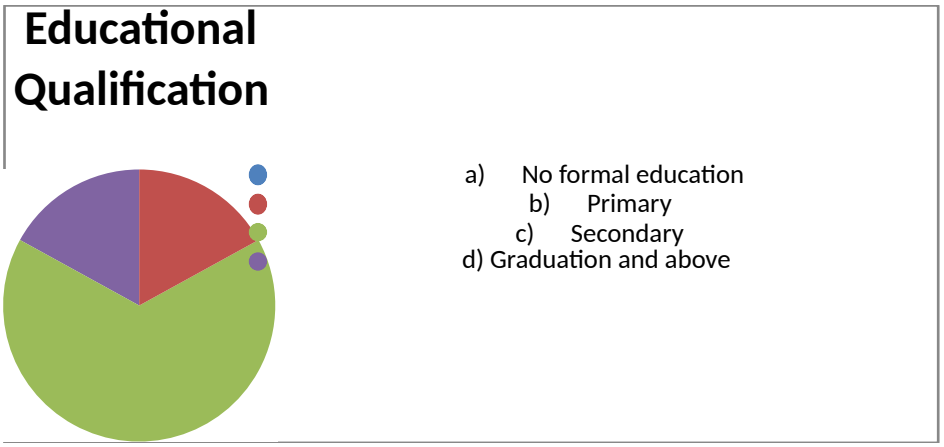


Figure 3: Pie graph showing percentage distribution of antenatal mothers according to educational qualification.

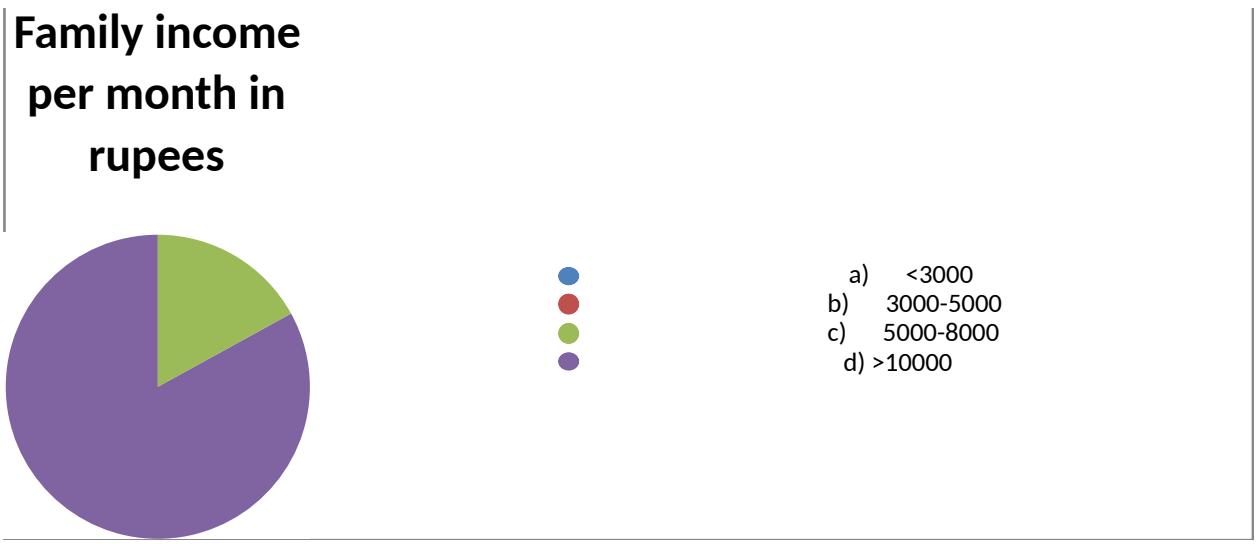


Figure 4: Pie graph showing percentage distribution of antenatal mothers according to family income per month in rupees.

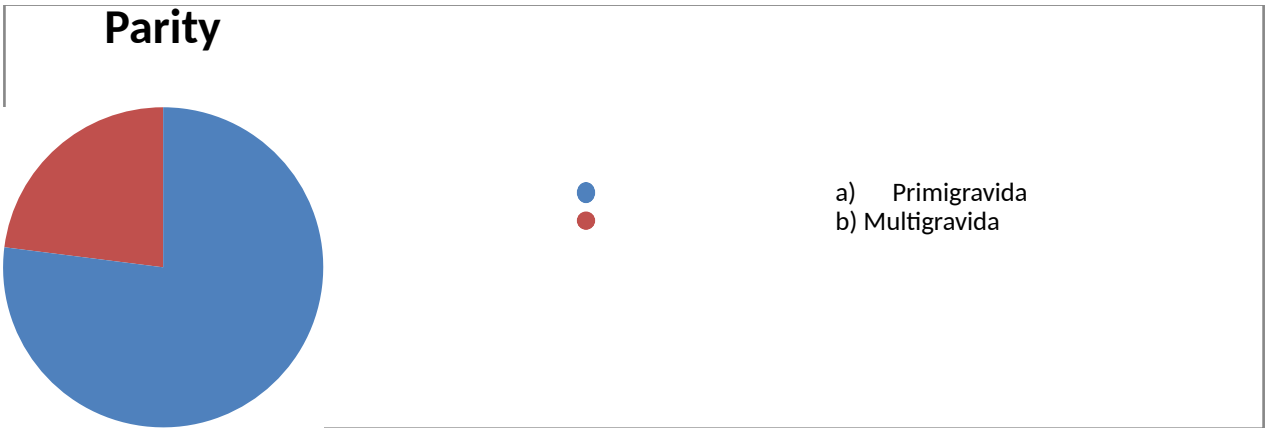


Figure 6: Pie graph showing percentage distribution of antenatal mothers according to their parity.

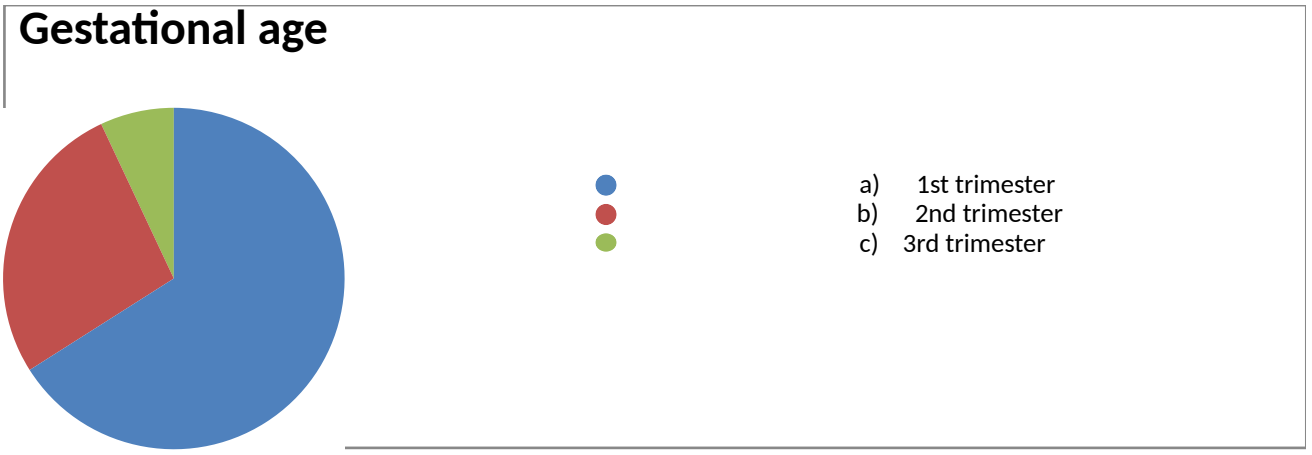


Figure 6: Pie graph showing percentage distribution of antenatal mothers according to gestational age.

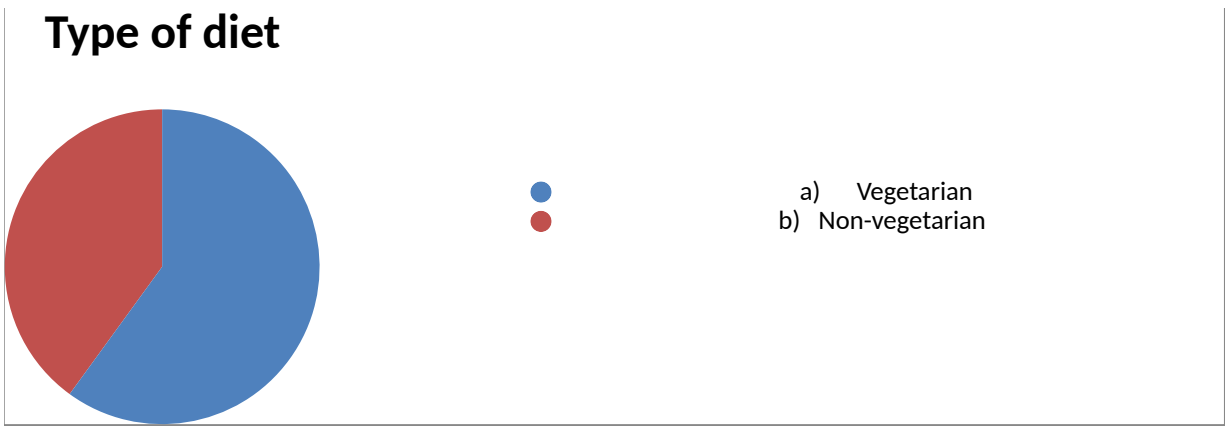


Figure 7: Pie graph showing percentage distribution of antenatal mothers according to type of diet they are taking.

SECTION II

Findings related to Pre-test and Post-test scores regarding anemia and its prevention during pregnancy among antenatal mothers.

This describes the findings related to Pre-test and Post-test scores regarding anemia and its prevention during pregnancy among antenatal mothers. The data was analysed using dependent t-test for testing the hypothesis H1. The data have been presented in Table 3**.**

TABLE – 3

Frequency and percentage distribution of pre-test and post-test of anemia and its prevention during pregnancy among antenatal mothers. N=30

SCORING	PRE TEST SCORE		POST TEST SCORE	
	FREQUENCY (f)	PERCENTAGE (%)	FREQUENCY (f)	PERCENTAGE (%)
0-8 (Poor)	3	10%	0	0%
9-16 (Good)	27	90%	24	80%
17-25 (Excellent)	0	0%	6	20%

Table 3: Data depicted in table 2 represents that in pre-test 27 (90%) antenatal mothers were having good knowledge and 3 (10%) were having poor knowledge whereas in post-test 24 (80%) antenatal mothers were having good knowledge and 6 (20%) antenatal mothers were having excellent knowledge.

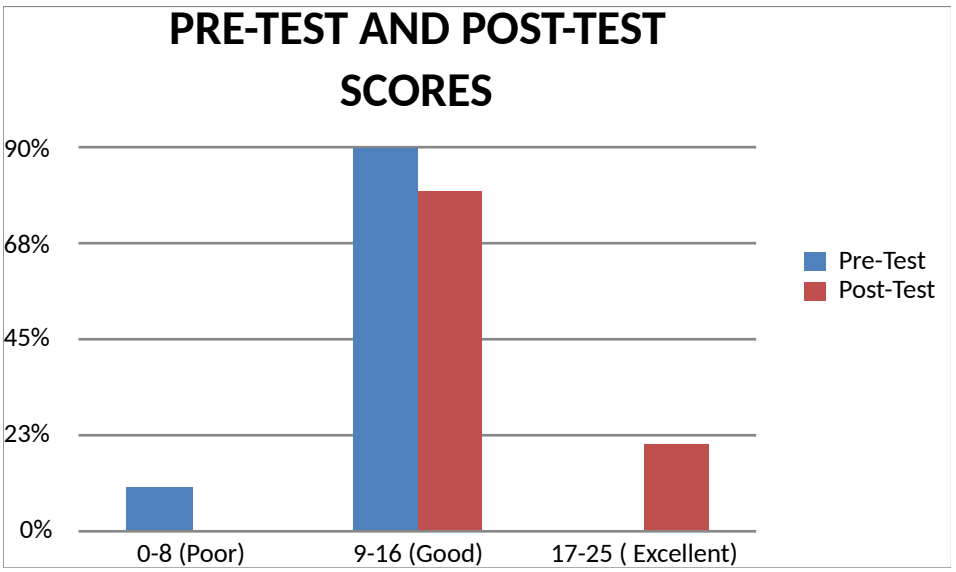


Figure 8: Column graph showing the percentage distribution of pre-test and post-test knowledge score among antenatal mothers regarding anemia and its prevention.

TABLE-4

Mean, Median, mean difference, standard deviation and 't' value of pre-test and post-test scores for level of knowledge regarding anemia and its prevention.

KNOWLEDGE SCORE	MEAN	MEDIAN	MEAN DIFFERENCE	S.D	"t" VALUE
PRE-TEST	11.033	9	4.567	2.097	**t = 7.96**
POST-TEST	14.733	14		2.44	

***Significant at 0.05 level of significance,**

df(29)= 1.729 at level of significance.

The data presented in Table 4 shows that the mean post test score (14.733) of antenatal mothers is higher than the mean pre test score (11.033), with the mean difference of 4.567. The obtained mean difference was found to be statistically significant as evident from the 't' value of (7.96) for df (29) at 0.05 level of significance which is greater than the table value (1.729).

This shows that the obtained mean difference was a true difference and not by chance. Hence, null hypothesis (H0) was rejected and research hypothesis (H2) was accepted. It can be inferred that structured teaching programme was effective in terms of increasing the knowledge regarding anemia and its prevention during pregnancy.

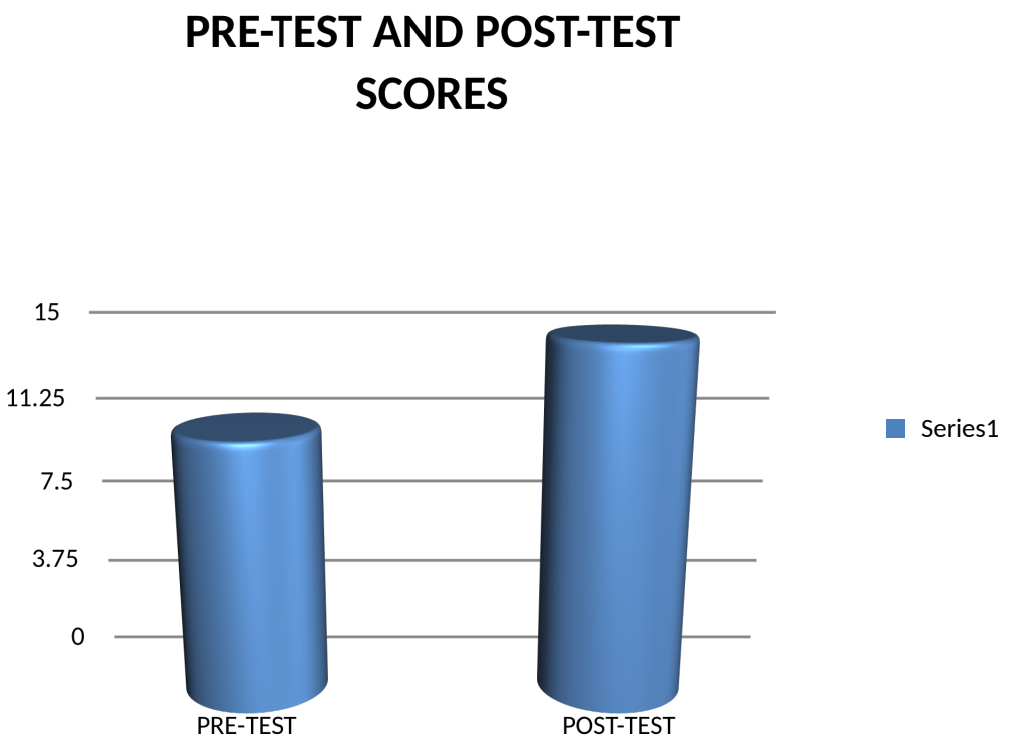


Figure 9: Cone graph showing percentage distribution of pre-test and post-test knowledge score of antenatal mothers regarding anemia and its prevention.

SUMMARY

This chapter dealt with the analysis and interpretation of the data collected and assess the effectiveness of structured teaching programme in terms of knowledge regarding anemia and its prevention at selected hospital of Greater Noida. The next chapter presents a summary of the study, major findings, conclusions, discussion, implication, and limitations and recommendations.

The next chapter presents the discussion, summary, nursing applications and recommendation for the future research study.

Chapter-5

CHAPTER V

DISCUSSION, SUMMARY, CONCLUSION, NURSING IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

DISCUSSION

It is assumed that iron deficiency is one of the biggest contributing factors to the global burden of Anemia. More than half the world's population of preschool aged children and pregnant women reside in countries where anemia is a severe public health problem (56.3% and 57.5% respectively). The proportion is lower for non pregnant women of childbearing age, but still significant (29.6%).

The main aim of the study was to determine the effectiveness of a structured teaching programme on anemia and its prevention during pregnancy for antenatal women. One group pre-test post-test design was adopted for the study. The population of the study was antenatal women attending the antenatal OPD of GIMS hospital and the sample size was 30. Structured questionnaires to elicit the baseline data and knowledge of antenatal women were the tools used for the study.

A study was conducted in Iran to examine knowledge and attitude towards nutrition anemia among antenatal women. The total number of samples of the study was 196 antenatal women in shiraz, the result was the knowledge about nutrition anemia was relatively low (46.9%) and the attitude score towards nutrition anemia also low (64.8%) there was a significant co relation between antenatal women knowledge and their attitude. So the researcher found that, antenatal women have poor knowledge and attitude towards nutrition anemia.

The present study finding revealed that structured teaching programme was found to be an effective method for improving the knowledge of antenatal mothers regarding anemia and its prevention during pregnancy.

SUMMARY

The present study was to assess the effectiveness of structured teaching program regarding anemia and its prevention among antenatal mothers in selected hospital Greater Noida.

OBJECTIVES OF THE STUDY WERE:

- To assess the pre-interventional level of knowledge regarding anemia and its prevention during pregnancy among antenatal mothers of selected hospital of Greater Noida.
- To assess the effectiveness of Structured Teaching Program on knowledge regarding anemia and its prevention during pregnancy among antenatal mothers of selected hospital of Greater Noida.
- To find out the association between the post- test knowledge score and selected demographic variables.

THE HYPOTHESIS FOR THE STUDY WERE:

- **H_0**– There was no significant difference in pre-test and post-test knowledge score regarding anemia and its prevention during pregnancy among antenatal mothers.
- **H_1**- There was significant difference in pre-test and post-test knowledge score regarding anemia and its prevention during pregnancy among antenatal mothers**.**
- **H_2**-There was significant association between post-test knowledge scores and selected demographic variables.

The conceptual framework adopted for the study was based on PolitHungler theory. Conceptual framework represents a less formal and less well developed attempt at organizing phenomena than theory and deal with abstractions that are assembled by virtue of their relevance to a common theme.

A review of related research helped the researcher to develop tool. The literature review further enabled the researcher to develop a conceptual framework, methodology, tool for data collection and plan for data analysis.

The research approach for the study was pre experimental one group pre-test post-test design. The study was conducted among antenatal mothers of selected hospital of Grteater Noida.

Major findings of the study were:

Description of the Demographic sample characteristics:

- Majority of the samples 27 (90%) were in the age group of less than 20 years and 3 (10%) were in the age group between 20-29 years.
- Majority of the samples 20 (66%) were having secondary education, 5 (17%) were having primary education and 5 (17%) were graduates.
- Majority of the sample s25 (83%) were having the family monthly income more than Rs 10,000 and 5 (17%) were having family monthly income between Rs.5000-Rs.8000.
- Majority of women 23 (77%) were primigravida and 7 (23%) were multigravida.
- Majority of the samples 20 (66%) were in 1st trimester whereas 8 (27%) and 2 (7%) were in 2nd trimester and 3rd trimester respectively.
- Majority of the samples 32 (60%) were non vegetarian and 18 (40%) were vegetarian.
- All the demographic vaiables were not associated with post-test knowledge score, statistically not significant as calculated by using Chi square formula.

CONCLUSION

The following conclusions were drawn from the findings of the study:

- In pre-test 27 (90%) antenatal mothers were having good knowledge and 3 (10%) were having poor knowledge whereas in post-test 24 (80%) antenatal mothers were having good knowledge and 6 (20%) antenatal mothers were having excellent knowledge.
- The mean post test score (14.733) of antenatal mothers is higher than the mean pre test score (11.033), with the mean difference of 4.567. The obtained mean difference was found to be statistically significant as evident from the 't' value of (7.96) for df (29) at 0.05 level of significance which is greater than the table value (1.729).
- This shows that the obtained mean difference was a true difference and not by chance. Hence, null hypothesis (H0) was rejected and research hypothesis (H2) was accepted. It can be inferred that structured teaching programme was effective in terms of increasing the knowledge regarding anemia and its prevention during pregnancy.

NURSING IMPLICATIONS

- The present study has several implications in Nursing practice, Nursing research,
- Nursing administration and Nursing education.

NURSING PRACTICE

- The findings of the present study will help the antenatal mothers to enlighten their knowledge regarding prevention of anemia.
- antenatal mothers should be encouraged to prevent anemia for better health of baby as well as mother also.

NURSING RESEARCH

- There is a need for extensive and intensive research in methods of prevention of anemia so that strategies for educating nurse regarding prevention of anemia can be implemented.
- This study can be used as an access for further studies.

NURSING ADMINISTRATION

- The nursing administration should organize educational programme for the nursing students and nursing staff to update the knowledge related to advanced information regarding prevention of anemia amomg antenatal for reducing the incidence of death rate.
- Reading materials, reference books and nursing manuals must be made available for the student nurses regarding prevention of anemia for administering evidence based practices.
- The administrator must see that every nurse have adequate knowledge and skills in handling the aneamic patient and using the preventive treatment.

NURSING EDUCATION

- Specialized courses in handling the aneamic mother in ruraal area and using the preventive methods or treatment can be introduced to train nurse specialists.
- Nursing curriculum should include these topics to educate the student nurse.
- Findings of the study will help the nursing students to understand the importance of amemia.

LIMITATIONS

- The study was limited to Antenatal mothers.
- The study was limited to the prevention of Anemia among antenatal mothers
- The study was limited to UP only.

RECOMMENDATIONS

On the basis of findings of the study, the following recommendations are made:

- A similar study can be conducted with larger sample for better generalization
- A study can be done by using booklet to reduce the anemia among antenatal mothers.

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APPENDICES

APPENDIX 1

LETTER SEEKING PERMISSION FOR CONDUCTING RESEARCH STUDY

08/ 01/ 2020

To,

The Chief Medical Officer,

Govt. Institute of Medical Sciences,

Greater Noida, U.P.

SUBJECT: LETTER SEEKING PERMISSION FOR RESEARCH STUDY

Dear Sir/Madam

This is to introduce **Group A**, a final year B.Sc (nursing) student in this college. They need to conduct a research project, which is to be submitted to the **Galgotias University, Greater Noida** for the partial fulfillment of university requirement for the award of B.Sc. (N) degree.

Topic: "A Study To Assess The Effectiveness Of Structured Teaching Program Regarding Anemia And Its Prevention Among Antenatal Mothers In Selected Hospital Of Greater Noida"

The student is in need of your esteem support and co-operation as they are interested in conducting research study in your institution.

This is to request you to kindly extend necessary facilities to work on the proposed research study during 12th to 17th January, 2020.

Students will furnish further information if required regarding the research.

Thanking you,

Prof. (Dr.) Ashia Qureshi

Dean, School of Nursing

Galgotias University

APPENDIX 2

A CRITERIA RATING SCALE FOR EXPERT OPINION REGARDING CONTENT VALIDITY OF RESEARCH TOOLS

INSTRUCTION

Please go through the criteria listed below which has been formulated for the purpose of the study.

There are three alternative response columns given. Kindly put a tick (√) mark in the appropriate column.

COLUMN I - Strongly Agree.

COLUMN II - Agree.

COLUMN III - Disagree.

Kindly report your responses with appropriate comments/remarks and suggestions in the remark column, as your valuable comment will help the researcher to improve his / her effort.

S.No.	Criteria	I Strongly Agree	II Agree	III Disagree	Remarks

1.	**Formulation of Objectives** a) Comprehensive enough for the participants b) Realistic to achieve c) Objectives are in terms of respondents				
	Selection of the content **a)** Content provides accurate information as per the objectives **b)** Content is relevant. **c)** Content is appropriate **d)** Content is according to the level of the respondents.				
3.	**Organization of contents** **a)** Logical sequence. **b)** Maintains correlation. **c)** Integration of the content.				
4.	**Language** **a)** Simple and easy to understand. **b)** Scientific terms explained.				

5.	**Feasibility / Practicability** a) The tool content acceptable to the participants b) The tool content is to the level of the participants understanding. c) The tool content is conventional to handle and conduct. d) The tool content is interesting to the participants. **e)** The tool content is economical in terms of cost effort and time				

Suggestions:

Signature of the Validator

APPENDIX 3

INFORMED CONSENT

I am giving my consent to participate in the research study, **"A Study To Assess The Effectiveness Of Structured Teaching Program Regarding Anemia And Its Prevention Among Antenatal Mothers In Selected Hospital Of Greater Noida"**

I have been informed that my participation is entirely voluntary and that even after the study begins; I can refuse to answer (or) participate at any point of the time during the study. I have been fully informed about the nature of the study, the researcher responsibilities and likely benefits from this study.

Date:

Signature of the participant

APPENDIX 4.1

TOOL I : DEMOGRAPHIC DATA

Instructions: Choose the appropriate option among the alternatives given for each statement and place a tick mark (√) on corresponding answer.

Q1. Age in years

a) <20 ( )

b) 20-29 ( )

c) >30 ( )

Q2. Educational qualification

a) No formal education ( )

b) Primary ( )

c) Secondary ( )

d) Graduation and above ( )

Q3. Family income per month in rupees

e) <3000 ( )

f) 3000-5000 ( )

g) 5000-8000 ( )

h) >10000 ( )

Q4. Parity

c) Primigravida ( )

d) Multigravida ( )

Q5. Gestational age

e) 1st trimester ( )

f) 2nd trimester ( )

g) 3rd trimester ( )

Q6. Type of diet

h) Vegetarian ( )

i) Non-vegetarian ( )

APPENDIX 4.2 - TOOL II : KNOWLEDGE QUESTIONNAIRE

INSTRUCTION

- **Kindly answer all the questions**
- **There are 25 questions on selected conditions that cause danger in pregnancy and each have 4 options**
- **Choose a single appropriate option (a,b,c) and place it in the box given against each question**
- **If you do not know the answer you can choose the option (d)**

Q1. What do you understand if your doctor says that you are anemic?

a. A Pale tongue and eye

b. Low level of hemoglobin in the blood

c. Low level of blood in the body

d. Do not know

Q2. Which of the following features indicate that one may have anemia?

a. Pallor, fatigue and difficult breathing

b. Head ache, vomiting and blurred vision

c. Bleeding, abdominal pain and leg cramps

d. Do not know

Q3. Normal level of hemoglobin in a female is.

a. 10-11 gm/dl

b. 11-12 gm/dl

c. Above 12 gm/dl

d. Do not know

Q4. A pregnant women is tend to have anemia for the following reason

a. Increasing demands for iron for the growth of the baby

b. A positive family history of anemia in pregnancy

c. Decreasing demands for iron with increasing body weight

d. Do not know

Q5. You take precautions to prevent anemia in pregnancy, because it can cause.

a. Decreased blood pressure

b. Poor progress during labour

c. Poor growth of the baby

d. Do not know

Q6. Anemia lead to poor pregnancy outcome because,

a. The baby partially depends on the mother for food and nutrition

b. The baby totally depend on the mother for food and nutrition

c. The baby is completely independent for food and nutrition

d. Do not know

Q7. Which of the following food items you may add to your meals to avoid anemia?

a. Apple and guava fruit

b. Ground nut, jaggery and green leafy vegetables

c. Noodles, chicken and soft drinks

d. Do not know

Q8. Is it most preferable to treat anemia

a. When you plan your pregnancy

b. When you are found pregnant

c. When you are diagnosed to have anemia

d. Do not know

Q9. You will make sure whether you are anemic or not through

a. Examination of stool

b. Examination of urine

c. Examination of blood

d. Do not know

Q10. Which of the following you consider as correct information for yourself?

a. Every pregnant women should consume iron supplements as per doctors advice

b. Anemia in pregnancy can be prevented by increasing number of meals alone

c. Those with side effects for iron supplements should stop consuming it.

d. Do not know

Q11. **Which of the following, you consider as correct information for taking iron supplements?**

a. Empty stomach

b. Before meals

c. After meals

d. Do not know

Q12. **How can you prevent hook worm infestation that can cause and anemia?**

a. Washing hands before meals

b. Protecting the feet using slippers

c. Drinking boiled water

d. Do not know

Q13. **Why should you avoid consumption of tea after meals?**

a. It can reduce the absorption of iron

b. It can cause nausea and vomiting

c. It can lead to discolouration of teeth

d. Do not know

Q14. **A pregnant women confirms that she is anemic**

a. When there is weight gain and desire for certain food items

b. Hb level examination

c. When there is less appetite, nausea and vomiting

d. Do not know

Q15. To get iron absorbed in body which vitamin is needed?

a. Vitamin A

b. Vitamin C

c. Vitamin D

d. Do not know

Q16. How does anemia affects the growing baby in mother's abdomen?

a. It will not affect the baby

b. It will affect the growth of baby

c. It will affect the mother only

d. Do not know

Q17. How come anemia can affect the birth process?

a. Mother may feel breathing difficulty and baby may go in bradicardia

b. Will not affect anyone

c. Mother will get infection

d. Do not Know

Q18. What supplements the government is giving to prevent anemia during pregnancy?

a. Calcium tablets

b. Iron tablets

c. Vitamin E capsules

d. Do not know

Q19. What type of diet an antenatal women should take to prevent anemia.

a. Iron rich diet

b. Salt free diet

c. Fat free diet

d. Do not know

Q20. How the anemia is treated?

a. By giving calcium tablets

b. By give iron supplements, iron injections, iron rich diet

c. By giving high crbohydrate diet

d. Do not know

APPENDIX 5

GALGOTIAS SCHOOL OF NURSING, GREATER NOIDA

LESSON PLAN

ON

ANEMIA IN PREGNANCY

IDENTIFICATION DATA:

Group Name	- Group A
Topic	- Prevention of Anemia
Time	- 10 a.m.
Duration	- 30 minutes
Place	- GIMS Hospital
Group	- Antenatal Mothers
Size of the group	- 30
Date of presentation	-
Method of teaching	- Lecture cum discussion, Charts, Flash Cards
Previous knowledge of the group	- Group has little knowledge about prevention of anemia.

GENERAL OBJECTIVES:

At the end of the health teaching, group will be able to understand anemia in pregnancy, its management and prevention.

SPECIFIC OBJECTIVES:

At the end of the teaching, group will be able to:

- define the anemia in pregnancy
- enlist the types of anemia
- explain the effects of anemia on pregnancy
- discuss the risk factors of anemia
- explain the symptoms of anemia during pregnancy
- discuss the diagnostic test for anemia
- explain the management of anemia

TIME	SPECIFIC OBJECTIVE	CONTENT	TEACHING LEARNING ACTIVITIES	EVALUATION
1min. 2min	To introduce the topic. To Discuss about prevalence of Anemia in pregnancy	**ANEMIA IN PREGNANCY** **INTRODUCTION:** Anemia affects almost two-thirds of pregnant women in developing countries and contributes to maternal morbidity and mortality and to low birthweight. According to the recent standard laid down by 'WHO', anemia is present when the Hemoglobin (Hb) concentration in the peripheral blood is 11 gm/dl or less. The most common cause of anemia in pregnancy is lack of iron. Less often, it is caused by folic acid deficiency. In some populations, 80% of pregnant women are anemic. Those most at risk are women from low socio-economic groups and teenagers. **PREVALENCE:** • According to WHO estimates, up to 56% of all women living in developing countries are anemic. • In India, National Family Health Survey -2 in 1998 to 99 shows that 54% of women in rural and 46% women in urban areas are anemic. • The relative prevalence of mild, moderate, and severe anemia are 13%, 57% and 12% respectively in India (ICMR data).	Lecture cum Discussion Lecture cum Discussion	Explain the prevalence of Anemia in pregnancy
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

1 Min	To Discuss about types of anemia during pregnancy	Several types of anemia can develop during pregnancy. These include: • Iron-deficiency anemia • Folate-deficiency anemia • Vitamin B12 deficiency	Flash Cards	What do you understand by type of anemia during pregnancy?
5min.	To Discuss about effects of Anemia on pregnancy	**Maternal Effects** • Mild, anemia may not have any effect on pregnancy and labour except that the mother will have low iron stores and may become moderately to-severely anemic in subsequent pregnancies. • Moderate anemia may cause increased weakness, lack of energy, fatigue and poor work performance. • Severe anemia, however, is associated with poor outcome. The woman may have palpitations, tachycardia, breathlessness, increased cardiac output leading on to cardiac stress which can cause de-compensation and cardiac failure which may be fatal 5,8. • Increased incidence of pre-term labour (28.2%), pre-eclampsia (31.2%) and sepsis have been associated with anemia.	Charts	What do you understand by effects of anemia on pregnancy?
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

5 Min	.	**Fetal effects** • Irrespective of maternal iron stores, the fetus still obtains iron from maternal transferrin, which is trapped in the placenta and which, in turn, removes, and actively transports iron to the fetus. • Gradually, however, such fetuses tend to have decreased iron stores due to depletion of maternal stores. • Adverse perinatal outcome in the form of pre-term and small-for-gestational-age babies and increased perinatal mortality rates have been observed in the neonates of anemic mothers. • Iron supplementation to the mother during pregnancy improves perinatal outcome. • Mean weight, Apgar score and hemoglobin level 3 month after birth were significantly greater in babies of the supplemented group than the placebo group.	Charts	
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

3 Min 5min.	To Discuss about risk factors for anemia in pregnancy To Discuss about Symptoms of anemia in pregnancy	All pregnant women are at risk for becoming anemic. That's because they need more iron and folic acid than usual. But the risk is higher if you: • Are pregnant with multiples (more than one child) • Have had two pregnancies close together • Vomit a lot because of morning sickness • Are a pregnant teenager • Don't eat enough foods that are rich in iron • Had anemia before you became pregnant **The most common symptoms of anemia during pregnancy** are: • Pale skin, lips, and nails • Feeling tired or weak • Dizziness • Shortness of breath • Rapid heartbeat • Trouble concentrating In the early stages of anemia, you may not have obvious symptoms. And many of the symptoms are ones that you might have while pregnant even if you're not anemic. So be sure to get routine blood tests to check for anemia at your prenatal appointments.	Charts Lecture cum discussion	What do you understand by risk factors? Enlist the symptoms of anemia in pregnancy
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

2 Min	To Discuss about Diagnostic test of anemia in pregnancy	During your first prenatal appointment, you'll get a blood test so your doctor can check whether you have anemia. Blood tests typically include: • Hemoglobin test. It measures the amount of hemoglobin -- an iron-rich protein in red blood cells that carries oxygen from the lungs to tissues in the body. • Hematocrit test. It measures the percentage of red blood cells in a sample of blood. If you have lower than normal levels of hemoglobin or hematocrit, you may have iron-deficiency anemia. Your doctor may check other blood tests to determine if you have iron deficiency or another cause for your anemia.	Lecture cum Discussion	What do you understand by Diagnostics test of anemia in pregnancy?
5min	To Discuss management of iron deficiency anemia	**MANAGEMENT** • In developing countries, it is common to see patients of moderate and severe anemia late in pregnancy. • Although for prophylaxis the Government of India, Ministry of Health recommends 100 mg of elemental iron with 0.5 mg folic acid, for treatment more than 180 mg of elemental iron per day is required. • Three tablets of ferrous sulphate (available free of cost in most Indian hospitals) per day are required.	Charts	Discuss the management of iron deficiency anemia
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

5 Min		**ANTENATAL CARE** The antenatal management is like any other case, but more frequent visits are required. One should be vigilant to detect and manage complications of anemia, such as heart failure or preterm labour, as early as possible. Fetal monitoring for growth and well-being should be done as these fetuses tend to be small. Prognosis is good if anemia is detected and treated in time. **CONTRACEPTION** The anemic patient must use an effective method of contraception and should not conceive for at least 2 years giving time for Iron stores to recover. Sterilization is preferred if the family is completed. If there is no history of menorrhagia, an intra-uterine device can be inserted. Levonorgestrel intrauterine device (Mirena) can be used in presence of menorrhagia for contraception. It reduces blood loss but is expensive. Barrier methods can be safely given, but their higher failure rate is a disadvantage	Charts	What do you understand by management of iron deficiency anemia?
TIME	**SPECIFIC OBJECTIVE**	**CONTENT**	**TEACHING LEARNING ACTIVITIES**	**EVALUATION**

1 Min	To conclude the topic.	Nutritional deficiency anemia during pregnancy continues to be a major health problem in India. To eradicate it, certain steps can be taken at individual and community level like education of the women as regards anemia, its causes and health implication. Imparting nutritional education, with special emphasis on strategies based on locally available food stuffs to improve the dietary intake of proteins and iron, administration of appropriate iron supplements and ensuring maximum compliance, deworming, treatment of chronic disease like malaria and universal antenatal care to pregnant women will help in combating this serious problem. Long term policies by government, non-government agencies and the community can be directed to formulate effective plans like eradicating anemia in children and adolescent girls.		

Data sheet

APPENDIX 6.1

DATA SHEET OF DEMOGRAPHIC CHARACTERISTICS OF ANTENATAL MOTHERS SELECTED FOR STUDY

DATA SHEET ON DEMOGRAPHIC CHARACTERISTICS																															
S. NO	**CODE**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	DEMOGRAPHIC CHARACTERISTICS																														
Q1	**AGE**																														
a)	<20		√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√
b)	20-29	√									√									√											
c)	30 & above																														
Q2	**EDUCATIONAL QUALIFICATION**																														
a)	No formal education																														
b)	Primary		√									√	√						√									√			
c)	Secondary	√		√		√	√		√	√	√			√	√		√	√		√	√	√	√		√	√	√		√	√	√
d)	Graduate and above				√			√								√							√				√				
Q3	**Family income per month in rupees**																														
a)	<3000																														
b)	3000-5000																														
c)	5000-8000				√						√					√	√												√		
d)	>10000	√	√	√		√	√	√	√	√		√	√	√	√			√	√	√	√	√	√	√	√	√	√	√		√	√
Q4	**Parity**																														

a)	Primigravida		√	√	√	√		√		√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√		√			√
b)	Multigravida	√					√		√						√												√		√	√	
Q5	**Gestational Age**																														
a)	1st trimester					√	√		√	√		√		√	√	√	√	√		√			√	√	√	√	√	√	√	√	√
b)	2nd trimester	√	√	√				√					√						√		√	√									
c)	3rd trimester				√						√																				
Q6	**Type of diet**																														
a)	Vegetarian		√			√	√				√						√	√				√						√			
b)	Non-Vegetarian	√		√	√			√	√	√		√	√	√	√	√			√	√	√		√	√	√	√	√		√	√	√

APPENDIX 6.2 Data Sheet for pre-test scores on anemia and its prevention among antenatal mothers

QUES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL
CODE																										
1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	0	0	1	0	1	1	11
2	1	1	0	1	1	0	1	0	0	0	1	1	1	0	1	1	0	0	1	1	0	1	1	0	0	14
3	1	1	0	0	0	1	1	1	1	0	1	1	0	0	1	0	1	0	1	0	0	1	0	0	1	13
4	0	1	0	1	1	1	1	0	1	0	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	14
5	1	0	0	1	0	1	1	0	0	0	1	1	0	1	1	0	0	1	1	0	0	1	0	1	1	13
6	0	0	0	1	0	0	1	0	1	0	1	0	0	0	1	1	1	0	1	0	0	1	1	0	0	10
7	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	1	1	0	1	1	0	0	8
8	0	1	0	0	1	0	1	1	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	0	1	10
9	1	1	0	1	0	0	1	0	1	0	1	1	0	0	1	0	1	0	1	0	0	1	1	0	1	13
10	1	1	0	0	0	0	1	0	1	0	1	1	0	0	1	0	1	0	1	0	0	1	1	0	1	12
11	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1	1	0	0	1	0	0	0	7
12	1	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	0	0	1	0	0	1	0	1	0	9
13	1	0	0	1	1	1	1	0	1	0	1	1	1	1	0	0	0	0	1	0	0	1	1	1	0	14
14	1	0	0	0	0	1	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	1	1	0	10
15	1	0	0	1	0	1	1	0	1	0	1	0	0	0	1	1	0	0	1	0	0	1	0	1	0	11
16	1	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	0	0	1	9
17	1	0	1	0	0	0	1	0	1	0	1	1	0	1	1	1	0	1	1	0	1	1	1	1	0	15
18	1	1	0	0	1	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	10
19	1	0	0	1	0	0	1	0	0	0	1	1	0	1	1	0	0	0	1	0	0	1	0	1	0	10
20	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	0	0	1	0	0	1	1	0	0	8
21	1	0	1	0	0	1	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	1	1	1	0	11

22	1	1	0	0	1	0	1	0	1	0	1	1	0	1	1	0	0	1	1	0	0	1	1	0	0	13
23	1	1	0	1	0	1	1	1	1	0	1	0	0	1	1	0	0	1	1	0	0	0	1	1	0	14
24	1	1	0	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	1	0	0	1	0	1	0	9
25	1	1	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	1	1	1	1	12
26	1	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	1	0	11
27	1	1	0	0	1	0	1	0	0	0	1	1	0	1	1	1	0	0	0	0	1	1	1	1	0	13
28	1	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	1	1	0	0	0	9
29	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	0	0	1	0	0	1	1	0	0	9
30	0	1	0	1	0	1	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	9

APPENDIX 6.3Data Sheet for Post Test Scores on anemia and prevention among antenatal mothers

QUES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL
CODE																										
1	1	1	1	1	0	1	1	0	1	0	1	1	0	0	1	1	0	0	1	0	1	0	1	1	1	16
2	1	0	0	1	0	1	1	0	0	0	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	13
3	1	1	1	1	0	1	1	0	1	0	1	1	0	0	1	0	0	0	1	1	0	1	1	1	1	16
4	1	1	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	1	1	1	0	13
5	1	1	1	1	0	0	1	0	1	0	1	1	0	0	1	0	0	0	1	1	0	1	1	1	1	15
6	1	1	0	1	0	1	1	0	1	0	1	1	0	0	0	1	0	0	1	0	0	1	1	1	0	13
7	1	1	1	0	0	0	1	0	1	0	1	1	0	1	1	1	1	1	1	0	0	1	1	1	1	17
8	1	1	0	1	0	0	1	1	1	0	1	0	0	0	1	0	0	0	1	0	0	1	1	1	1	13
9	1	1	1	1	0	0	1	0	1	0	1	1	0	0	1	1	0	0	1	0	0	1	1	1	0	14
10	1	1	1	1	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	10
11	1	1	0	1	0	0	1	0	0	0	1	0	0	0	0	1	0	1	1	0	1	1	1	1	0	12
12	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	1	1	1	0	14
13	1	1	0	0	1	0	1	0	1	0	1	1	0	0	1	0	0	0	1	0	0	1	1	1	0	12
14	1	1	1	1	0	1	1	0	1	0	1	1	0	0	1	1	0	0	1	0	0	1	1	1	1	16
15	1	1	0	1	0	0	1	0	1	0	1	0	0	1	1	1	0	0	1	0	0	1	1	1	1	14
16	1	1	0	1	1	1	1	0	1	0	1	1	1	0	0	0	0	0	1	0	1	1	1	0	0	14
17	1	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	19
18	1	1	0	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0	1	0	0	1	1	1	1	16
19	1	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	1	1	1	1	0	17
20	1	1	1	1	0	0	1	0	1	0	1	0	0	1	1	1	1	0	1	0	1	1	1	1	0	16
21	1	1	1	0	0	1	1	0	1	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	0	15

22	1	1	1	1	0	1	1	0	0	0	1	1	0	1	1	1	0	0	1	0	1	1	1	1	0	16
23	1	1	1	1	0	1	1	0	1	0	1	0	0	0	1	0	0	1	1	0	0	1	1	1	0	14
24	1	1	1	0	1	1	1	0	1	0	1	1	1	0	0	0	0	0	1	0	0	1	1	1	0	14
25	1	1	1	1	0	0	1	1	0	0	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	18
26	1	1	0	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	1	0	12
27	1	1	1	1	0	0	1	0	1	0	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	18
28	1	1	1	1	0	1	1	0	0	0	1	1	0	1	1	1	0	0	1	1	0	0	1	0	1	14
29	1	1	0	1	0	0	1	0	1	0	1	1	0	0	1	1	0	0	1	0	0	1	1	1	1	14
30	1	1	1	1	0	0	1	0	1	0	1	1	0	1	1	1	0	0	1	0	1	1	1	1	1	17

APPENDIX 6.4

LIST OF FORMULAS USED

Mean:

$$\bar{x} = \frac{\sum x}{N}$$

Standard Deviation

$$SD = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

Paired t test

$$t = \frac{\bar{d}}{s_d \sqrt{n}}$$