" A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT"

Dissertation Submitted To

THE TAMIL NADU DR.M.G.R MEDICAL UNIVERSITY
CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT FOR DEGREE OF

MASTER OF SCIENCE IN NURSING

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INTERNAL EXAMINER	**EXTERNALEXAMINER**
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CERTIFICATE

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This is to certify that, this thesis, **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT,TAMILNADU"** submitted by **Mrs.L.MAHALAKSHMI II YEAR M.Sc. Nursing (2017-2019 Batch)** Arvinth College of Nursing in partial fulfillment of the requirement of the Degree in Master of Science (Nursing) from the Tamil Nadu Dr. M.G.R Medical University is her original work carried out under our guidance.

This thesis or any part of it has not been previously submitted for any other Degree or Diploma.

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INDEX

TABLE CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDICES

CHAPTER –I
INTRODUCTION

"Birthing is the most profound initiation to spirituality a woman can have."

-Robin Lim

Birth is a miracle and each baby is life's perfect creation. Pregnancy is often a time of hope for the future. Process of pregnancy and child birth are very much a personal journey .Each women experiences the beauty of creating and giving birth to a child.(**Walker J.2006)**

Although pregnancy is not a disease but a normal physiological process it is associated with certain risks to health and survival both for the woman and for the newborn she delivers. Pregnancy is associated with profound changes in the fat and carbohydrate metabolism. Glucose metabolism is characterized by a lower fasting plasma and elevated postprandial values in the early weeks. In later weeks carbohydrate metabolism is stressed by the rising levels of human chorionic somatotropin (hCS), prolactin, cortisol, and glucagons. These hormones cause decreased glucose tolerance and insulin resistance. A small pregnant population cannot withstand the physiological stresses accompanying pregnancy which result in abnormal glucose tolerance which causes Gestational diabetes mellitus.**(Pettitt DJ 2017)**

Diabetes mellitus is a multisystem disease related to abnormal insulin production, impaired insulin utilization or both. Diabetes mellitus is a serious health problem throughout the world. Diabetes mellitus is not modern disease. In 1500 B.C. Papyreus of ancient Egyptians recorded a number of remedies for passing urine. In 1000 B.C. itself Indian physician sushurutha diagnosed diabetes. In 1798, J.Jhon, the Greek physician found diabetes is associated with excess of glucose in blood. Discovery of insulin by Banting and Best in 1921 is a land mark in diabetes history. The term diabetes, refers to diabetes mellitus, which roughly translates to excessive sweet urine (known as "glycosuria"). (**Dawn, CS., 2011)**

The most common type of diabetes is diabetes insipidus(type1 diabetes) in which large amounts of urine are produced (polyuria),).The term type1 diabetes has replaced several former terms, including childhood-onset diabetes, juvenile diabetes, and insulin-dependent diabetes mellitus (IDDM). Likewise, the term type2 diabetes has replaced several former terms, including adult-onset diabetes, obesity-related diabetes, and non-insulin-dependent diabetes mellitus (NIDDM). Beyond these two types, type3 diabetes as: gestational diabetes.**(Hacker, et. al., 2014)**

Gestational diabetes mellitus (GDM) is a global health concern, not only because its prevalence is high and on the increase, but also because of the potential implications for the health of mothers and their offspring. **(Konong. S, et al 2016)**

Gestational diabetes is a type of diabetes that is first seen in a pregnant woman who did not have diabetes before she was pregnant. Some women have more than one pregnancy affected by gestational diabetes. Gestational diabetes usually shows up in the middle of pregnancy. Doctors most often test for it between 24 and 28 weeks of pregnancy.**(Mpondo BC 2015)**

Gestational diabetes mellitus (GDM) defined as any degree of carbohydrate intolerance with onset or first recognition during pregnancy contributes to about 90% of diabetes complicating pregnancy. GDM imposes risks for both mother and fetus, some of which continues throughout the life of mother and child. Immediate maternal complications include preeclampsia, need for cesarean sections, and poly/oligohydramnios. Complications in the baby include hyperinsulinemia, macrosomia, shoulder dystocia, neonatal hypoglycemia, and respiratory distress syndrome. Women with GDM are at an increased risk of GDM in future pregnancies and also at a higher risk of developing type 2 diabetes in the future. GDM also increases the risk of obesity and glucose intolerance in the offspring. GDM is therefore an important public health issue that has major repercussions for both mother and offspring. Detection of GDM thus provides a window of opportunity to intervense and reduce adverse perinatal outcomes. **(R Singh 2017)**

Prevalence of GDM has dramatically increased by 16-27% in the past 20 years among various ethnic groups. The International Diabetes Federation (IDF) estimates that as of 2015, 16.2% of women with live births had some form of hyperglycemia in pregnancy, 85% of which were due to gestational diabetes. There is a notable difference in the prevalence of GDM, with the South East Asia Region having the highest prevalence (87.6%) of all the low- and middle-income countries (LMICs), where access to care is often limited. Asian women are more prone to develop GDM than European women and Indian women have 11-fold increased risk of developing glucose intolerance in pregnancy compared to Caucasian women. Studies done in the 1980's have shown that the prevalence of GDM in India was 2%, which subsequently increased to 16.55% in 2000.**(Padubidri, v., 2006).**

Women diagnosed to have Gestational Diabetes Mellitus (GDM) are at increased risk of developing diabetes in future. Thus, diagnosis of GDM is an important public health issue. In a random survey 16.2% of pregnant women were found to have GDM in the Chennai urban population. Hence we undertook a planned community based study to ascertain the prevalence of GDM. We conducted a prospective screening for GDM in the urban, semi urban and rural areas. All pregnant women irrespective of gestational weeks underwent a 75 g glucose challenge test in the fasting state. Diagnosis of GDM was made if the 2 hr plasma glucose was > or = 140 mg/dl (WHO criteria). A total of 4151, 3960 and 3945 pregnant women were screened in urban, semi urban and rural areas, respectively. GDM was detected in 739 (17.8%) women in urban, 548 (13.8%) in semi urban and 392 (9.9%) in rural areas. Out of 1679 GDM women, 1204 (72%) were detected in first visit and the remaining 28% in subsequent visits. A significant increase ($P < 0.0001$) in the prevalence of GDM was observed with family history of diabetes, increased maternal age and BMI. A trend for increased prevalence of GDM was observed in women with less physical activity, however, not statistically significant. In this community based study, the prevalence of GDM varied in the urban, semi urban and rural areas. Age > or = 25 years, BMI > or = 25 and family history of diabetes were found to be risk factors for GDM.**(Lapolla, G 2017)**

Despites several decades of research, there are several constraints to GDM care, from screening to postpartum follow-up. Awareness and knowledge about GDM is poor even among health-care professionals (HCPs). There is an insufficient focus on prevention. Furthermore, lack of standardized protocols in screening and management and lack of coordination among HCPs involved in providing care for GDM often result in less than optimal care and poor follow-up during pregnancy and after delivery. The postpartum period provides an opportunity for lifestyle intervention to prevent future diabetes; however, this is often hindered by poor postpartum follow-up rates. Though there are several management protocols available for GDM, providing evidence-based care in resource-constrained settings is still a major challenge. To address these challenges and critical gaps in effective care for GDM, the Women in India with GDM Strategy (WINGS) project was developed in Chennai, India, offering a multidisciplinary approach to GDM care which could later be adopted in other resource constrained settings. **(Ernest A, Dee 2015)**

It is important for women with diabetes in pregnancy or GDM to carefully control and monitor their blood glucose levels to reduce the risk of adverse pregnancy outcomes with the support of their healthcare provider.

Giving awareness helps the antenatal women to achieve and maintain pregnancy and give birth to healthy infants. With the active participation of well motivated women in the treatment plan and careful management from a multidisciplinary health care team, positive pregnancy outcomes are often possible today.

NEED FOR STUDY:

Pregnancy is a particular time for all women. Diabetes mellitus is a global increase health problem. This condition becomes even more delicate when there is a diagnosis of GDM which makes necessary controls and therapies that will inevitably affect the woman's life.. GDM can lead to potential risks for the mother, fetus, and child's development, as well as clinically relevant negative effects on maternal mental health, above all in terms of a diminished Quality of life.**(M. G. Dalfrà, 2012)**

According to WHO report globally the number of increase individual projected to rise 366 million in the year 2030. India currently has the highest number of individuals with diabetes mellitus and it is projected to increase 79.4 million in the year 2030.

An estimated 21.3 million (16.2%) live births had hyperglycaemia during pregnancy in 2017, of which GDM contribution was 85.1% (IDF, 2017). Depending on the diagnostic criteria and ethnicity, 14.0% of all pregnancies are affected by GDM and ranges from <1.0% in Germany to 28.0% in Nepal (Jiwani et al., 2012). In US, the prevalence of GDM is 4.0 to 10.0% whereas in UK it is 5.0% (Agarwal et al., 2010; Gandhi et al., 2012). Nonwhite population has higher incidence of GDM compared to Caucasian (Solomon et al., 1997) and Asians especially among Indian Asians has highest GDM prevalence. **(Chu et al., 2009).**

Globally, 1 in 25 pregnant women develops GDM. In 2017, 1 in 7 births (>21 million live births) were affected by GDM. It is harrowing to know that in the South-East Asia region, where India is a major country, 1 in 4 live births were affected by GDM. With a projected increase of 84% in diabetes incidence by the year 2045, the incidence of GDM is also likely to escalate in the coming years. Considering the alarming figures given above, the prevention, timely screening, diagnosis and management of GDM is extremely crucial.India is the diabetes capital of the world with 41 million Indians having diabetes. Every fifth diabetic in the world is an Indian.Hence relatively pregnant population is at greater risk for developing diabetes in India and the prevalence is as high as 16.55%.**(The International Diabetes Federation 2018)**

The prevalence of gestational diabetes mellitus (GDM) has tremendously increased in the past few years, especially in the developing countries like India. Indian women have 11 times more risk of developing GDM as compared to women in other parts of the world. The prevalence of GDM in India varies in different regions with a reported prevalence of 3.8% in Kashmir, 9.5% in Western India, 6.2% in Mysore and 22% in Tamil Nadu. Differences in the prevalence rates across India could be attributed to differences in age, body mass index (BMI), socioeconomic status of females and cultural differences as well. (**Anjana RM 2011)**

V Seshiah et al 2017 surveyed the Prevalence of Gestational Diabetes Mellitus in Chennai urban, semi urban and rural areas. A In a random survey 16.2% of pregnant women were found to have GDM in the Chennai urban population. All pregnant women irrespective of gestational weeks underwent a 75g glucose challenge test in the fasting state. Diagnosis of GDM was made if the 2hr plasma glucose was ≥ 140mg/dl (WHO criteria). The results show the total of 4151, 3960 and 3945 pregnant women were screened in urban, semi urban and rural areas, respectively. GDM was detected in 739(17.8%) women in urban, 548(13.8%) in semi urban and 392(9.9%) in rural areas. Out of 1679 GDM women, 1204(72%) were detected in first visit and the remaining 28% in subsequent visits. A significant increase ($P < 0.0001$) in the prevalence of GDM was observed with family history of diabetes, increased maternal age and BMI. A trend for increased prevalence of GDM was observed in women with less physical activity, however, not statistically significant. The findings indicate the prevalence of GDM varied in the urban, semi urban and rural areas. Age ≥ 25 years, BMI ≥ 25 and family history of diabetes were found to be risk factors for GDM.

Rosemary Ogu 2018 et al was carried out a descriptive cross-sectional household survey involving 2595 women of reproductive age residing in five local government areas in the state. It employed a multi-stage sampling technique to collect data using an interviewer-administered questionnaire built using Open Data Kit (ODK) software uploaded on android mobile phones. The study results shows The response rate was 100%. Mean age was 29.25 ± 7.11 years. The majority (2,351;90.6%) had heard about diabetes Mellitus but only 991 (38.2%) knew that diabetes can occur for the first time in pregnancy. Only 747 (28.8%), 929 (35.8%) and 790 (30.4%) respondents had good knowledge scores for GDM definition and risk factors, GDM screening diagnosis and treatment and GDM complications respectively. Only 681 (26.2%) had good overall knowledge of GDM. The major sources of knowledge of GDM were from friends (49.8%), health workers (34.6%) and mass media (10.4%). These results underscore the need for information, education and communication (IEC) activities on a large scale targeted at women of reproductive age and their partners for prevention and control of GDM.

Bhatt AA,et al 2015 conducted community based survery research study on prevalence of Gestational diabetes by a house to house survey in rural population of Western India. A cluster of remote villages with little access to health care were chosen. The study revealed total of 989 women participated in the study out of which 9.5% (*n* = 94) were diagnosed as GDM. In a stepwise multivariate regression analysis a higher body mass index during pregnancy was a predictor of gestational diabetes. The prevalence of diabetes was similar in women with gestational age of >24 weeks and <24 weeks, suggesting the need for early screening. The study suggest the need for implementing health programs to diagnose and treat gestational diabetes in this population.

Gestational diabetes mellitus (GDM) is a primary concern in India affecting approximately five million women each year. Existing literature indicate that prediabetes and diabetes affect approximately six million births in India alone, of which 90% are due to GDM. management of GDM is challenging and controversial in India due to conflicting guidelines and treatment protocols, Also, a collaborative approach remains a key for GDM management, as patient compliance and proper educational interventions promote better pregnancy outcomes. Management of GDM plays a pivotal role, as women with GDM have an increased chance of developing diabetes mellitus 5–10 years after pregnancy. Also, children born in GDM pregnancies face an increased risk for obesity and type 2 diabetes. The cornerstone for the management of GDM is glycemic control and quality nutritional intake & self management. Health education among pregnant women remains a priority to resolve issues related to self-management. More broadly, further research, specifically qualitative is vital to determine forthcoming challenges with respect to patients, caregivers, providers, and policy makers and to provide solutions fitted to practice setting and demographic background.**(Morampudi S,2017)**

Bhavadharini B et al 2017 evaluate the study on knowledge of gestational diabetes mellitus (GDM), including risk factors, importance of screening and post-partum follow-up, amongst pregnant women attending antenatal care in maternity clinics in South India. The study participants were recruited from two antenatal clinics in Chennai and a few primary healthcare centres in South India. A detailed questionnaire was used to obtain basic data regarding general awareness and knowledge about GDM and other issues related to screening, risk factors, monitoring, long-term consequences and post-partum follow-up. Education status was graded as illiterate, primary education, secondary education and graduates. A composite score for

knowledge of GDM was calculated. The study results implicit that total of 100 pregnant women attending antenatal clinics were interviewed, of whom 59 were from urban Chennai and the rest from Kanchipuram district. Regarding risk factors of GDM, 48.8% of rural women were unaware of any risk factor while 55.9% of urban women reported a family history of diabetes as a risk factor. 49.2% of urban women and 75.6% of rural women did not know the long-term consequences of GDM to babies born to GDM women. 50.8% (urban women) said GDM could lead to type 2 diabetes mellitus in future while only 45% of rural women were aware of this. Mean composite score increased with higher education with graduates in both urban and rural areas, scoring the highest. The study concluded the Knowledge about GDM is poor amongest pregnant women, especially in rural areas. This highlights the need for training physicians, paramedical people and the public regarding GDM.

Hence considering above factors the researcher felt that appropriate knowledge and good practice including healthy eating habits, weight control and regular exercise, the complications of GDM can be prevented which permits mothers to live a better life with their off spring. To care for themselves all pregnant women require education and knowledge associated with preventing GDM.

STATEMENT OF THE PROBLEM:-

A study to assess the effectiveness of structured teaching programme on knowledge and practice regarding gestational diabetes among antenatal mothers in Arvinth Hospital at Namakkal District, Tamilnadu.

OBJECTIVES:-

1. To assess the level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.
2. To evaluate the effectiveness of structured teaching programme regarding gestational diabetes among antenatal mothers.
3. To find out correlation between the post test knowledge scores and Practice scores of antenatal mothers.
4. To determine the association between the post test knowledge and practice scores of antenatal mother regarding gestational diabetes with their selected demographic variables.

OPERATIONAL DEFINITIONS:-

Effectiveness :-

Refers to the significant improvement in the knowledge of antenatal mothers on gestational diabetes after the structured teaching programme.

Structured Teaching Programme:-

Refers to systematically planned group instructions designed to provide information's regarding gestational diabetes such as definition, risk factors, clinical manifestations, diagnosis, management and complications.

Knowledge:-

The information gained through education. In this study, it refers to the level of understanding and verbal responses of the antenatal mothers regarding the gestational diabetes which is measured by structured interview schedule.

Practice:

Practice means the way of doing something. In this study it refers to the knowledge on practice in terms of verbal responses of the antenatal mothers regarding the gestational diabetes and its management which is measured by structured interview schedule.

Antenatal Mother:-

Antenatal care refers to the care that is given to an expected mother from to time of conception (12 weeks to 34 weeks) is confirmed until the beginning of labour.

HYPOTHESIS

H1: There will be a significant difference between the mean pre-test and post-test knowledge and practice score of gestational diabetes among antenatal mothers.

H2: There will be a significant correlation between the post test knowledge scores and post test practice scores of gestational diabetes among antenatal mothers.

H3: There will be significant association between the post-test knowledge and practice score of gestational diabetes with their selected demographic variables of antenatal mothers.

ASSUMPTIONS

- Antenatal mothers have inadequate knowledge and practice on gestational diabetes.
- Antenatal mothers need education regarding gestational Diabetes.
- The structured teaching programme may enhance the knowledge and practice of antenatal mothers regarding gestational diabetes.

LIMITATION

- Antenatal mothers who are admitted in arvinth hospital, Namakkal
- 4 weeks of data collection
- Only those who are willing to participate in the study.
- Antenatal mothers who were present at the time of data collection

Conceptual Framework

It presents logically constructed concepts to provide general explanation of the relationship between the concepts of the research study, without using a single existing theory. Conceptual frame works are usually constructed by using researcher's own experience, previous research findings or concepts of several theories or models.

Polit and Beck, (2010) states that a conceptual frame work is inter related concepts on abstractions that are assembled together in some rational scheme by virtue relevance to common theme.

The present study was aimed to the effectiveness of structure teaching programme on knowledge and practice regarding gestational diabetes among antenatal mothers in Arvinth Hospital at Namakkal. The conceptual frame work of the study is based on Imogene M King's, theory of goal attainment.

Imogene M King put forward the theory of goal attainment, King received multiple honors and awards in the field of nursing. King (1997) stated that communication is the interchange of thoughts and opinions among individuals. Communication is the main key for facilitating mutability and trust between the researcher and the antenatal mothers. Communicate with each other and exchange their ideas regarding gestational diabetes.

King model states that it is a human process that can be observed in many situations when two or more people interact such as in the family and in social events. As nurses bring knowledge and skills that influence our perceptions, communications and interactions in performing the functions of the role. King's concept of nursing is applied to the study as follows; nursing is an interpersonal process of action, reaction, interaction and transaction whereby the researcher and the antenatal mothers share information about their perceptions in the nursing situation.

Perception

Perceptions is the person's representation of the reality. Concept of self, socio economic group, biological inheritance and educational back ground. In this study the researcher perceives that the antenatal mothers have lack of knowledge and practice regarding gestational diabetes .

Judgement

Judgement is defined as a dynamic and systematic process by which goal directed choice of perceived alternatives made and acted upon by individuals or groups to answer a question and attain a goal. In this study the judgement by the researcher is deciding to teach about gestational diabetes and judgement by the antenatal mothers are deciding to learn about gestational diabetes.

Action

Communication between the researcher and the antenatal mothers occurs thus creating action. In this study action by the researcher refers to the pre-test conducted by the researcher to assess the knowledge and practice on gestational diabetes of antenatal mothers. Action by the antenatal mothers refers to cooperating and filling the semi structured knowledge questionnaire and semi structured dichotomous questionnaire to assess the practice level given in the pre-test.

Reaction

Reaction occurs as a result of action. In this study the reaction is that the antenatal mothers lack of knowledge and practice regarding gestational diabetes.

Disturbance

Inadequate knowledge and practice of the antenatal mothers is the disturbance felt in the study.

Mutual goal setting

The researcher and the antenatal mothers mutually decide to enhance the knowledge and practice regarding gestational diabetes and to attain this goal the researcher prepares the structured teaching programme regarding gestational diabetes.

Interaction

Interaction is the process of perception and communication between person and environment, between person and person represented by verbal and nonverbal behavior that is goal directed. In this study the interaction is the structured teaching programme regarding gestational diabetes by the researcher to the high risk antenatal mothers.

Transaction

The transaction is purposeful interaction that leads to goal attainment, between the researcher and the antenatal mothers. Here the researcher assesses the effectiveness of structured teaching programme on knowledge and practice regarding gestational diabetes by post-test using same tool.

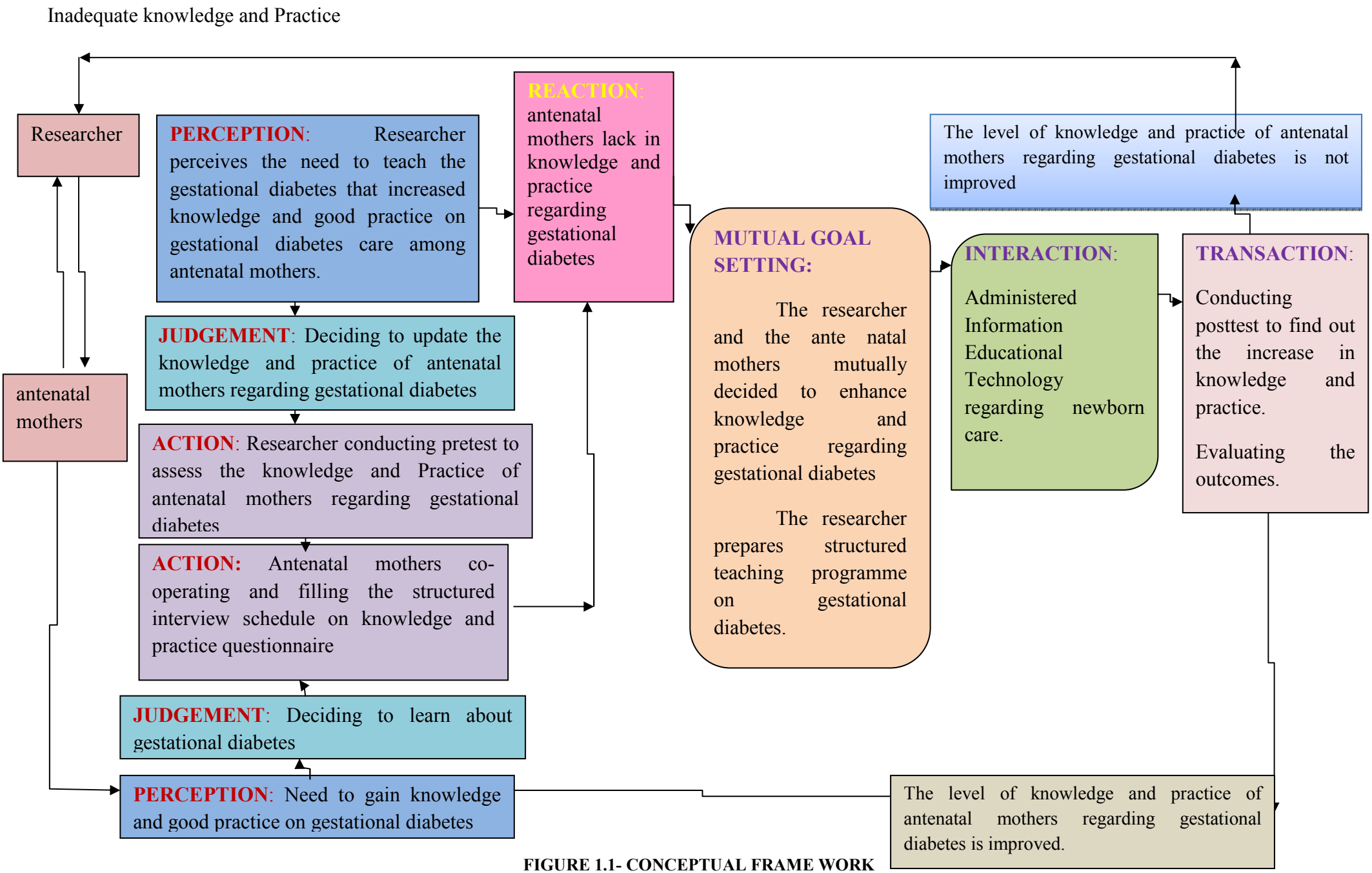


FIGURE 1.1- CONCEPTUAL FRAME WORK

CHAPTER- II

REVIEW OF LITERATURE

Literature review is defined as a broad, comprehensive, in depth, systematic and critical review of scholarly publication, unpublished printed or audio visual materials and personal communications. **(S.K. Sharma, 2011).**

Literature review can inspire new research ideas, and help to lay the foundation for studies. The literature review provides readers with a background for understanding current knowledge on a topic and illuminates the significance of the new study. **(Polit& Beck, 2010).**

Review of literature was done from published articles, text books and reports. The investigator reviewed and organized the related literature for the present study under the following headings;

- Review related to prevalence of gestational diabetes.
- Review related to Knowledge and practice of gestational diabetes.
- Review related to effectiveness of structured teaching programme on gestational diabetes.

Review related to prevalence of gestational diabetes.

Nirav K 2017 Surveyed the Prevalence of gestational diabetes mellitus and associated risk factors amongest antenatal women attending urban health centre of Rajkot City, Gujarat. This study enrolled women, with estimated gestational age between 24 and 28 week, attending UHC in Rajkot. After informing, women who consented to participate were given a standardized 75 g oral glucose tolerance test (OGTT). A proforma containing general information on demographic characteristics, socio-economic status, education level, parity, family history of diabetes and/or hypertension was filled up. Diabetes in pregnancy study group India (DIPSI) criteria for 75 g 2-h OGTT was used for diagnosing GDM.Results denoted that the total of 366 women participated in the study and GDM was diagnosed in 36 (9.8%) women. Age, parity, BMI, family history of DM and hypertension were accessed and found to be not significant. History of hypertension in previous pregnancy was statistically significant with occurrence of GDM in present pregnancy. The study concluding the

prevalence of GDM was found to be 9.8 per cent in a UHC, Rajkot. Appropriate interventions are required for control of GDM and modifications of risk factors.

1. Review related to Knowledge and practice of gestational diabetes

D. Lakshmi et al (2017) carried out a descriptive cross sectional study on knowledge about gestational diabetes mellitus and its risk factors among antenatal mothers attending care, urban Chidambaram. 191 antenatal mothers were participated, pre tested questionnaire was used to assess knowledge about GDM among all antenatal mothers attending OP.The study results shows that among the participants, 49.2% were in the age group of 21–25 years, 93.7% of them were housewives, 56.0% of them have studied up to higher secondary level and 72.8% of them were living in rural areas. In this study it was found that 35.2% of the participants had adequate knowledge about GDM and 21.5% had adequate knowledge about its risk factors. Education and residence were found to be associated with knowledge and risk factors of GDM which is statistically significant ($p<0.05$).The study conclude that the knowledge of antenatal women on GDM was just average. There is a need for training the physicians, paramedical people, and public regarding GDM. Health education programs must be conducted to improve the awareness among antenatal women for better utilization of health services.

Kusemwa P (2018) conducted on Knowledge of Gestational Diabetes Mellitus and Self Care Practices in Pregnancy. The study participants were recruited from two antenatal clinics in Chennai and a few primary healthcare centres in South India. A random sample of 200 pregnant women aged 18 - 45 years were selected. Data were collected using a structured interview schedule. The findings of the study denoted a total of 100 pregnant women attending antenatal clinics were interviewed, of whom 59 were from urban Chennai and the rest from Kanchipuram district. Regarding risk factors of GDM, 48.8% of rural women were unaware of any risk factor while 55.9% of urban women reported a family history of diabetes as a risk factor. 49.2% of urban women and 75.6% of rural women did not know the long-term consequences of GDM to babies born to GDM women. 50.8% (urban women) said GDM could lead to type 2 diabetes mellitus in future while only 45% of rural women were aware of this. Mean composite score increased with higher education with graduates in both urban and rural areas, scoring the highest. The study highlight the

knowledge about GDM is poor amongest pregnant women, especially in rural areas. This highlights the need for training physicians, paramedical people and the public regarding GDM.

Dr. Rajendra Kumar Mahore et al (2017) carried out a Cross-sectional study on Comparison of Knowledge and practice of Women with Gestational Diabetes Mellitus and Healthy Pregnant Women Attending at Hospital in Bangladesh. This study involving 1374 participants was conducted in 15 outpatient clinics of Diabetic Association of Bangladesh. Pretested interviewer-administered questionnaire was used to obtain information related to sociodemographic status, level of education, types of profession, and medical history. The questionnaire included eight questions on GDM. Level of knowledge (mean ± 1 standard deviation [SD]) was categorized as poor, average, and good. Descriptive, Chi-squared, and regression analysis were performed to express the results. The result shows that the total knowledge score of 8, participants' mean knowledge score (±SD) was 2.7 ± 1.5. The levels of good, average, and poor knowledge were 26.3%, 63.1%, and 10.6%, respectively. In multivariate analysis, participants aged below 30 years ($P < 0.001$), male gender ($P < 0.001$), high-income group ($P < 0.001$), having university education ($P < 0.001$), health professionals ($P < 0.001$), capital Dhaka city residents ($P < 0.001$), those with family history of diabetes ($P = 0.007$), and participants with diabetes ($P = 0.007$) were found to be significantly associated with the good knowledge score. In practice score of 8, participants' mean practice score (±SD) was 3.7 ± 1.5. The levels of adequate, inadequate, moderate practice were 22.3%, 60.1%, and 12.8%, respectively. The study concludes that Participants in this study had average knowledge and inadequate practice about GDM. New innovative strategies should be developed to improve the knowledge of GDM among health professionals and general population.

Mohamed Asif Padiyath et al., (2016) explore the pregnant women's practice about the prevention of gestational diabetes mellitus. Aim of the study was practice' of at-risk pregnant women about the role of lifestyle and diet in the prevention of GDM in large midwifery group practice at Australia. The methodology used for this study is qualitative and was informed by phenomenology. A purposive sample of six women over 30 years old participated in a conversational interview using an interview guide. Results indicate that a range of gaps in the women understands of how lifestyle and diet can reduce the risk of GDM. Gaps included misconceptions about the cause of GDM, an incomplete understanding of lifestyle risk factors, limited awareness of the effect GDM has on mother and baby, incomplete practice of a healthy diet and exercises, the study results the lack of dietary and lifestyle practice demonstrated. In this study

may suggest that women need more appropriate health information on practice of healthy diet and exercise during their antenatal care.

Amina Abdo Salhi et al, (2019) did study to assess the knowledge of the effects of GDM on mothers and neonates among pregnant women. This cross-sectional study included direct interviews and an electronic questionnaire-based survey for the data collection. The study was conducted at Maternity & Children's Hospital in the city of Najran, Saudi Arabia, between May and August 2018.the results shows that a total of 502 women, that 71.3% and 65.2% of the participants believed that GDM had no effect on mothers and neonates, respectively. Regarding the effect of GDM on mothers, 63%, 60%, 65.7%, and 71.1% of the participants were unsure of whether GDM can increase the risk of oligohydramnios, induction of labor, postpartum hemorrhage, and placental abruption, respectively. Regarding neonatal complications, 70.7% and 68.5% of the participants were unsure of whether GDM can increase the risk of shoulder dystocia and breech delivery, respectively. The factors significantly related to pregnant women's awareness of the effects of GDM were educational level, nationality, number of pregnancies, GDM, and chronic hypertension ($p = 0.05$).Conclusion: This study found that pregnant women had inadequate knowledge regarding the effects of GDM on mothers and neonates. Educational level was associated with improved knowledge. Pregnant women need access to specific programs provided by health care providers to improve their knowledge.

Hussain Z et al (2013) conducted a descriptive cross-sectional study on knowledge and practice of gestational diabetes among GDM pregnant women at Penang General Hospital, Penang, Malaysia. The sample consists of 30 established patients of GDM who were diagnosed at least 1 month prior to enrolment. Data were collected by means of self-designed Gestational Diabetes Mellitus Knowledge Questionnaire, modified version of Diabetes Integration Scale (ATT-19) for practice and Diabetes Treatment Satisfaction Questionnaire. Descriptive analysis was used for data elaboration by using SPSS 20.The results showed that of 30 patients, 23 patients (76.6%) had inadequate knowledge. Only, 7 (23.3%) patients had adequate knowledge. For practice, 23 (76.66%) of patients had a negative practice toward disease and only 7 (23.3%) had a positive practice. In terms of satisfaction, 25 (83.33%) patients were satisfied with the given treatment and 5 (16.66%)were unsatisfied.The study concludes that although participants obtained inadequate knowledge and treatment satisfaction, their practice were inadequate so there is on improvement by providing better care and health education for antenatal mothers.

Vanishree Shriraam 2013 carried out a study to determine the awareness of GDM among all the antenatal women who attend a Primary Health Center (PHC) for antenatal care. A pretested questionnaire consisting of details on background characteristics, 12 questions focusing on Type 2 DM and GDM, and a question on the source of knowledge was administered to all women attending the antenatal clinic. Their responses were scored and the women were graded as having good, fair, or poor knowledge about GDM. One hundred and twenty antenatal women participated in the study. Results show the Mean age of the women was 23.8 years (SD: 2.94). Overall, 17.5% women had good knowledge, 56.7% had fair knowledge, and 25.8% women had poor knowledge about GDM. The awareness that untreated GDM may pose a risk to the unborn child was high among the study women. Health care workers have to play a greater role in bringing about awareness about GDM among antenatal women.

Ahmad S. 2017 did a cross-sectional study to assess Saudi women's GDM knowledge and awareness between August and December 2016 in Saudi.12 questions were focused on awareness and knowledge about GDM. Their responses were scored, and participants were divided poor knowledge (≤ 4/12) fair/good knowledge (≥ 5/12).A total of 9002 adult female participated. Mean age was 27.8 ± 7.9, and they were mainly married urban residents with bachelor's degrees or higher. The mean overall score was 5.5 ± 2.5 with most of them in the fair GDM knowledge category. Participants were mostly aware of the GDM risk factors (54%) while they were least aware of the GDM diagnosis (15.9%). Multigravida and a prior history of GDM were the two risk factors about which participants were most aware (67.7%). Compared to those with poor knowledge, those with fair/good knowledge were more likely to live in urban areas, live in the central region of Saudi Arabia, work in medical fields, and be married, educated, and have personal and/or family histories of chronic diseases (all P values < 0.001).The study showed a high prevalence of poor awareness and knowledge, mainly in those areas relating to GDM diagnosis.

Lucy Anne Price 2016 carried out a study on knowledge and practice of Gestational Diabetes and its Risk Factors among Pregnant Women in Samoa.The purpose of this study was to investigate the knowledge of GDM and its risk factors among pregnant women in Samoa, exploring

where participants obtained information, and understanding their practice towards diet and physical activity. A quantitative cross-sectional study of 141 women attending Tupua Tamasese Meaole (TTM) hospital in Apia, Samoa in May 2015 was performed. Fifty-eight percent women were aware diabetes can occur for the first time during pregnancy. The greatest information source was from doctors (37%, n=44) followed by family members (22%, n=28), based on 118 respondents. Only one woman correctly identified all four risk factors for GDM. In practice, most women recognized eating a unhealthy diet (79%) and irregular physical activity (78%) to be considered the less practice to prevent GDM. These findings suggest awareness of GDM among pregnant women in Samoa is mixed, with a very small proportion having good knowledge (based on the number of risk factors identified) and less practice on healthy diet and excercise. We conclude that increased education about GDM is necessary, both in hospital clinics and within the community.

Review related to effectiveness of structured teaching programme on gestational diabetes

Kayal A 2016 conducted a study to assess the effectiveness of model of care (MOC) for women with gestational diabetes mellitus (GDM) in low- and middle-income countries of the Women in India. The WINGS (Women in India with Gestational Diabetes Mellitus Strategy) project was carried out in Chennai, Southern India, in two phases. In Phase I, a situational analysis was conducted to understand the practice patterns of health-care professionals and to determine the best screening criteria through a pilot screening study. Results shows Phase II involved developing a MOC-based on findings from the situational analysis and evaluating its effectiveness. The model focused on diagnosis, management, and follow-up of women with GDM who were followed prospectively throughout their pregnancy. An educational booklet was provided to all women with GDM, offering guidance on self-management of GDM including sample meal plans and physical activity tips. A pedometer was provided to all women to monitor step count. Medical nutrition therapy (MNT) was the first line of treatment given to women with GDM. Women were advised to undergo fasting blood glucose and postprandial blood glucose testing every fortnight. Insulin was indicated when the target blood glucose levels were not achieved with MNT. Women were evaluated for pregnancy outcomes and postpartum glucose tolerance status. The WINGS MOC offers a comprehensive package at every level of care for women with GDM. If successful, this MOC will be scaled up to other resource-constrained settings with the hope of improving lives of women with GDM.

Dhanalakshmi, J (2010) determine the Effectiveness of structured teaching programme regarding gestational diabetes mellitus in terms of knowledge and practice among antenatal mothers with gestational diabetes mellitus attending outpatient department at GKNM hospital, Coimbatore. Outcome of the study indicates Structured teaching programme will help the gestational diabetic mothers, to gain knowledge regarding the gestational diabetes mellitus which will help the mother to take care of herself during her antenatal period like following diabetic dietary pattern, taking insulin and regular exercise, to maintain her blood glucose in the normal range, and to prevent complications to the mother and fetus like preterm labour, polyhydramnios, shoulder dystocia, perineal injuries, puerperal sepsis, fetal macrosomia, congenital malformations, and recurrence of gestational diabetes in future and helps deliver a healthy baby**.**

Josan P 2015 identified the Effect of Structured Teaching Programme on Knowledge Regarding Gestational Diabetes Mellitus among Antenatal mothers Admitted in Selected Hospitals of Jalandhar(Punjab).In this pre-experimental design study a sample consisting of 60 antenatal mothers was selected by non-probability purposive sampling techniques. Self-structured questionnaire tool was used for assessing the knowledge of antenatal mothers. On day 3, post-test was conducted using the same structured questionnaire for assessing the effectiveness of structured teaching programme. Mean percentage of the knowledge score of post-test (16.83) was higher than pre-test (9). The't' value for total pre-test and post-test was 14.2193. The findings of the study concluded that 'Instructional Teaching Programme' (ITP) was effective to increase the knowledge of antenatal mothers regarding gestational diabetes.

Smitha K.R(2010) investigated the Mangalore. The research approach used for the study was an evaluative approach. The conceptual framework was based on Becker and Rosenstock's modified Health Belief Model. A sample of 30 gestational diabetes women were selected by the purposive sampling technique. The data was collected by using demographic proforma, structured knowledge questionnaire on self care management of gestational diabetes mellitus. After collecting data, self instructional module was administered to the subject and on 7th day post test was conducted using the same questionnaire. The data collected was analyzed to achieve the objectives of the study and to test the research hypotheses using descriptive and inferential statistics. The analysis of the pre test knowledge revealed that, (26.66%) of the women had poor knowledge whereas (20%) of them had good knowledge about self care management of gestational diabetes

mellitus. In post-test, majority (63.33%) of women had good knowledge, remaining (36.67%) average knowledge and none of them had poor knowledge. The findings of the study concluded that the majority of gestational diabetes mothers had poor knowledge regarding self care management of gestational diabetes mellitus.

Vineeta Dhyani 2018 did randomized controlled cross-sectional study to assess the implications of clinical pharmacist information on gestational diabetes mellitus at a teaching hospital in karnataka southern India. The study was carried out for a period of 4 years. Pregnant women with GDM were divided into control (C) and interventional (I) groups. Group C patients received only physicians' counselling whereas, group I patients received both clinical pharmacist counselling and physicians' counselling. Both the groups were screened for blood glucose levels at baseline and follow-up. Results shows A total of 500 (group C, n=250 and group I, n=250) mothers diagnosed to have GDM participated in the study and randomized into two groups. Initially the knowledge of GDM among pregnant women was poor. After the clinical pharmacist counselling, knowledge was enhanced, which prompts better education and use of new methods such as phemplets, audio visual methods and flipcharts. The results of this study showed noteworthy changes in knowledge after clinical pharmacist.

EI Toony LF 2018 carried out a prospective study to evaluate the effectiveness of an individualized educational program in improving patient's awareness, knowledge, and attitude and to assess its role in reducing the burden of gestational diabetes mellitus. Women diagnosed to have GDM at 24–28 weeks of gestation according to The Diabetes in Pregnancy Study group India criteria 2015 (2 h blood glucose ≥140 mg/dl) between December 2015 and December 2016 who were enrolled into an individualized GDM educational program. A modified and shortened version of a validated questionnaire developed by Carolan and colleagues was tested before and after education to evaluate the feedback of education. Follow-up was every 2 weeks till labor to assess awareness together with both maternal and fetal outcomes. Outcome of the study results that a total of 60 pregnant women diagnosed to have GDM were included. The questions that were answered correctly in the post-test by more than 50% of the participants fell into these categories: definition of GDM (100%), associated risk factors (75%), way of diagnosis (83.3%), management of GDM (71.7%), and postpartum follow-up (56.7%). As regards fetal and maternal outcome it was observed that both weight gain and glycemic control were better in the well-educated group versus

Other (*P*=0.02, 0.01, respectively).the study highlight the Health education plays an important role in increasing patients awareness regarding the GDM risk and its proper management in order to reduce its complications both for the mother and the fetus.

Ann Maria Thomas 2017 conducted a study to assess the Effect of Planned Teaching Programme on Knowledge and Practices in Relation to Prevention of Complications among selected Antenatal Mothers in a Selected Hospital in Chennai. A descriptive evaluatory approach was selected to assess the knowledge and practices of mothers before and after planned teaching. The sample consists of 60 mother's withthe age of 18 to 45, between 15 to 35th week of gestation and diagnosed as pre-eclampsia/anaemia/previous history of PIH or anaemia /elderly primigravida/grand multiparaity and the sampling technique was disproportionate quota sampling. Quasi experimental design was adopted where the group was assessed with structured questionnaire. Findings of the study revealed **t**he post test knowledge score (24.67) has significantly increased (53.15) and the post test practices score (25.72) has significantly increased (55.05).Hence it can be inferred planned teaching programme is effective. There is association of pretest knowledge and practice with selected demographic characteristic type of the family and duration of marriage. The study revealed that planned teaching programme regarding prevention of complications among selected antenatal mothers was effective as it improved the knowledge and practice level significantly.

CHAPTER-III

METHODOLOGY

Methodology of research refers to investigation to obtain, organize and analyze data. Methodological studies address the development, validation and evaluation of research tool (or) methods. **(Polit& Beck, 2010).**

This chapter deals with the description of methodology and different steps, which were adopted for gathering and organizing data for the investigation, achievement of the aims and objectives of the present study.

Methodology for the present study deals with research approach, Research design, Variables under the study, Study setting, population, Sample and Sampling technique, Sample size, Selection and Development of the tool, Development of information educational technology, Validity of the tool, Reliability of the tool, Pilot study, Data collection procedure and Plan for data analysis.

RESEARCH APPROACH

"It is an applied form of research that involves finding out how well a programme, practice, procedure or policy working."**(Polit & Beck, 2010).**

The research approach used for this study was quantitative evaluative approach.

RESEARCH DESIGN

Research design is the overall planning for collecting and analyzing data, including specifications for enhancing the internal and external validity of the study. **(Polit and Hungler, 2010)**

The research design used for the present study was

❖ **Pre experimental one group pre-test post-test design**

Group	Pre test	Intervention	Post test
I	O_1	X	O_2

The symbols used:

Group 1 – antenatal mothers with gestational diabetes.

O1 - Pre test - Collection of demographic data, assessment of knowledge and practice scores regarding the gestational diabetes.

X - Structured Teaching Programme on gestational diabetes by using laptop and compact disc.

O2 - Post test - Assess the knowledge and practice scores regarding gestational diabetes after the structured teaching programme.

VARIABLES UNDER STUDY

Variable

According to **Polit and Beck, (2010)** a variable is an attribute of a person or object that is, taken on different values.

Independent variables

Independent variable is a stimulus or activity that is manipulated or varied by the researcher to create an effect on dependent variable. The independent variable is also called a treatment or experimental variable. **(Suresh K. Sharma, 2014).**

In this study, structured teaching programme on gestational diabetes is the independent variable.

Dependent variables

Dependent variable is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain. **(Suresh K. Sharma, 2014).**

In this study, the dependent variable refers to the knowledge and practice regarding gestational diabetes among antenatal mothers.

Attributed variables

Attributed variables are preexisting characteristics of the study participants, which the researcher simply observes or measures to describe samples.**(Polit&Beck, 2010).**

Attributed or demographic variables are the characteristics of the subjects that are collected to describe the samples such as age, religion, occupation, area of residence, type of family and educational status.

STUDY SETTING

Study setting is the physical location and condition in which data collection takes place in the study. **(Polit & Hungler, 2004).**

The study was conducted in Aravindh Hospital, Namakkal. It is a private hospital. It has 3 floors and it is 150 bedded hospitals. It consists of the specialties such as ENT, Neurology, Cardiac, Cardiothoracic, Endocrinology, Eye, Oncology, Pediatric and NICU and specially Obstetrics and Gynecology departments. Obstetrics and Gynecology department has the service of outpatient department, inpatient department and labour theatre. It consists of 60 beds in inpatient department. The setting of this study was in the outpatient department. The census of the outpatient department in 2008 was about 300 cases of antenatal mothers every month, among that around 40 mothers were diagnosed to have gestational diabetes mellitus.

POPULATION

The entire set of individuals or objects having some common characteristics selected for a research study. **(polit and hungler,2013).**

The population for the present study were the antenatal mother.

TARGET POPULATION

Target population is the entire population in which the researcher is interested and would like to generalize the results of the study. **(Suresh K. Sharma, 2014).**

The target populations for the present study were the antenatal mothers in Arvinth hospital Namakkal.

ACCESSIBLE POPULATION

The aggregate of cases that conform to designated inclusion or exclusion Criteria and that are accessible as subjects of the study. **(Suresh K. Sharma, 2014).**

The accessible population for the present study includes a antenatal mother who meets the inclusive criteria.

SAMPLE AND SAMPLING TECHNIQUE

Sample:

Sample is a subset of the population selected to participate in a research study to generalize population characteristics. **(Polit and Beck, 2010)**

Sample for this study comprised of 50 antenatal mothers who were admitted in Arvinth hospital, Namakkal District.

Sampling Technique:

Sampling techniques refers to the process of selecting a portion of population to represent the entire population. **(Polit and Beck, 2011).**

Sampling technique used for this study was non probability purposive sampling technique.

CRITERIA FOR SELECTION OF SAMPLE

Inclusion criteria

antenatal mothers

- Was in 12 -36 weeks of gestation.
- Who had in stable condition.
- Who are willing to participate in the study.
- Who can communicate in Tamil language.

Exclusion criteria

- Mothers who are unwilling or unable to participate in the study.
- Mothers who were not available at the time of data collection.

SELECTION AND DEVELOPMENT OF INSTRUMENT

Selection of the instrument

The study methods used to collect data are intended to allow the researcher to construct a description of the meaning of the variables under study.

(Carol L. Macne, 2010).

Semi Structured knowledge and practice questionnaire was used as a research tool in this study. Since it was considered to be the most appropriate Instrument to elicit the response from study subjects.

Development of the instrument

The tool used for the study comprised of:

- Structured Interview Schedule on Knowledge Questionnaire
- Structured dichotomous practice Questionnaire
- Structured teaching programme on gestational diabetes

Preparation of the instrument

The steps selected for the preparation of tool was:

- Review of related literature.
- Preparation of blue print.
- Consultation with experts

1. Review of related literature

Literature related to the topic available from books, journals, periodicals, Published and unpublished research studies and articles were reviewed to develop the tool.

2. Preparation of blue print

The blue print of the items pertaining to the knowledge and practice on gestational diabetes was prepared as per objectives and the theoretical framework. The blue print included definition, incidence, causes, risk factors, signs and symptoms, management of gestational diabetes.

3. Consultation with experts

The investigator discussed the topic with experts in the field of obstetrical and gynecological nursing, education and statistics. Their opinion and suggestion were taken to modify the content. The research consultant and guide were consulted when finalizing the tool.

DESCRIPTION OF THE INSTRUMENT

The Instrument consists of three sections:

Section – A

It is a structured interview schedule which consists of demographic variables such as age, educational status, occupational status, religion, residence, type of family, family income per month , number of pregnancies, gestational age, dietary pattern, previous history of GDM.

Section -B

It consists of structured interview schedule on knowledge questionnaire which contains 30multiple choice question regarding gestational diabetes mellitus. Each question has four options, out of which one is the correct answer.

SCORING PROCEDURE:-

The questionnaire contains 30 multiple choice question to evaluate the knowledge regarding gestational diabetes. For each right answer the score "ONE" is given and for wrong answer the score "ZERO" is given.

Scoring for level of knowledge

Level of knowledge Percentage of score Actual score

Level of Knowledge	**Percentage of score**	**Actual score**
Inadequate Knowledge	0-50 %	0-15
Moderate Knowledge	51-75%	16-22
Adequate Knowledge	76-100%	23-30

Section – C

- ❖ It consists of structured dichotomous practice Questionnaire to assess the practice regarding gestational diabetes. It has 10 dichotomous Questionnaire with the alternative response of YES and NO. It has 6 positive questions and 4 negative questions.

Scoring the level of practice

A score of one (1) is allotted to the correct response and zero (0) to the wrong response

Level of practice	**Percentage of score**	**Actual score**
Inadequate practice	0-33 %	1-3
Moderate practice	34-66%	4-6
Adequate practice	67-100%	7-10

VALIDITY AND RELIABILITY OF THE TOOL

Content validity

The content validity of the tool and structured teaching programme on gestational diabetes was obtained from three experts in the field of nursing, two experts from medicine, education and bio statistics. All other comments and suggestion by the experts were duly considered and modifications were made. Based on expert's opinion, necessary changes were made in tool. The final draft of structured teaching programme was prepared after incorporating suggestions from the experts.

Reliability

The reliability of the tool was tested by implementing the structured interview schedule on knowledge and practice to 5 antenatal mothers in Arvinth hospital, Namakkal. Test-retest method where karl Pearson‟s correlation formula was used to find out the reliability of the knowledge questionnaire r =0.95 and for practice r=0.42. Hence the tool was found to be statistically reliable for the study.

Pilot Study

According to Polit and Hungler, (2011) "A pilot study is small scale version done in preparation for a main study."

The pilot study was conducted in Arvinth Hospital, Namakkal for a period of 15 days. The investigator obtained written permission from the medical officer and oral permission was obtained from each participant prior to the study. The purpose of the study was explained to the subjects prior to the study. Five antenatal mothers were selected by purposive sampling technique. Structured interview schedule on knowledge questionnaire was administrated to assess the knowledge and Structured interview dichotomous questions to assess the practice level on gestational diabetes among antenatal mothers before implementation of structured teaching programme. Immediately after the pre-test, structured teaching programme on gestational diabetes was implemented to the antenatal mothers. Evaluation of structured teaching programme on gestational diabetes was done by conducting post-test, seven days after the presentation by using same tool. The post-test mean knowledge and practice score were higher than the pre-test mean knowledge and practice scores. The results of the data revealed that the tool was feasible to conduct the study.

DATA COLLECTION PROCEDURE

Ethical consideration

Prior to the collection of data, written permission was obtained from the Medical superintendent of Arvinth Hospital, Namakkal.50 antenatal mothers were selected by using purposive sampling technique. The antenatal mothers were assured that anonymity of each individual would be maintained and informed consent was obtained from antenatal mothers.

Period of data collection

The data was collected from 50 antenatal mothers in Arvinth hospital, Namakkal from 4 weeks in month of April.

Pre-test

Pre-test was conducted for antenatal mother who were admitted in Arvinth hospital, Namakkal by administering structured interview schedule on Knowledge and practice questionnaire to assess the knowledge and practice on gestational diabetes among antenatal mothers. The data collected from 4-5 antenatal mothers per day for the period of one month.

Presentation of structured teaching programme

After the pre-test, structured teaching programme was administered tothe groups samples consist of 3-5 antenatal mothers through PowerPoint Presentation for the period of 25 to 30 minutes.

Evaluation of structured teaching programme / post-test

Evaluation of structured teaching programme was done by conducting post-test, 7 days after the presentation of the structured teaching programme by using the same semi structured knowledge and practice questionnaire.

PLAN FOR DATA ANALYSIS:

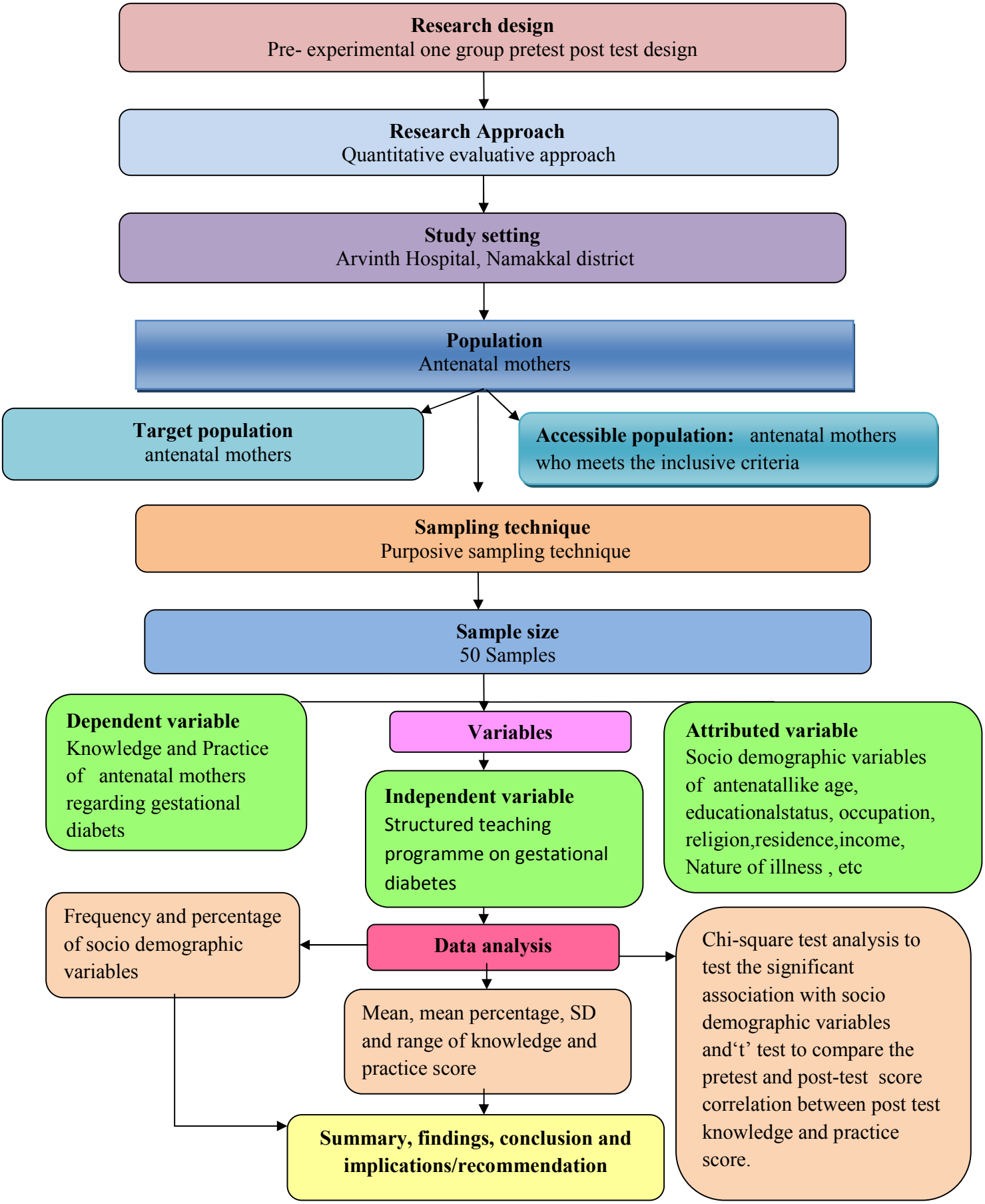
The data obtained were analyzed in terms of objectives of the study by using descriptive and inferential statistics. The plan for data analysis was as follows: Data were organized in master sheet.

- The frequencies and percentage was used for the analysis of socio demographic variables.
- Mean, Mean score percentage and standard deviation was used to assess the pre-test and post-test scores.
- Paired,,t"test was used to find out the effectiveness of structured teaching programme
- Correlation was used to find out to the relationship between post-test knowledge and practice of antenatal mothers.
- Inferential statistics especially chi-square test was used to determine the
- Association between the post-test knowledge and practice scores with their selected demographic variables.

SUMMARY:

This chapter dealt with the methodology undertaken for the study. It includes research approach, research design, description of setting, target population, sample and sample technique used, development and description of the tool, procedure for data collection and plan for data analysis.

SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



CHAPTER-IV
DATA ANALYSIS AND INTERPRETATION

Analysis is the process of organizing and synthesizing data so it helps to answer research questions and test hypothesis. Interpretation is the process of making the sense of results of a study and examining their implications. - **(Denise F. Polit, 2010)**

This chapter deals with the quantitative analysis and interpretation of collected data from a sample of 50 antenatal mothers in arvinth hospital, at Namakkal to evaluate the effectiveness of Structured teaching programme on knowledge and practice regarding gestational diabetes. The purpose of analysis is to reduce the data to an interpretable and meaningful form that, analysis results can be compared and significance can be identified.

The data which are necessary to provide the adequacy of the study were collected through semi structured knowledge questionnaire and dichotomous practice questionnaire.collected data were analyzed using relevant descriptive and inferential statistics. The substantive summary of the findings were arranged in line with objectives of this study.

OBJECTIVES

1. To assess the level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.
2. To evaluate the effectiveness of structured teaching programme regarding gestational diabetes among antenatal mothers.
3. To find out correlation between the post test knowledge scores and Practice scores of antenatal mothers.
4. To determine the association between the post test knowledge and practice scores of antenatal mother regarding gestational diabetes with their selected demographic variables.

PRESENTATION OF DATA

The findings of the study were grouped and analyzed under the following section;

Section I :

- Frequency and percentage distribution of socio demographic variables among antenatal mothers.

Section II :

- Assessment of pre - test level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.

Section III :

- Assessment of post - test level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.

Section-IV :

- Analysis the effectiveness of Structured teaching programme on gestational diabetes

  ✓ Comparison of pre-test and post-test knowledge scores regarding gestational diabetes among antenatal mothers .

  ✓ Comparison of pre-test and post-test practice scores regarding gestational diabetes among antenatal mothers.

Section V:

- Correlation between post-test knowledge and practice score regarding gestational diabetes among ante natal mothers.

Section VI :

- Association between post-test knowledge and practice score with their selected socio demographic variables of antenatal mother.

SECTION-I

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOCIO DEMOGRAPHIC VARIABLES AMONG ANTENATAL MOTHERS

Table 4.1.1: Frequency and percentage distribution of antenatal mothers according to their age

N=50

Age in years	Frequency	Percentage
Below 20 years	11	22
21-25 years	32	64
26-30 years	7	12
Above 30 Years	0	0
Total	50	100

Table 4.1.1 and figure 4.1.1 shows the distribution of mothers according to their age. Among them, majority of antenatal mothers 32(64%) were between the age group of 21-25 years, 11(22%) were in the age group of below 20 years, 7(12%) were in the age group of 26-30 years and none of them were in the age group of above 30 years.

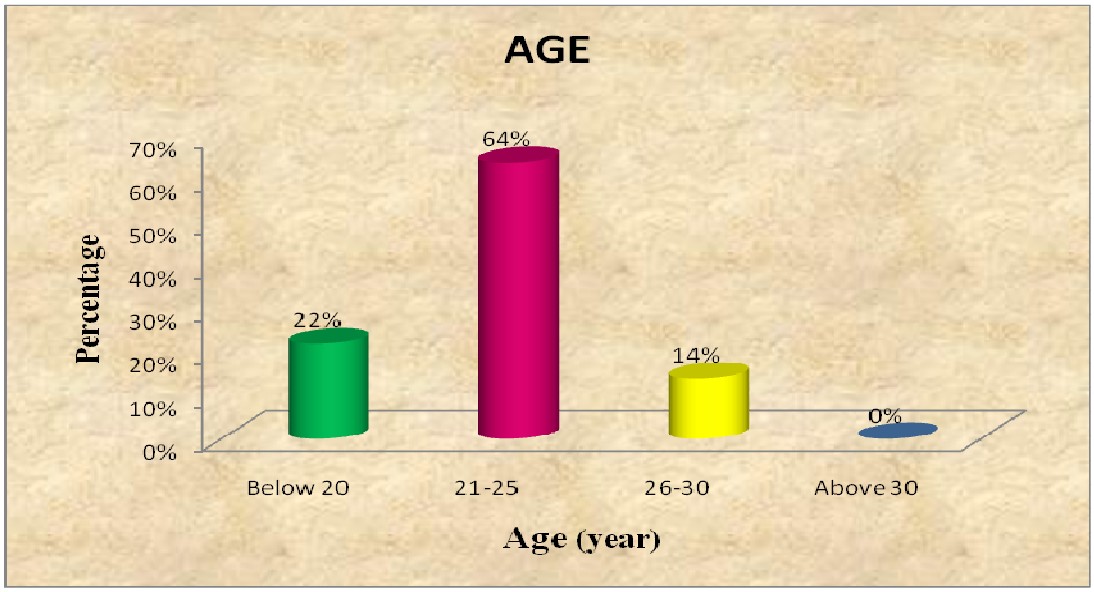


Fig 4.1.2 Percentage distribution of antenatal mothers according to their age in years

Table 4.1.2: Frequency and percentage distribution of antenatal mothers according to their educational status

N=50

Educational status	Frequency	Percentage
Primary school	15	30
Secondary school	8	16
Higher secondary	9	18
Graduate	8	16
No formal education	10	20
Total	50	100

Table 4.1.2 and figure 4.1.2 describes the distribution of antenatal mothers according to their educational status. Among the antenatal mothers majority of 15 (30%) were in primary school, 9 (18%) were in higher secondary school, 8 (16%) were in graduate, 8 (16%) were in secondary school and 10(20%) were not have formal education.

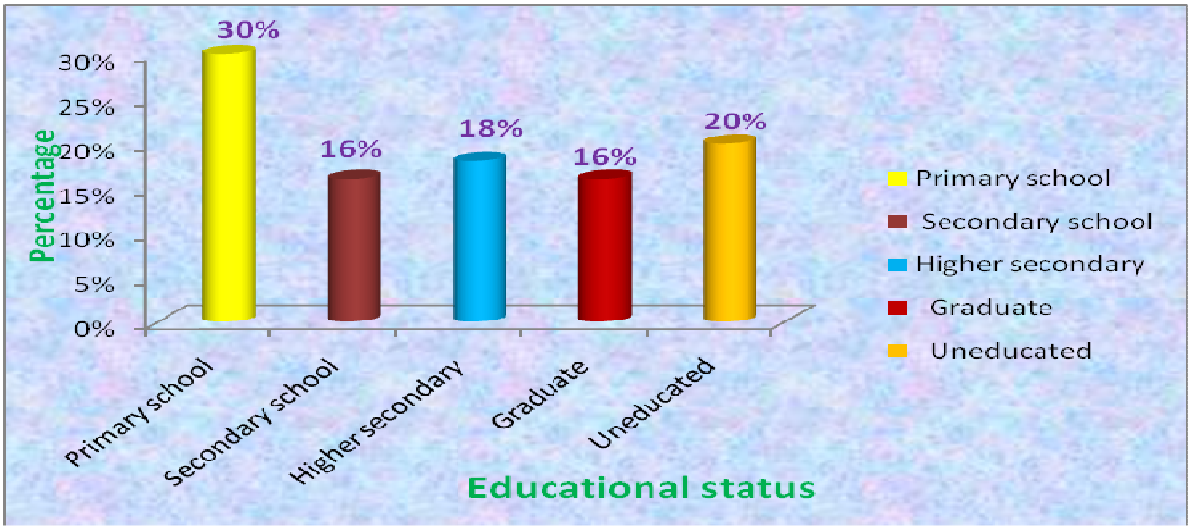


Fig 4.1.2 Percentage distribution of antenatal mothers according to their educational status

Table 4.1.3 Frequency and percentage distribution of antenatal mothers according to their occupational status

N=50

S.No	Occupational status	Frequency (50)	Percentage (%)
1.	House wife	29	58%
2.	Private employee	2	4%
3.	Government employee	3	6%
4.	Self employed	5	10%
5.	Daily wages	11	22%
	Total	**50**	**100%**

Table 4.1.3 & Figure 4.1.3 narrates the distribution of antenatal mothers according to their occupation. Among 50 antenatal mothers, majority 29(58%) were housewife, 11(22%) were daily wages, 5(10%) were self-employed, 3(6%) were government employee and 2(4%) private employee.

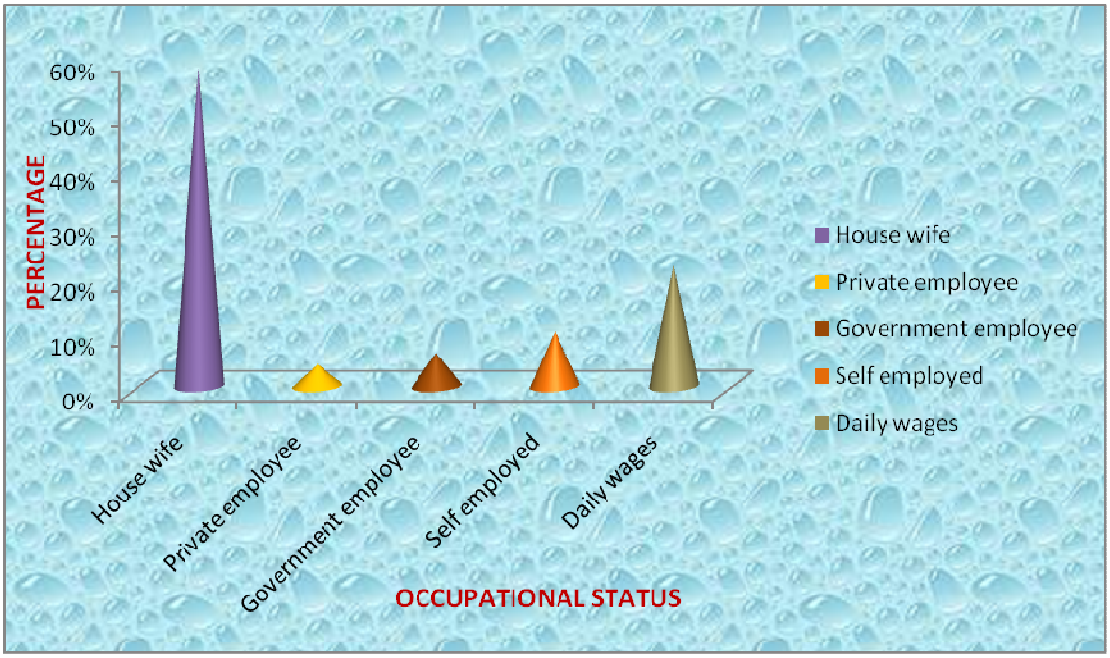


Fig 4.1.3 Percentage distribution of antenatal mothers according to their Occupational status.

Table 4.1.4 Frequency and percentage distribution of antenatal mothers according to their religion

N=50

S.No	Religion	Frequency (50)	Percentage (%)
1.	Hindu	42	84%
2.	Christian	5	10%
3.	Muslim	3	6%
4.	Others	0	0%
	Total	**50**	**100%**

Table 4.1.4 & Fig 4.1.4 illustrates the distribution of antenatal mothers according to their religion. Among the antenatal mothers, majority 42(84%) were Hindu, 5(10%) were Christian and 3(6%) were Musilm none of them were in others.

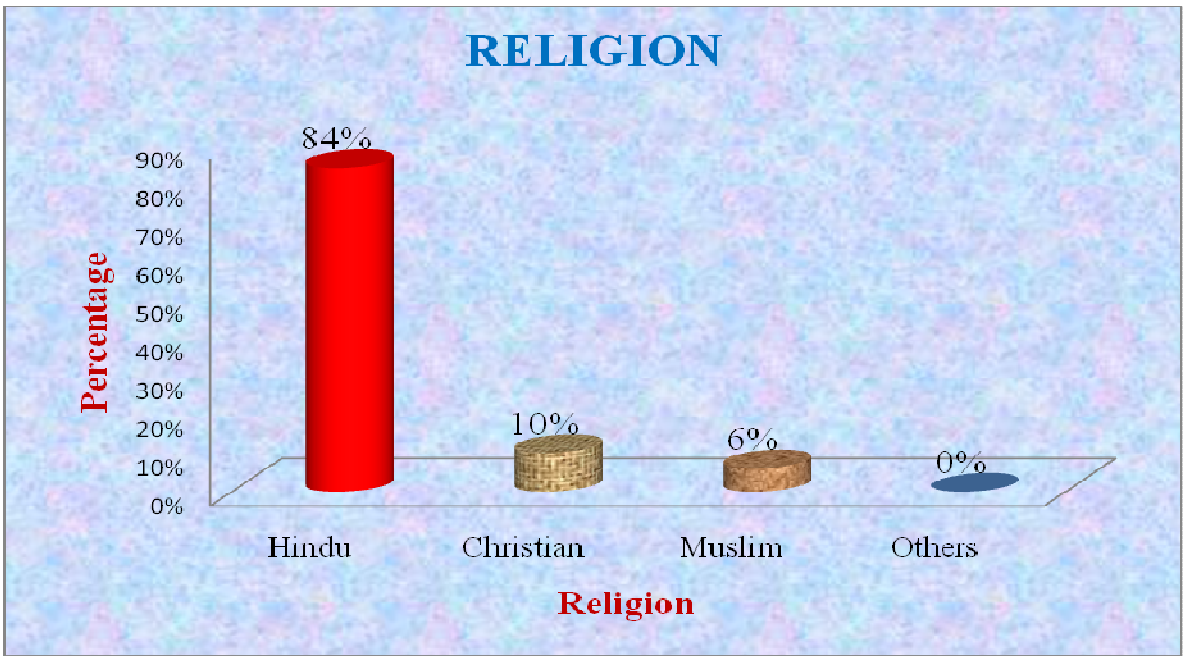


Fig 4.1.4 Percentage distribution of antenatal mothers according to their Religion

Table 4.1.5 Frequency and percentage distribution of antenatal mothers according to their Residence

N=50

S.No	Residence	Frequency (50)	Percentage (%)
1.	Urban	8	16
2.	Rural	39	78
3.	Semi urban	2	4
4.	Tribal	1	2
	Total	**50**	**100%**

Table 4.1.5& Fig 4.1.5 shows the distribution of antenatal mothers according to their residence. Among 50 antenatal mothers, majority 39(78%) were from rural area 8(16%) were from the urban area and the remaining 2(4%) were from semi urban and 1(2%) were from tribal area.

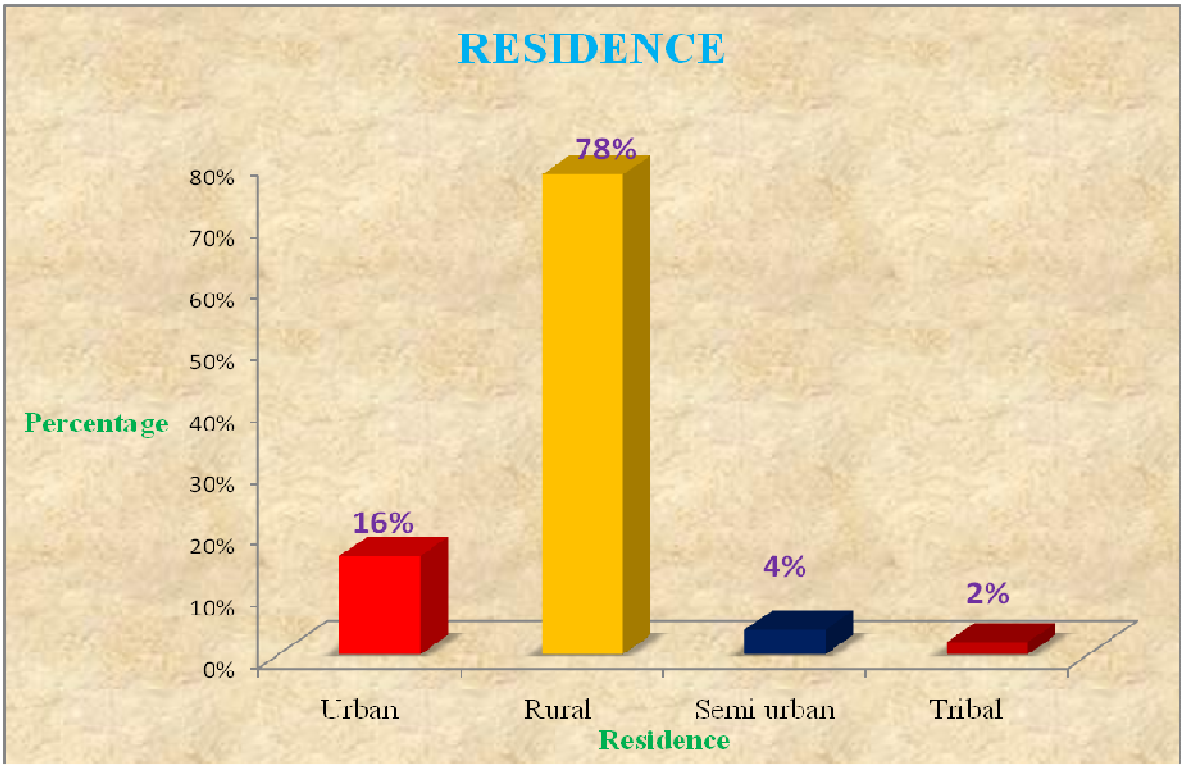


Fig 4.1.5 Percentage Distribution of antenatal mothers according to their Residence

Table 4.1.6 Frequency and percentage distribution of antenatal mothers according to their type of family

N=50

S.No	Type of family	Frequency (50)	Percentage (%)
1.	Nuclear	32	64%
2.	Joint	18	36%
	Total	**50**	**100%**

Table 4.1.6& Fig 4.1.6 describes the distribution of antenatal mothers according to their type of family. Among the antenatal mothers, majority 32(64%) belongs to nuclear family, and 18 (36%) belongs to the joint family

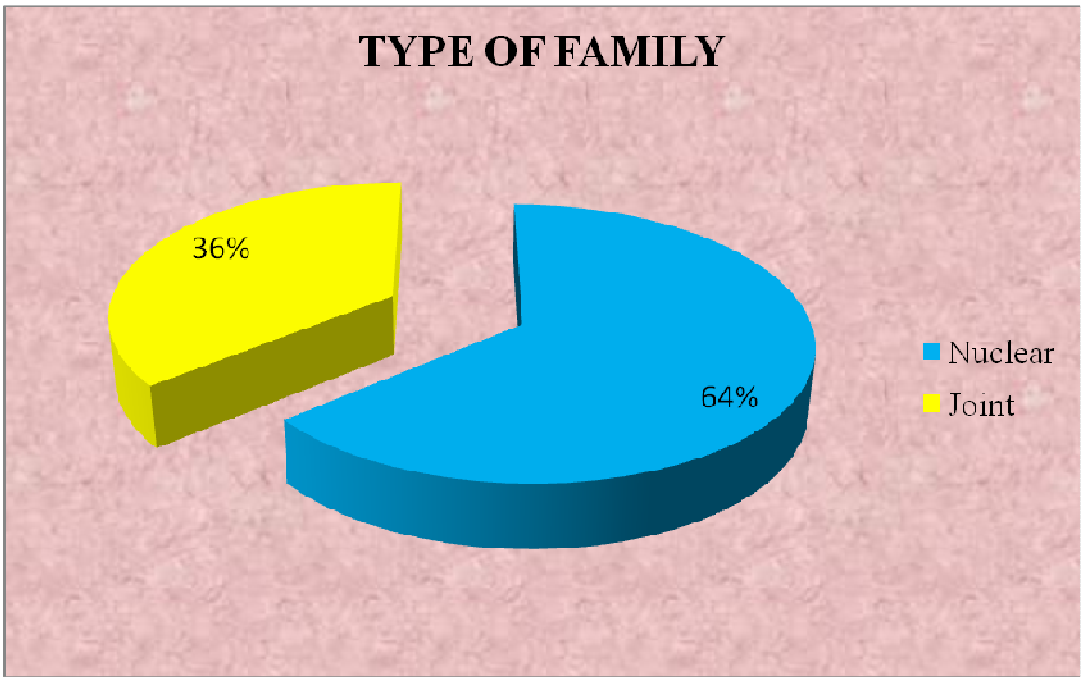


Fig 4.1.6 Percentage Distribution of antenatal mothers according to their type of family

Table 4.1.7 Frequency and percentage distribution of antenatal mothers according to their Family income

N=50

S.No	Family income(Rupees)	Frequency (50)	Percentage (%)
1.	Below 10000 Rs	20	40%
2.	Rs.10001-30,000	8	16%
3.	Rs 30,000 -50,000	13	26%
4	More than 50,000	9	18%
	Total	**50**	**100%**

Table 4.1.7& Fig 4.1.7 depicts the distribution of antenatal mothers according to their family income. Among 50mothers, majority 20(40%) had family income of below 10000 Rs, 13(26%) had family income between Rs.30, 000-50,000, 9(18%) had family income of more than Rs.50,000 . and the remaining 8 (16%) had family income between Rs.10001-30,000

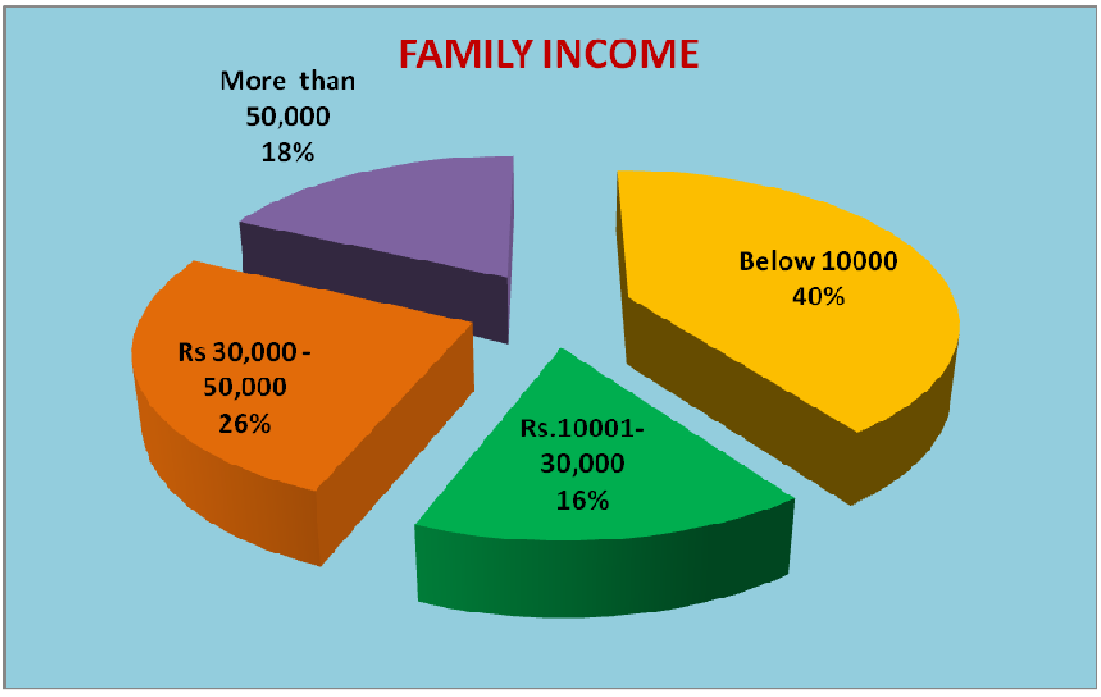


Fig 4.1.7 Percentage distribution of antenatal mothers according to their Family income

Table 4.1.8 Frequency and percentage distribution of antenatal mothers according to the Number of pregnancy

N=50

S.No	Number of Pregnancy	Frequency (50)	Percentage (%)
1.	Primigravida	32	64
2.	Multigravida	18	36
	Total	**50**	**100%**

Table 4.1.8 & Fig 4.1.8 shows the distribution of antenatal mothers according to the mode of delivery. Among 50 mothers, majority 32(64%) had primigravida, 18(36%) had Multigravida.

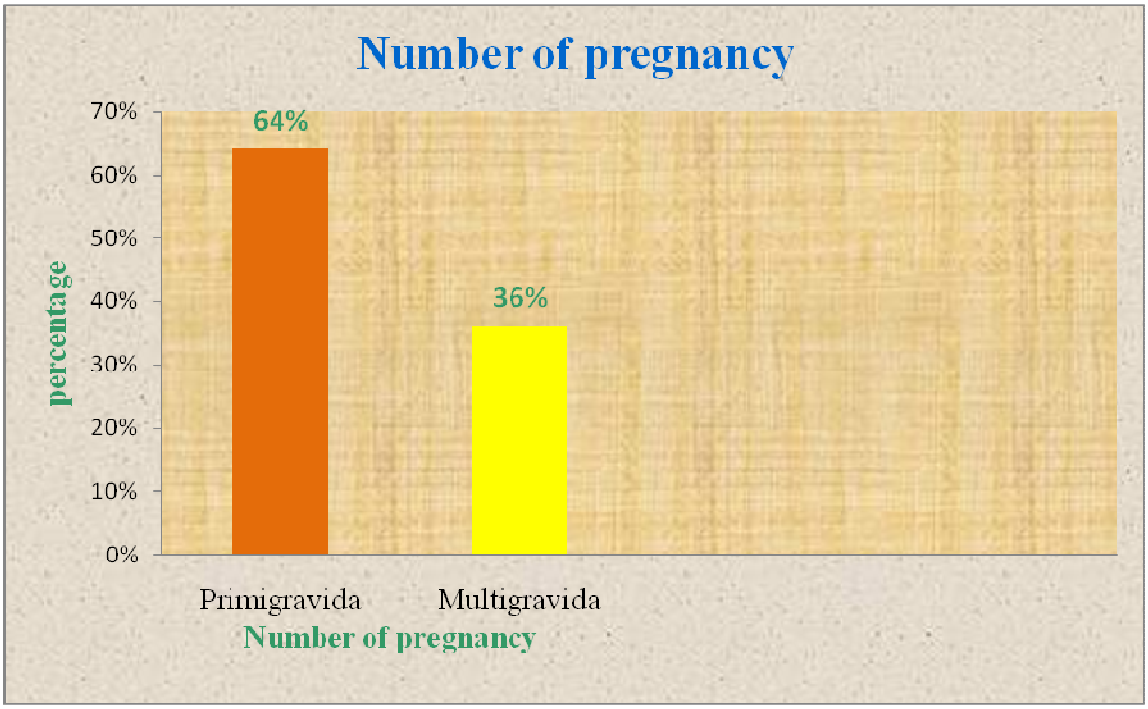


Fig 4.1.8 Percentage distribution of antenatal mothers according to the number of pregnancy

Table 4.1.9: Frequency and percentage distribution of antenatal mothers according to their gestational age

N=50

Sl. No	Gestational Age	No. (50)	Percentage (%)
1.	20 – 23 weeks	5	10%
2.	24-27 weeks	25	50%
3.	28-30 weeks	11	22%
4.	Above30 weeks	9	18%
	Total	**50**	**100%**

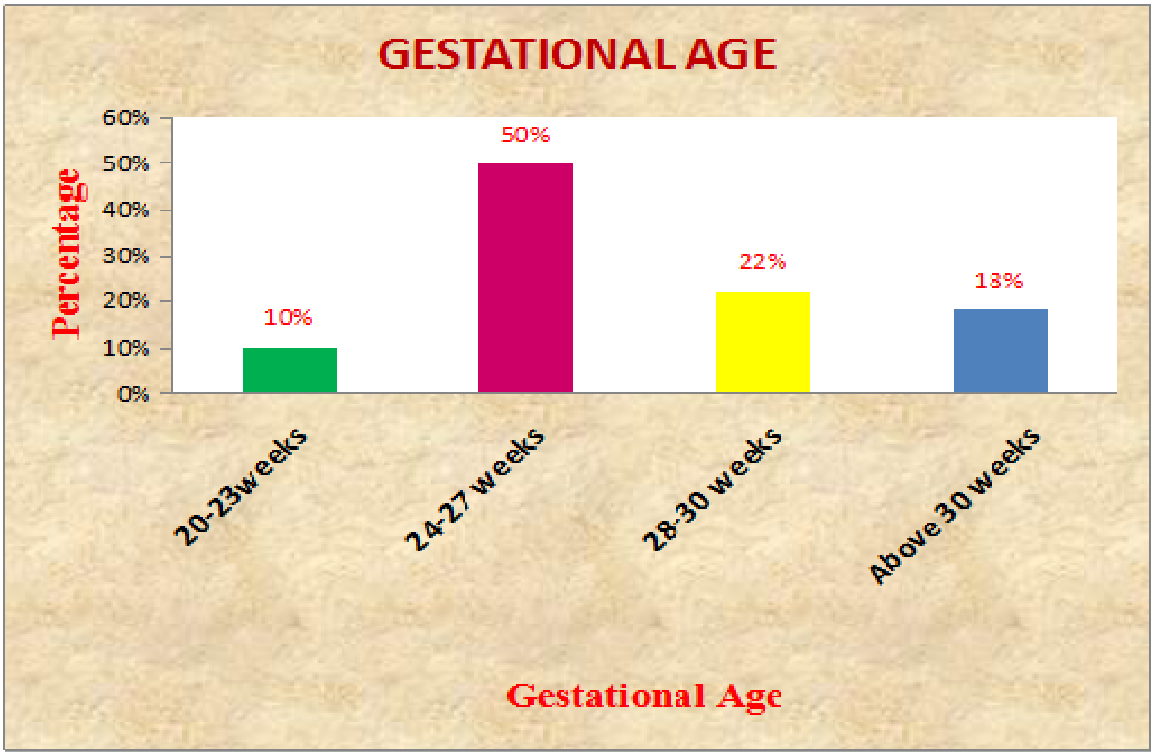


Fig 4.1.9: Percentage distribution of antenatal mothers according to their gestational age

Table 4.1.9 and figure 4.1.9 shows the distribution of ante natal mothers according to their gestational age. Among them, majority of antenatal mothers 25(50%) were between the age group of 24-27 weeks, 11(22%) were in the antenatal mothers gestational age group of 28-30 weeks, 9(18%) were in the gestational age group of above 30 weeks and 5(10%) were in the age group of 20-23 weeks.

Table 4.1.10 Frequency and percentage distribution of antenatal mothers according to the Dietary pattern

N=50

S.No	Dietary pattern	Frequency (50)	Percentage (%)
1.	Vegetarian	17	34
2.	Non vegetarian	33	66
	Total	**50**	**100%**

Table 4.1.10 & Fig 4.1.10 shows the distribution of antenatal mothers according to the dietary pattern. Among 50 mothers, majority 33(66%) had Non vegetarian, 27(54%) had vegetarian.

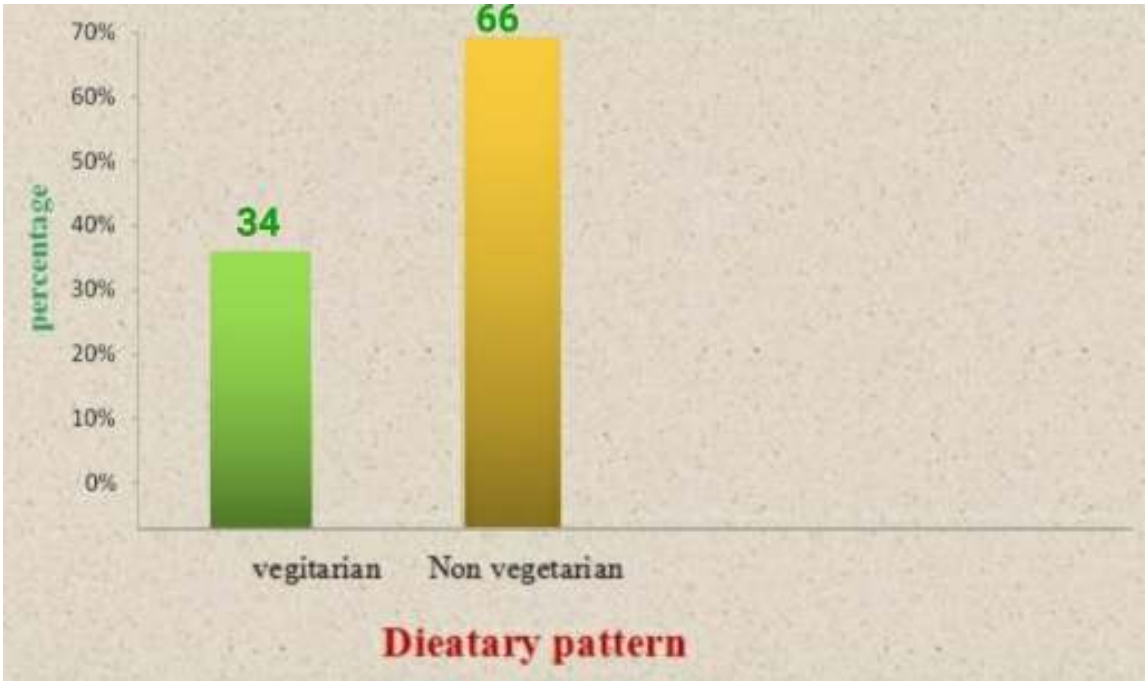


Fig 4.1.10 Percentage distribution of antenatal mothers according to the dietary pattern

Table 4.1.11 Frequency and percentage distribution of antenatal mothers according to their previous history of GDM

N=50

S.No	Previous History of GDM	Frequency (50)	Percentage (%)
1. 2.	Yes No	18 32	36% 64%
	Total	**50**	**100%**

Table 4.1.11& Fig 4.1.11 describes the distribution of antenatal mothers according to their previous history of GDM. Among the antenatal mothers, majority 32(64%) belongs to no history of GDM and 18 (36%) had a history of GDM.

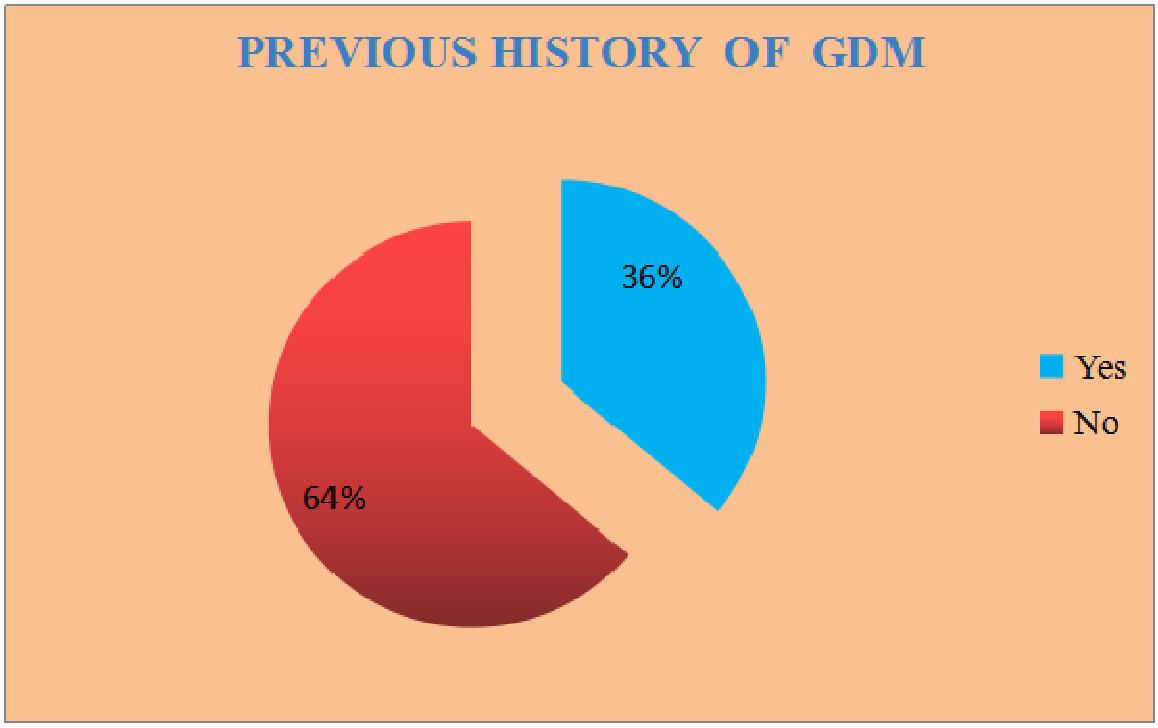


Fig 4.1.11 Percentage Distribution of antenatal mothers according to their previous history of GDM

Table 4.1.12 Frequency and percentage distribution of antenatal mothers according to the source of information regarding gestational diabetes

N=50

S.No	Source of information regarding gestational diabetes	No (50)	Percentage (%)
1.	Mass media	7	14%
2.	Family members/ Relatives/Friends	5	10%
3.	Health worker	10	20%
4.	None	28	56%
	Total	**50**	**100%**

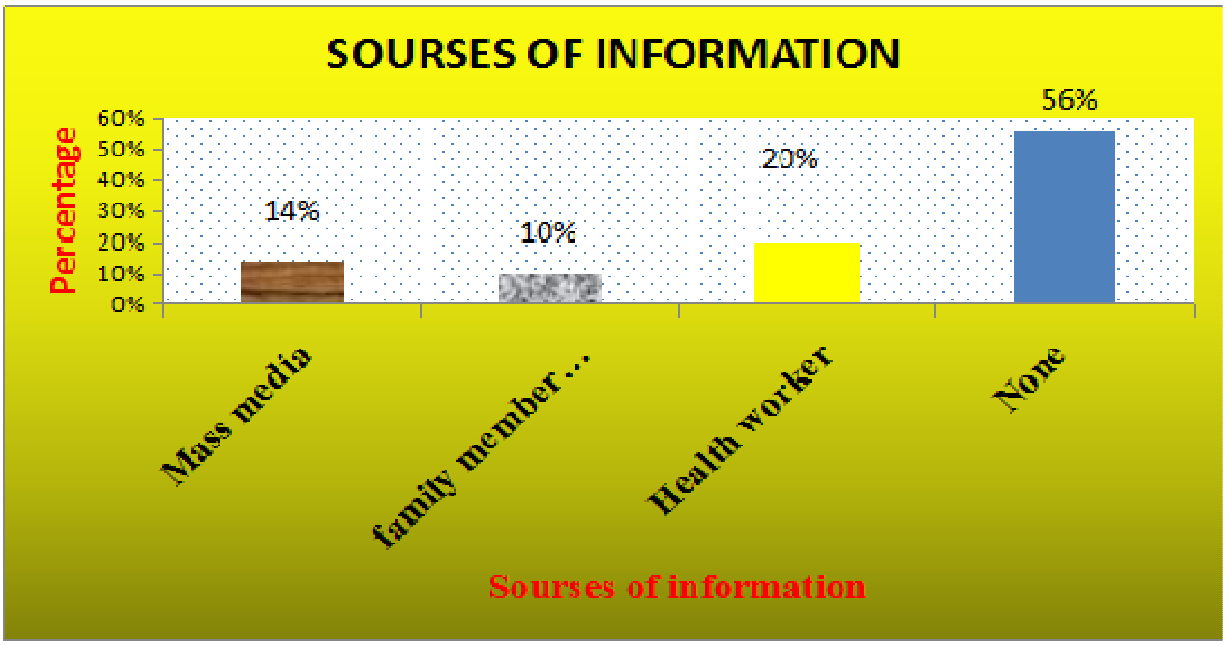


Fig 4.1.12 Percentage distribution of antenatal mothers according to the source of information regarding gestational diabetes

Table 4.1.12 & Fig 4.1.12 describes the distribution of antenatal mothers according to the source of information regarding gestational diabetes. Among the antenatal mothers, majority 28 (56%) had not received the information about gestational diabetes,10 (20%) had received the information from health care worker, 7 (14%) had received the information from mass media and the remaining 5(10%) had received the information from family memebers and friends and relatives.

SECTION-II

ASSESSMENT OF PRE- TEST LEVEL OF KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS.

Table 4.2.1: Frequency and percentage distribution of pretest level of knowledge regarding gestational diabetes among antenatal mothers

N=50

S. No	Level of Knowledge	antenatal mothers Knowledge	
		Number	Percentage (%)
1	Inadequate knowledge (<50%)	40	80%
2	Moderate knowledge (50-75%)	10	20%
3	Adequate knowledge (>75%)	0	0
	TOTAL	50	100%

Table 4.2.1 and figure 4.2.1 represents the pretest level of knowledge of antenatal mothers regarding gestational diabetes, 40(80%) had inadequate level of knowledge, 10(20%) had moderate level of knowledge and none of them had adequate level of knowledge regarding gestational diabetes.

Table 4.2.2: Pretest Mean knowledge score regarding gestational diabetes among antenatal mothers.

N=50

Aspects	Max score	Range score	antenatal Mother's knowledge		
			Mean	Mean %	SD
Knowledge	30	5-21	12.24	40.8%	3.77

Table 4.2.2. Describes that the mean pretest knowledge score of antenatal mothers regarding gestational diabetes was found to be 12.24 (40.8%) with SD value of 3.77.

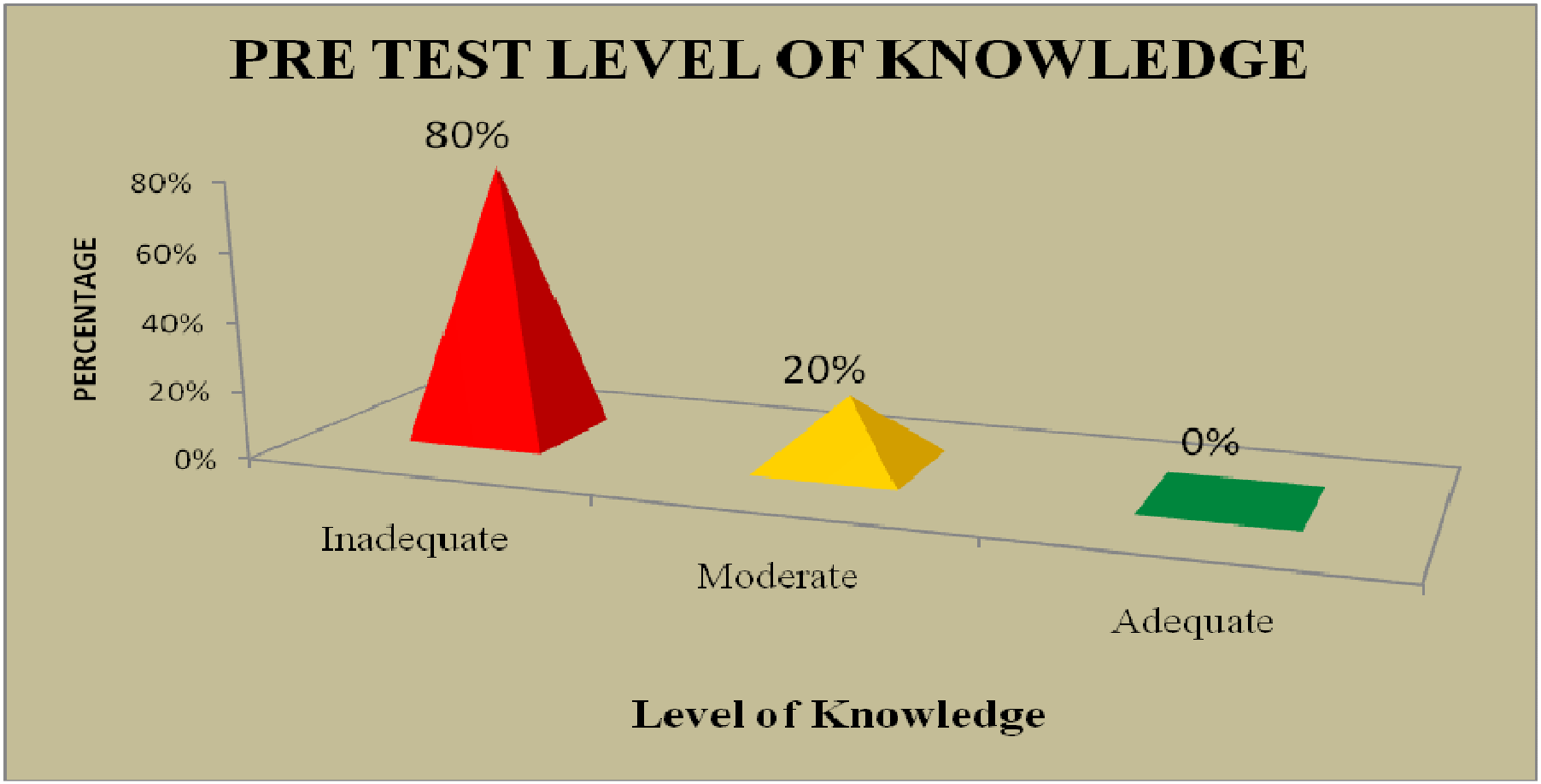


Figure 4.2.1:Percentage distribution of pretest level of knowledge regarding gestational diabetes among antenatal mother

ASSESSMENT OF PRACTICE LEVEL REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS

Table 4.2.3:Frequency and percentage distribution of pretest level of Practice regarding gestational diabetes among antenatal mother

N=50

S. No	Level of Practice	antenatal mothers practice	
		Number	Percentage (%)
1	Inadequate Practice	38	76%
2	Moderate Practice	12	24%
3	Adequate Practice	0	0
	TOTAL	50	100%

Table 4.2.3 & figure 4.2.3 shows that the pretest level of Practice of ante natal mothers. Among them, 38 (76%) had inadequate practice , 12(24%) had moderate practice and none of them had adequate practice regarding gestational diabetes.

Table 4.2.4: Pretest Mean practice score regarding gestational diabetes among high antenatal mothers.

N=50

Aspects	Max score	Range score	ante mothers Practice		
			Mean	Mean%	SD
Practice	30	10-21	14.48	48.2%	2.97

Table 4.2.4. Describes that the mean pretest Practice score of antenatal mothers regarding gestational diabetes was found to be 14.48 (48.2%) with SD value of 2.97.

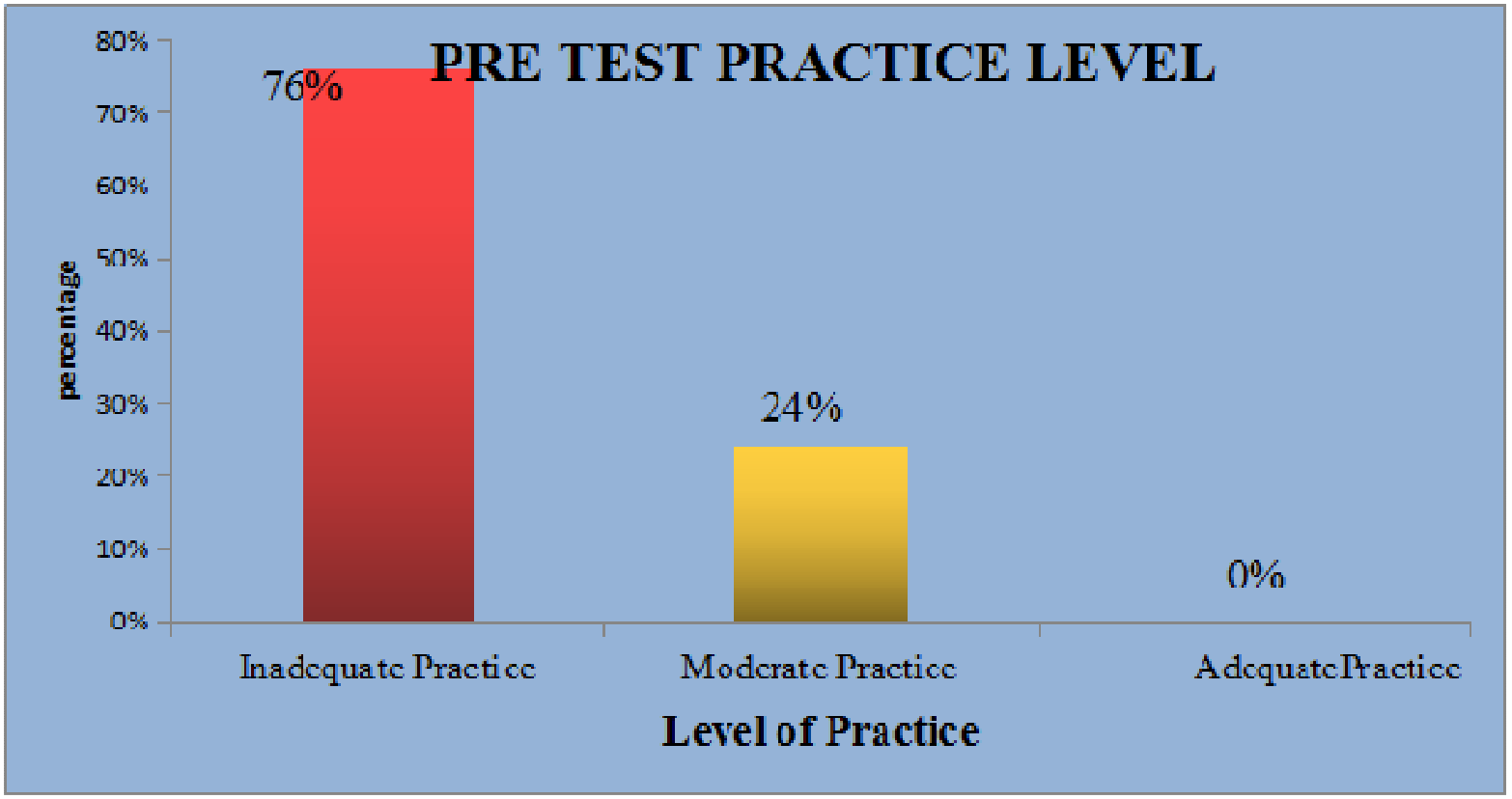


Figure 4.2.3: Percentage distribution of Pretest level of practice regarding gestational diabetes among antenatal mothers

SECTION-III

ASSESSMENT OF POST TEST LEVEL OF KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS.

Table 4.3.1: Frequency and percentage distribution of post-test level of knowledge regarding gestational diabetes among antenatal mothers.

N=50

S. No	Knowledge	antenatal mothers Knowledge	
		Number	Percentage (%)
1	Inadequate knowledge (<50%)	0	0
2	Moderate knowledge (50-75%)	9	18%
3	Adequate knowledge (>75%)	41	82%
	TOTAL	50	100%

Table 4.3.1 and figure 4.3.1 represents the distribution of level of knowledge of antenatal mothers regarding gestational diabetes. Among 50 antenatal mothers 41(82%) had adequate level of knowledge followed by 9(18%) had moderate level of knowledge and none of them had inadequate level of knowledge towards gestational diabetes.

Table 4.3.2 post test mean knowledge score regarding gestational diabetes among antenatal mothers N=50

Aspects	Max score	Range score	antenatal mothers knowledge		
			Mean	Mean%	SD
Knowledge	30	17-29	24.12	80.4%	2.76

Table 4.3.2 illustrates that the mean post test knowledge score of primi mothers regarding newborn care was found to be 24.12(80.4%) with SD value of 2.76

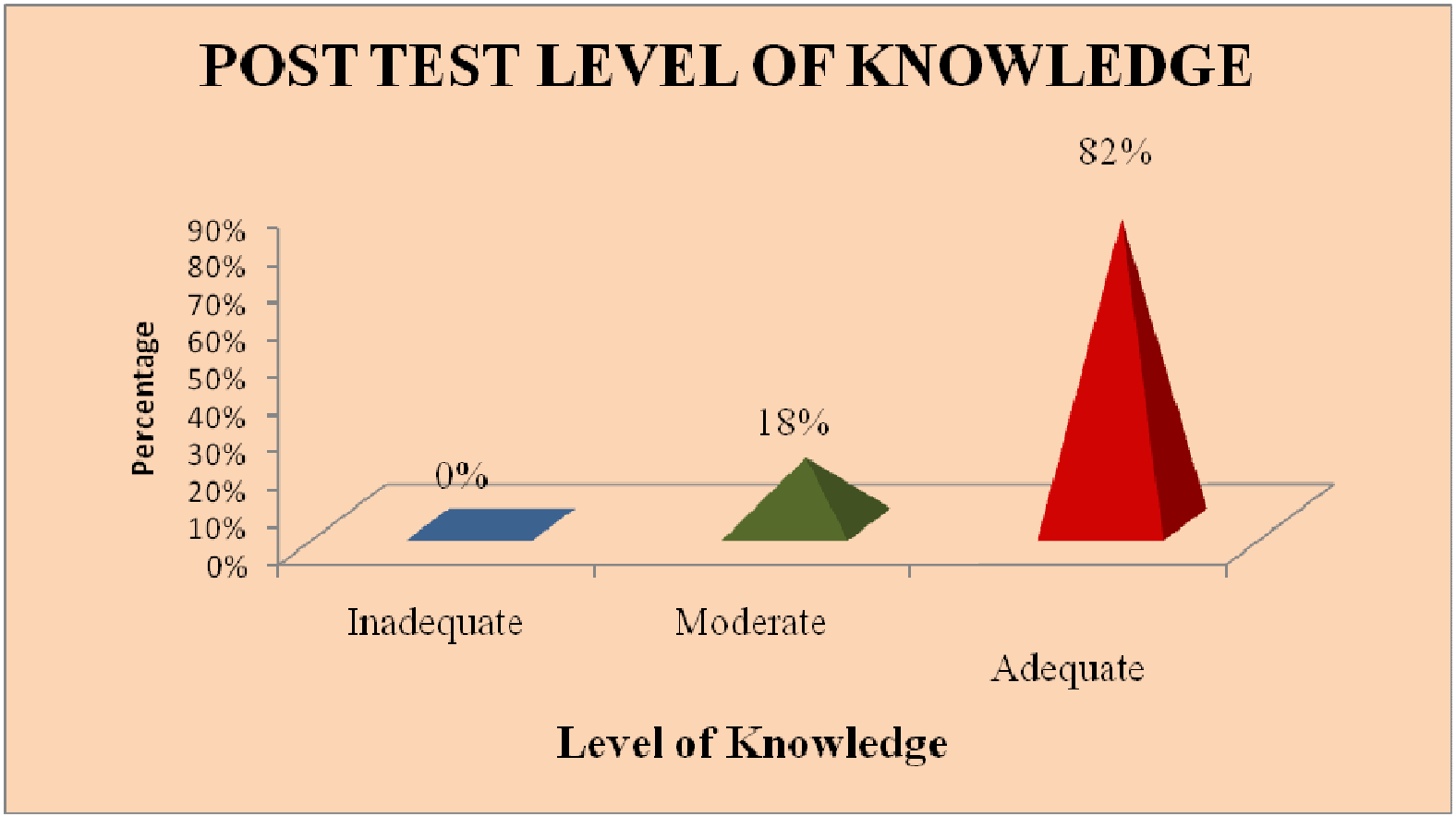


Figure 4.3.1: Percentage distribution of post-test level of knowledge regarding gestational diabetes among antenatal mothers.

Table 4.3.3: Frequency and percentage distribution of Post-test level of Practice regarding gestational diabetes among antenatal mothers.

N=50

S. No	Level of Practice	antenatal mothers practice	
		Number	Percentage (%)
1	Inadequate Practice	0	0
2	Moderate Practice	7	14%
3	Adequate practice	43	86%
	TOTAL	50	100%

Table 4.3.3 and figure 4.3.2 represents the distribution of levels of Practice of antenatal mothers regarding gestational diabetes. Among 50 antenatal mothers 43(86%) had adequate practice followed by 7(14%) had moderate practice and none of them had practice towards gestational diabetes.

Table 4.3.4 post test mean practice score regarding gestational diabetes among antenatal mothers

N=50

Aspects	Max score	Range score	antenatal mothers practice		
			Mean	Mean%	SD
Practice	30	17-30	25.08	83.6%	2.78

Table 4.3.4 illustrates that the mean post test Practice score of antenatal mothers regarding gestational diabetes was found to be 25.08 (83.6%) with SD value of 2.78.

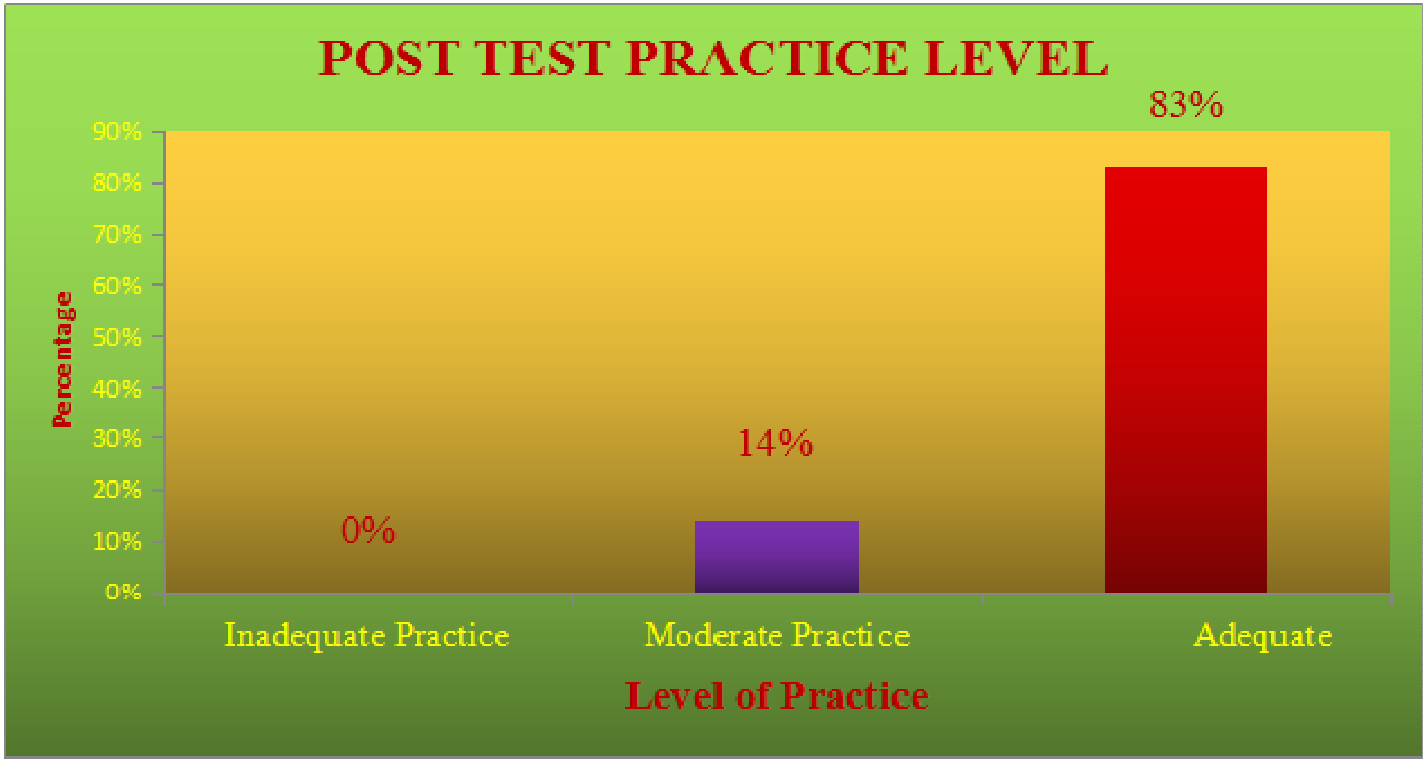


Figure 4.3.2:Percentage distribution of Post-test Practice level regarding gestational diabetes among antenatal mothers.

SECTION –IV

EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS

Table 4. 4. 1 Comparison of pre test and post test level of knowledge score regarding gestational diabetes among antenatal mothers

N=50

SL.NO	LEVEL OF KNOWLEDGE	PRE TEST		POST TEST	
		NO	%	NO	%
1	Inadequate knowledge (<50%)	40	80%	0	0
2	Moderate knowledge (50-75%)	10	20%	9	18%
3	Adequate knowledge (>75%)	0	0	41	82%
	Total	**50**	**100%**	**50**	**100%**

Table 4.4.1and figure 4.4.1 depicts the comparison of value of pretest and post test knowledge score on gestational diabetes among antenatal mothers. In pre-test 40(80%) respondents were belongs to inadequate level of knowledge, 10(20%) respondents were belongs to moderate level of knowledge and none of them have adequate level of knowledge. Where as in post test 41(82%) respondents were belongs to adequate level of knowledge, 9(18%) respondents were belongs to moderate level of knowledge and none of the belongs to inadequate level of knowledge.

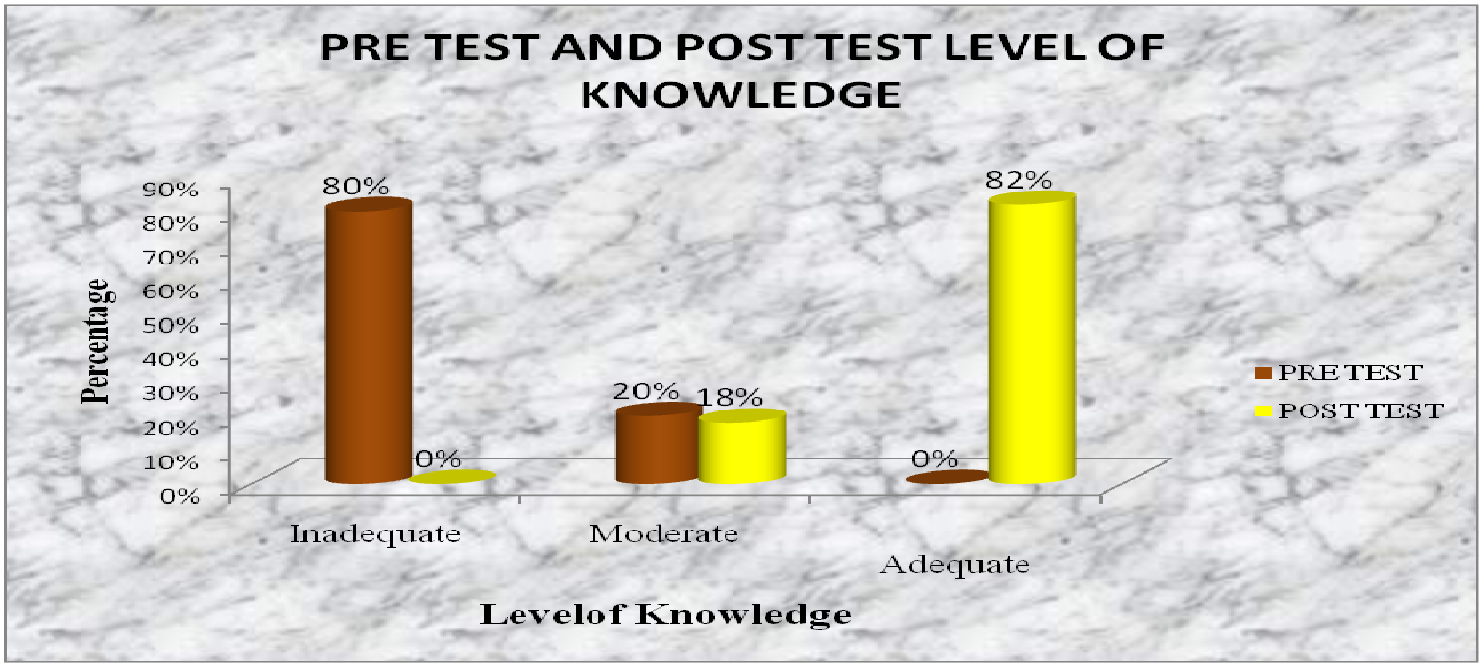


Figure 4. 4. 1 Comparison of pre test and post test knowledge score regarding gestational diabetes among antenatal mothers.

Table 4.4.2: pretest and post test mean knowledge score regarding gestational diabetes among antenatal mothers.

N=50

Aspect	Max Score	Range Score	Respondents knowledge			Paired 't' test
			Mean	Mean %	SD	
Pre test	30	5-21	12.24	40.8 %	3.77	23.55*
Post test	30	17-29	24.12	80.4 %	2.76	
Enhancement	30	12-8	11.88	39.6%	1.01	

Table 4.4.2 represents the mean knowledge score of the antenatal mothers in pretest and post test. Post test mean knowledge score was found to be 24.12(80.4%)and SD 2.76. Moreover, the pretest knowledge score was12.24 (40.8%) and SD 3.77. It reveals that the post test mean knowledge score were found higher than the pre-test knowledge score.

The statistical paired 't' test value is 23.55. Therefore there exists a statistical significance in the enhancement score indicating the effectiveness of structured teaching programme among antenatal mothers regarding gestational diabetes.

Table 4. 4. 3 Comparison of pre test and post test level of practice score regarding gestational diabetes among antenatal mothers.

N=50

SL.NO	LEVEL OF PRACTICE	PRE TEST		POST TEST	
		NO	%	NO	%
1	Inadequate Practice	38	76%	0	0
2	Moderate Practice	12	24%	7	14%
3	Adequate Practice	0	0	43	86%
	Total	**50**	**100%**	**50**	**100%**

Table 4.4.3and figure 4.4.1 depicts the comparison of value of pretest and post test attitude score on gestational diabetes among antenatal mothers. In pre-test 38(76%) respondents were belongs to inadequate practice, 12 (24%) respondents were belongs to moderate practice and none of them have adequate practice.Where as in post test 43 (86%) respondents were belongs to adequate practice, 7(14%) respondents were belongs to moderate practice and none of the antenatal mother belongs to inadequate practice.

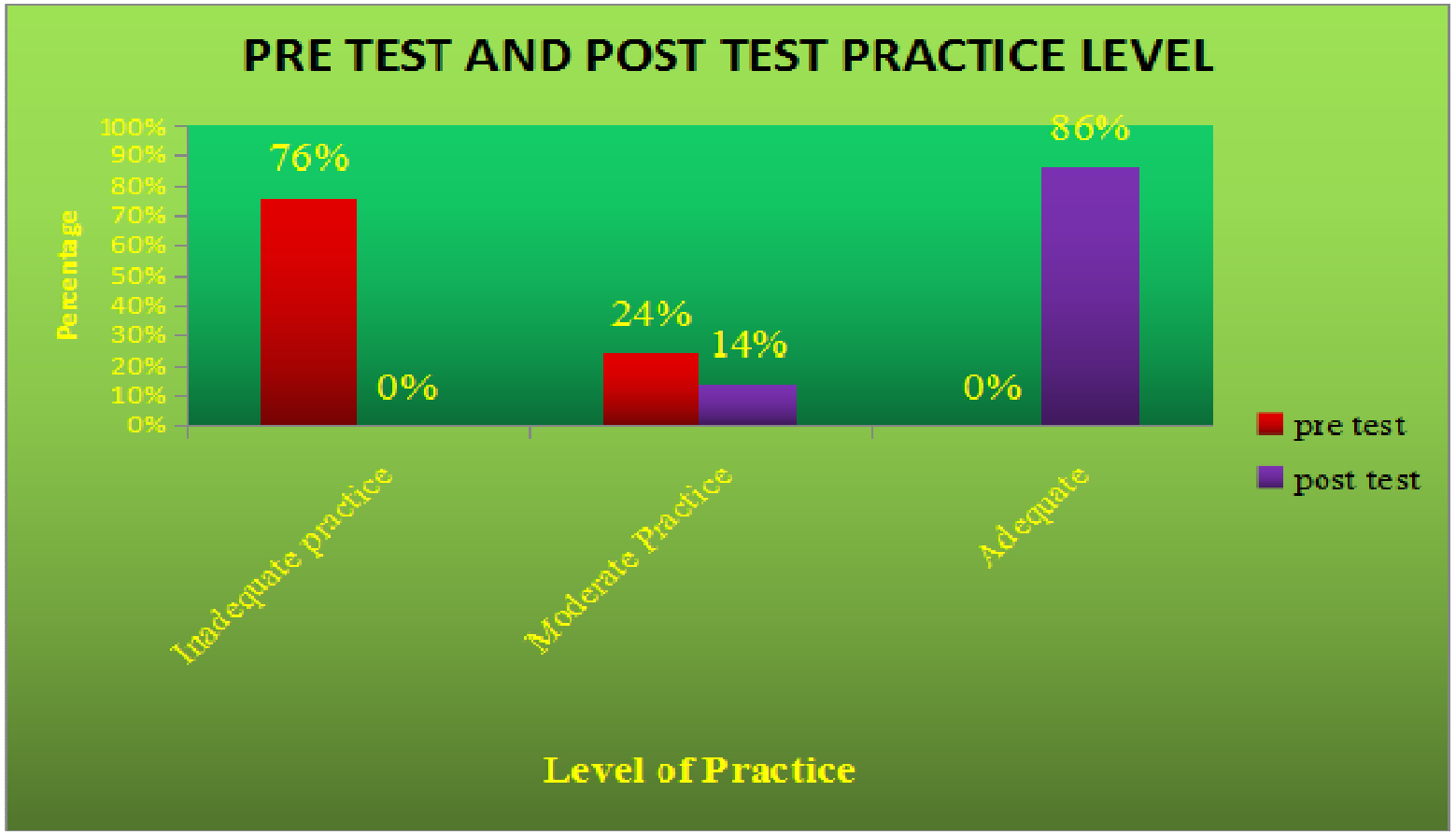


Figure 4. 4. 2 Comparison of pre test and post test level of practice score regarding gestational diabetes among antenatal mothers

Table 4.4.4: pretest and post test mean practice score regarding gestational diabetes among high antenatal mothers.

N=50

Aspect	Max score	Range Score	Respondents practice			Paired 't' test
			Mean	Mean %	SD	
Pre test	30	10-21	14.48	48.2%	2.97	25.14*
Post test	30	17-30	25.08	83.6 %	2.78	
Enhancement	30	7-9	10.6	35.4%	0.19	

Table 4.4.4 depicts that the mean practice score of the antenatal mothers in pretest and post test. Post test mean Practice score was found to be 25.08(83.6%) and SD 2.78. Moreover, the pretest practice scores was14.48 (48.2%) and SD 2.97. It reveals that the post test mean practice score were found higher than the pre-test practice score.

The statistical paired't' test value is 25.14. Therefore there exists a statistical significance in the enhancement score indicating the effectiveness of structured teaching programme among antenatal mothers regarding practice of gestational diabetes.

Table 4.4.5.: Outcomes of paired‘t’ test analysis

S.No	Variables	Differences in mean	Paired ‘t’ test value	Df and table value
1.	Knowledge	39.6	23.55	49 (t=1.96)
2.	Practice	35.4	25.14	49(t=1.96)

In the view of interfering the statistical significance of increase in the knowledge and practice of antenatal mothers regarding gestaional diabetes, the paired‘t’ test was worked out to compare the pre and post test level of knowledge and practice. The differences in mean score of pretest and post test knowledge was observed to be 39.6% which was statistically significant (t-value=23.55, df =49) at 0.05 level and Practice score was observed to be 35.4% which was statistically significant (t-value=25.14, df =49) at 0.05 level i.e. highly significant. It implies the effectiveness of structured teaching programme on gaining knowledge and practice regarding gestational diabetes among antenatal mother.

SECTION V

CORRELATION BETWEEN POST TEST KNOWLEDGE AND PRACTICE SCORE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS

Table 4.5.1: Correlation between post test knowledge and practice score regarding gestational diabetes among antenatal mothers.

N=50

Variables	Mean	S.D	"r" value
Knowledge	**24.12**	**2.76**	**r=0.55**
Practice	**25.08**	**2.78**	

There was a significant correlation between post test, the mean score of knowledge 24.12 with S.D 2.76, the mean score of Practice 25.08 with S.D 2.78. The calculated karl pearson's correlation value of (r= 0.55) between knowledge and practice shows a positive correlation and it was found to be a statistically significant.

SECTION-VI

ASSOCIATION OF POST TEST LEVEL OF KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

Table 4.6.1: Association of post test level of knowledge score with their selected demographic variables regarding gestational diabetes among antenatal mothers

N=50

Sl. NO	Demographic variables	Category	Post test knowledge				χ^2 value
			Moderate		Adequate		
			No (9)	%	No (41)	%	
1	Age	Below 20 years 21-25 years 26-30 years Above 30 years	2 5 2 -	4% 10% 4% -	9 27 5 -	18% 54% 10% -	4.63 Df=3 (t=7.82) NS
2	Educational status	Primary school Secondary school Higher secondary Graduate No formal education	5 3 1 - -	10% 6% 2% - -	4 8 19 10 -	8% 16% 38% 20% -	13.72* Df=4 (t=9.49) S
3	Occupational status	House wife Private employee Government employee Self employed Daily wages	5 - - 2 2	10% - - 4% 4%	31 1 1 1 7	62% 2% 2% 2% 14%	5.728 Df=4 (t=9.49) NS

4	Religion	Hindu Christian Muslim Others	9 - - -	18% - - -	39 0 2 0	78% - 4% -	1.233 Df=3 (t=7.82) NS
5	Residence	Urban Rural Semi urban Tribal	1 8 - -	2% 16% - -	5 34 1 1	10% 68% 2% 2%	0.419 Df=3 (t=7.82) NS
6	Type of family	Nuclear Joint	5 4	10% 8%	25 16	50% 32%	0.1107 Df=1 (t=3.84) NS
7	Family income per month	Below Rs 10,000 Rs 10001-30000 Rs 30001-50000 More than Rs 50001	3 3 1 2	6% 6% 2% 4%	15 10 6 10	30% 20% 12% 20%	2.860 Df=3 (t=7.82) NS
8	Number of Pregnancies	Primi gravida Multi gravida	7 2	22 11	25 16	78 89	
9	Gestational age	Less than 20 weeks 24-27 weeks 28 -30 weeks Above weeks	1 2 3 3	2 8 27 33	4 23 8 6	80 92 73 67	
10	Dietary pattern	Vegetarian Non Vegetarian	4 5	15 15	23 28	85 85	
11	Previous History of GDM	Yes No	3 6	15 19	17 26	85 81	
12	If yes Source of information regarding GDM	Mass media Family members/ relatives /Friends Health workers None	2 3 1 3	29 60 10 11	5 2 9 25	71 40 90 29	

Table 4.6.1 presents substantive summary of chi-square analysis which was used to bring out the association between the post test knowledge score and the selected socio demographic variables. The analysis revealed that there was significant associated established witheducational status. There was no statistically significant association found withthe demographic variables of age, educational status, occupational status, religion, residence, type of family, family income per month, mode of delivery and source of information regarding new born care

Table 4.6.2: Association of posttest level of Practice with selected demographic variables regarding gestational diabetes among antenatal mothers

N =50

Sl.NO	Demographic variables	Category	Post test Practice				$\chi 2$ value
			Moderate Practice		Adequate Practice		
			No (7)	%	No (43)	%	
1	Age	Below 20 years 21-25 years 26-30 years Above 30 years	1 4 2 -	2% 8% 4% -	10 28 5 -	20% 56% 10% -	1.510 Df=3 (t=7.82) NS
2	Educational status	Primary school Secondary school Higher secondary Graduate No formal education	4 2 1 - -	8% 4% 2% - -	5 9 19 10 -	10% 18% 38% 20% -	10.042* Df=4 (t=9.49) S
3	Occupational status	House wife Private employee Government employee Self employed Daily wages	4 - - 1 2	8% - - 2% 4%	32 1 1 2 7	64% 2% 2% 4% 14%	1.05 Df=4 (t=9.49) NS
4	Religion	Hindu Christian Muslim Others	7 - - -	14% - - -	41 0 2 0	82% - 4% -	0.335 Df=3 (t=7.82) NS
5	Residence	Urban Rural Semi urban Tribal	1 6 - -	2% 12% - -	5 36 1 1	10% 72% 2% 2%	0.339 Df=3 (t=7.82) NS

6	Type of family	Nuclear Joint	4 3	8% 6%	26 17	52% 34%	0.027 Df=1 (t=3.84)NS
7	Family income per month	Below Rs 10,000 Rs 10001-30000 Rs 30001-50000 More than Rs 50001	2 2 1 2	4% 4% 2% 4%	16 11 6 10	32% 22% 12% 20%	0.210 Df=3 (t=7.82)NS
8	Number of Pregnancies	Primi gravida Multi gravida	4 3	13% 17%	28 15	87% 83%	
9	Gestational age	20 – 23 weeks 24-27 weeks 28 -30 weeks 31–34 weeks	2 1 2 2	40% 4% 19% 22%	3 24 9 7	60% 96% 81% 78%	
10	Dietary pattern	Vegetarian Non Vegetarian	4 3	17 9	23 30	85 91	
11	Previous History of GDM	Yes No	4 3	22 9	14 29	78 91	
12	If yes Source of information regarding GDM	Mass media Family members/ relatives /Friends Health workers None	2 2 1 2	29 29 10 7	5 3 9 26	71 71 90 93	

Table 4.6.2 presents substantive summary of chi-square analysis which was used to bring out the association between the post-test Attitude score and the selected socio demographic variables. The analysis revealed that there was significant associated established with educational status. There was no statistically significant association found with the demographic variables of age, educational status, occupational status, religion, residence, type of family, family income per month, mode of delivery and source of information regarding new born care.

CHAPTER-V

RESULT AND DISCUSSION

This chapter describes the result with respect to the objective of the study. The purpose of the study was to evaluate the effectiveness of structured teaching programme on knowledge and practice regarding gestational diabetes among antenatal mothers in Aravinth hospital, at Namakkal.The result of the study was based on statistical analysis.The data was collected with the help of semi structure knowledge questionnaire to assess the knowledge with multiple choice question and Structured dichotomous practice Questionnaire to assess the practice of antenatal mothers. The effectiveness of structured teaching programme was assessed by using paired 't' test. Chi square was used to find out the association between the post test knowledge and practice scores with selected demographic variables. The results of the study were discussed according to the stated objectives.

Findings of the study was presented based on the objectives

1. To assess the level of knowledge and practice scores regarding gestational diabetes among antenatal mothers

The level of pre test knowledge regarding gestational diabetes among ante natal mothers was assessed by using of semi structure knowledge questionnaire. The total sample size was 50. The **table 4.2.1 and figure 4.2.1** shows that majority of 40(80%) had inadequate level of knowledge, 10(20%) had moderate level of knowledge and none of them had adequate knowledge level.

The level of pretest practice regarding gestational diabetes was assessed by Structured dichotomous practice Questionnaire.Regarding practice the **table 4.2.3 and figure 4.2.3** represents the distribution of pre test level of practice regarding newborn care among antenatal mothers. The pretest score distributed as 38(76%) had Inadequate Practice, 12 (24%) had moderate practice and none of them had adequate practice.

Table 4.3.1 and figure 4.3.1 represents the distribution of level of post test level of knowledge of antenatal mothers regarding gestational diabetes. Among 50 antenatal mothers 41(82%) had adequate level of knowledge followed by 9(18%) had moderate level of knowledge and none of them had inadequate level of knowledge towards gestational diabetes

Table 4.3.3 and figure 4.3.2 represents the distribution of levels of Practice of antenatal mothers regarding gestational diabetes. Among 50 antenatal mothers 43(86%) had adequate practice followed by 7(14%) had moderate practice and none of them had practice towards gestational diabetes.

2.To evaluate the effectiveness of structured teaching programme regarding gestational diabetes among antenatal mothers.

H_1: There will be a significant difference between the mean pre-tests and post-test knowledge and practice score of gestational diabetes among antenatal mothers.

Table 4.4.2. Depicts that in the pretest, the mean knowledge score was12.24 (40.8%) with SD value of 3.77 and in the post test mean knowledge score was 24.12(80.4%) with SD value of 2.76. The mean difference score was 39.6. The calculated paired't' value was t=23.55. So, it was found to be statistically significant. This clearly shows that the structured teaching programme on knowledge regarding gestational diabetes among antenatal mothers had significant effect on level of knowledge in post test.

Table 4.4.4. Depicts that in the pretest, the mean practice score was14.48 (48.2%) with SD value of 2.97 and in the post test mean practice score was 25.08(83.6%) with SD value of 2.78. The mean difference score was 35.4. The calculated paired't' value was t=25.14. So, it was found to be statistically significant. This clearly shows that the the structured teaching programme on practice regarding gestational diabetes among antenatal mothers had significant improvement in their level of practice in post test.

Hence, the H_1Hypothesis was accepted

The result of the present study was also supported by the study of **Ms. Kanchan Bala1 et al., (2013)** conducted A Quasi-experimental study was undertaken to assess the effectiveness of an structured Teaching Programme' on the Knowledge of antenatal Mothers regarding gestational diabetes in multi-specialty, teaching hospital in chennai,Tamilnadu . The overall mean pre-test knowledge score of postnatal mothers was (31±4.3) and mean post-test knowledge score of postnatal mothers was (45±1.1) and 't' value for total pretest and posttest was 24.22. The findings of the study concluded that structured teaching programme was effective to increase the knowledge of antenatal mothers regarding gestational diabetes.

3. To find out correlation between the post test knowledge scores and Practice scores of antenatal mothers

H2: There will be a significant correlation between the post test knowledge scores and post test practice scores of gestational diabetes among antenatal mothers.

The data presented in the table 4.5.1. Shows that the mean post test knowledge score was 24.12 with SD 2.76 and the mean post test practice score was 25.08 with SD 2.78. The calculated Karl Pearson's Correlation value was r=0.55 between knowledge and practice shows a positive correlation and it was found to be statistically significant. This was clearly shows that there is a positive relationship between knowledge and practice regarding gestational among antenatal mothers.

Hence, the H_1Hypothesis was accepted.

4. To determine the association between the post test knowledge and practice scores of antenatal mother regarding gestational diabetes with their selected demographic variables

H_2: There will be significant association between the post-test knowledge and practice score with the selected demographic variables of antenatal mothers.

The table 4.6.1 depicts that association of post test knowledge score of antenatal mothers with their selected demographic variables. **The analysis revealed that there was a significant association between post test knowledge score and demographic variables of educational status. There was no significant association found with the demographic variables of age, occupational status, religion, residence, type of family, family income per month, number of pregnancy and source of information regarding gestational diabetes**.

The table 4.6.2 depicts that association of post test practice score of antenatal mothers with their selected demographic variables. The analysis revealed that there was a significant association established with the educational variables. There was no significant association found with the demographic variables of age, occupational status, religion, residence, type of family, family income per month, mode of delivery and source of information regarding newborn care.

Hence, the H_2Hypothesis was accepted

This study was supported by **Mikki Khan et al.,(2014)** conducted a descriptive Study to assess the Knowledge of the ante natal mothers regarding gestational diabetes in the Selected Government Hospital of Delhi. 100 ante natal mothers were selected through convenient sampling technique.The finding shows that educational status of the mothers had significant association with the knowledge of the mother regarding gestational diabetes. Other demographic variables did not show any statistically significant association with knowledge score of the antenatal mothers.

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CHAPTER-VI

SUMMARY, FINDINGS, CONCLUSION, NURSING IMPLICATIONS AND RECOMMENDATIONS

This chapter deals with summary, findings, conclusions, nursing implications and recommendations of the study

SUMMARY OF THE STUDY

The primary aim of the present study was to evaluate the effectiveness of structured teaching programme on knowledge and practice regarding gestational diabetes among antenatal mothers.

OBJECTIVES OF THE STUDY

1. To assess the level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.

2. To evaluate the effectiveness of structured teaching programme regarding gestational diabetes among antenatal mothers.

3. To find out correlation between the post test knowledge scores and Practice scores of antenatal mothers.

4. To determine the association between the post test knowledge and practice scores of antenatal mother regarding gestational diabetes with their selected demographic variables.

HYPOTHESIS

- H_1: There will be a significant difference between the mean pre-test and post-test knowledge and practice score of gestational diabetes among antenatal mothers
- H_2: There will be a significant correlation between the post test knowledge scores and post test practice scores of gestational diabetes among antenatal mothers
- H3:There will be significant association between the post-test knowledge and practice score of gestational diabetes with their selected demographic variables of antenatal mothers.

Based on literature review and guidance from various experts, the investigator developed conceptual framework, methodology and data analysis plan in effective and

efficient way.The conceptual framework adopted for the study is based on Imogene M King's 'theory of goal attainment'. It provides comprehensive systematic and continuous ongoing framework for programme evaluation.

Pre-experimental research design with one group pre-test post-test design was adopted for this study. As sample, 50 antenatal mothers were selected from aravinth hospital at namakkal.

The instrument developed and used for the study was semi-structured knowledge questionnaire and Structured dichotomous practice Questionnaire which comprised of section A, section B and section C. Section A consist of 15 items related to demographic variables and section B consist of 30 knowledge questions related to gestational diabetes and section C consists of 10 items related to dichotomous practice Questionnaire to assess the practice of antenatal mothers towards gestational diabetes .

The structured teaching programme was formulated by expert's opinion. It consists of definition of definition, incidence, causes, risk factors, signs and symptoms, management of gestational diabetes. It was prepared to improve the knowledge and practice of antenatal mothers regarding gestational diabetes.

For conducting pilot study, the investigator administered semi-structured knowledge questionnaire and practice questionnaire to assess the practice level of antenatal mothers in aravinth hospital,at Namakkal. Test-retest method where karl Pearson's correlation formula was used to find out the reliability of the knowledge questionnaire r =0.95 and for practice r=0.42. The instruments were found to be reliable and feasible. The purpose of the study was:

- To find out the feasibility of conducting final study.
- To determine the method of statistical analysis.
- To test the tool

The final study was conducted in the month of April. By purposive sampling technique 50 antenatal mothers were selected from aravinth hospital at namakkal. Pretest was conducted to assess the knowledge regarding gestational diabetes and the practice level of antenatal mothers and structured teaching programme was presented through the power point presentation. After 7 days post test was conducted to assess the effectiveness of structured teaching programme. The data collected ,analyzed and interpreted on the basis of objectives by using descriptive and inferential statistics.

SIGNIFICANT FINDINGS ARE AS FOLLOW

Regarding percentage distribution of sample according to socio demographic variables majority of the 32(64%) were between the age group of 21-25 years, most of them were studied primary school education 15(30%),29(58%) were house wife, regarding religion most of them belongs to hindu 42(84%), residence shows that most of them were in rural 39(78%), majority of them living as a nuclear family32(64%),family income shows that 20(40%) were earning below Rs.10000,most of the antenatal mothers belongs to primigravida 32(64%), regarding gestational week majority of antenatal mothers 25(50%) were in 24-27 weeks, majority 33(66%) had Non vegetarian,majority 32(64%) belongs to no history of GDM,majority 21(42%) had Pre eclampsia,majority 18(36%) had Normal weight,majority 8(16%) had heared about gestational diabetes,Regarding source of information majority 28 (56%) had not received the information about gestational diabetes.

Majority of them comes under had inadequate level of knowledge40(80%) in pre test. Regarding practice most of them comes under inadequate practice 38(76%) in pre test.

The post test mean score knowledge was 24.12(80.4%) with SD2.76 and practice was 25.08 (83.6%) with SD=2.78 on gestational diabetes were comparatively more than their pretest knowledge (40.8%) and practice score (48.2%) score .The paired't' test analysis of the pre test and post test knowledge t=23.55 and practice t=25.14 was highly significant. This result evidently supports the effectiveness of structured teaching programme in promoting the knowledge and practice on gestational diabetes.

In present study, there was significant positive correlation (r=0.65) between knowledge and Practice.

The present study revealed that, there is a significant association was found between post test knowledge score and demographic variables of educational status(χ^2=13.72*).Significant association was found between post test practice score and demographic variables of educational status(χ^2=10.042*).

CONCLUSION

The present study assess the knowledge and practice regarding gestational diabetes among antenatal mothers. The results revealed that there was a significant difference in pre test and post test scores of knowledge and practice and no significant association between post test knowledge and practice with selected demographic variables expect the education status.

The present study shows that majority of them 41(82%) had adequate knowledge regarding gestational diabetes. 43(86%) of them had adequate practice. This finds shows that the structured teaching programme on gestational diabetes among antenatal mothers was effective. The study findings also imply that there was a significant association between knowledge and practice with selected demographic variables of educational status.

NURSING IMPLICATIONS

The findings of the study have implications in different aspect of nursing profession that is nursing service, nursing education, nursing administration and nursing research.

Nursing practice

As per client's rights, clients have the right to know regarding their health condition. Unrealistic fears based on misinformation and misconception can be alleviated by providing information. The measures to improve the knowledge and practice regarding gestational diabetes Include health education regarding consists of definition of definition, incidence, causes, risk factors, signs and symptoms, management of gestational diabetes .The findings of the study will help the nursing professionals who work in the clinical area, especially in the antenatal ward and labour ward to plan for health teaching and for care of antenatal mothers. It also helps to increase the mother's co-operation.

Nursing education

- ♠ Conference, works shop and seminar can be held for nurses to impart update their knowledge and desired practice towards gestational diabetes.
- ♠ The present study has implication on nursing education. The finding of the study helps to encourage the teachers and nursing staff to impart education in an effective way. This study may also give an insight to the students to acquire good communication skills to educate the patients.
- ♠ Nursing students who are posted in antenatal ward and labour are insisted in teaching the mothers regarding gestational diabetes.The nurse educator must prepare the students for educating the antenatal mothers with gestational diabetes and expose the students to develop structured teaching programme for caregivers as well as students. The outcome of the study is beneficial for antenatal mothers as well as students.

Nursing administration

- ❖ Nursing administration should take care initiation in creating polices and plans in providing education people and also plan for manpower, money, material, methods and time to conduct successful and useful patient educational materials. Nurse administrator should plan and organize continuing nursing education in conducting programs on gestational diabetes.
- ❖ Proper planning, organizing, conducting and participating in various educational programmes contribute to better health care delivery system. So, health care administrator should take initiative and motivate others.

Nursing research

Nursing research has more scope in this area to improve antenatal mothers knowledge and practice of gestational diabetes and to find the effectiveness of various teaching methods to educate the mothers about gestational diabetes.There is a need for extensive research regarding education techniques in order to improve the antenatal mothers knowledge and in turn help bringing in adequate practice regarding gestational diabetes among high antenatal mothers.

- Research should be done on identifying psychological problems, ways to improve quality of life, methods to modify the lifestyle and better practices of nursing care among antenatal mothers
- The nurse researcher should be motivated to conduct more studies on gestational diabetes among ante natal mothers in various settings

RECOMMENDATIONS

- ❖ Similar study can be conducted by using experimental and control group.
- ❖ The study can be replicated on larger samples; thereby findings can be generalized to a larger population.
- ❖ A comparative study can be conducted in two different hospitals with urban and rural setup.
- ❖ A similar study can be done with use of other teaching methods and teaching aids.

❖ A study can be undertaken to find out the role of nurses in care of newborn.Educational programme on gestational diabetes can be conducted for the family members also.

SUMMARY

This chapter dealt with the summary, findings, conclusion, nursing implications and recommendations.

BIBLIOGRAPHY

Book References:

1. Ahmad S (2018). Gestational Diabetes Mellitus Knowledge Assessment among Saudi Women. Open Access Maced J Med Sci. volume 6(8).pp1522–1526.
2. Amina Abdo Salhi, et .al (2019). Assessment of the knowledge of pregnant women regarding the effects of GDM on mothers and neonates at a Maternal and Children hospital in Najran, Saudi Arabia.International Journal of Medicine in Developing Countries .Volume 3(4).pp.370–375.
3. Anjana RM (2011).Epidemiology of diabetes in different regions of India. Health Adm .volume 22.pp.1-18.
4. Ann Maria Thomas (2017). Effect of Planned Teaching Programme on Knowledge and Practices in Relation to Prevention of Complications among selected High Risk Antenatal Mothers in a Selected Hospital.Asian journal of nursing education and research.volume.7(1).pp.345-8.
5. Balaji Bhavadharini et al(2017). Knowledge about gestational diabetes mellitus amongst pregnant women in South Tamil Nadu.journal of diabetology.volume 8.pp.22-26.
6. Balaji Bhavadharini, et.al (2018). Knowledge about Gestational Diabetes Mellitus amongst Pregnant Women in South Tamil Nadu. Clin Diabetes Endocrinol. Volume 6(8).pp.613-625.
7. Bhatt.A. Et.al, (2015).Indian J Endocrinol Metab. Volume. 19(4)pp.507–510.
8. Chu ,Nicholls JS, Wadsworth J, Chiu DC, Elkeles RS, *et al.* (2009). High prevalence of gestational diabetes in women from ethnic minority groups. Diabet Med volume ..9pp.820-5.
9. D. Lakshmi et al (2017). Study on knowledge about gestational diabetes mellitus and its risk factors among antenatal mothers attending care, urban Chidambaram. International journal of community medicine & public health. Volume 5(10).pp.4388-4392.
10. Dawn, CS (2008) The History of Diabetes. Diabetes Spectr. Volume 15.pp56–60.

11. Denise F. Polit (2010). *Nursing Research: Principles & Methods.* 8th edition. Lippincott Williams & Wilkins publication. Pp 234-246.
12. Dhanalakshmi, J (2010). Effectiveness of structured teaching programme regarding gestational diabetes mellitus in terms of knowledge and practice among antenatal mothers with gestational diabetes mellitus. Prim Care Diabetes.volume9.pp.184-90.
13. Ernest A. Dee(2015). Current practices in the diagnosis and management of gestational diabetes mellitus in India. Indian J Endocr Metab. Issue 20.pp.364–8.
14. Hacker, et. al (2008). Other form of diabetes. Endocrine Journal. Volume 55.pp.429–32.
15. Hussain Z, Yusoff ZM, Sulaiman SA(2014). Gestational diabetes mellitus: Pilot study on patient related aspects. Arch Pharma Pract .volume 5.pp.84-90.
16. International Diabetes Federation(2018). Diabetes in Pregnancy: Protecting Maternal Health. Brussels.IDF. Available from: http://www.idf.org/diabetes-pregnancy-protecting-maternal-health.
17. Josan P, Kaur H(2015). Effect of Structured Teaching Programme on Knowledge Regarding Gestational Diabetes Mellitus among Antenatal [others Admitted in Selected Hospitals of Jalandhar (Punjab). Nurs J India. volume106(6).pp.247-249.
18. Kanchan Bala1 et al., (2013). Assess the effectiveness of an structured Teaching Programme' on the Knowledge of antenatal Mothers regarding gestational diabetes. International Journal of Medical and Health Research. Volume2(12). Pp.786-792.
19. Kayal A,et.al (2016). Women in India with Gestational Diabetes Mellitus Strategy (WINGS). Indian J Endocr Metab 2016.volume20.pp.707-15.
20. Konong. S, et al (2016). Increasing prevalence of gestational diabetes mellitus (GDM) over time and by birth cohort . Diabetes Care. Volume 28.pp.79–84.
21. Lapolla.G .et .al (2017).
22. Lobna F El Toony(2018). Assessing the effectiveness of an educational program for patients with gestational diabetes in Assiut University. Egyptian journal of obesity, diabetes and endocrinology. Volume . 4 (1). Pp. 17-22
23. M. G. Dalfrà (2012).Gestational diabetes and the incidence of type 2 diabetes: A systematic review. Diabetes Care .Volume 25.pp.1862-8.

24. Mahore ,et .al (2017). Evaluation of knowledge regarding gestational diabetes mellitus a Bangladeshi study. Public Health. Volume 161. Pp. 67-74
25. Megan Poth, Mary Carolan (2013). Pregnant women's knowledge about the prevention of gestational diabetes mellitus: A qualitative study. British Journal of Midwifery volume 21(10).pp.692-700
26. Mikki Khan, et .al(2014). Knowledge of the ante natal mothers regarding gestational diabetes. International journal of nursing education and research. volume 4(9).pp.288-294.
27. Mpondo BC(2015). Diagnosing gestational diabetes. Diabetologia. Volume54.pp.480–486.
28. Nirav k et al (2019). Prevalence of gestational diabetes mellitus and associated risk factors amongst antenatal women attending urban health centre of Rajkot City, Gujarat. International journal of community medicine & public health. Volume 6(7).pp.507-10.
29. Padubidri.V (2006). Gestational diabetes – An update from India. Diabetes Voice. Volume 58.pp.30–4.
30. Pettitt D.J., Jovanovic L.(2007).“*Low Birth Weight as a Risk Factor for Gestational Diabetes, Diabetes, and Impaired Glucose Tolerance During Pregnancy''*. Diabetes Care. Pp.30.
31. Polit, D. F., & Beck, C. T. (2010). *“Essential of nursing research*”, 5th edition, Philadelphia: J. B. Lippincot Company Publishers. p. 123.
32. Polit, D. F., & Beck, C. T. (2011). *“Essential of nursing research*”, 5th edition, Philadelphia: J. B. Lippincot Company Publishers. p. 157.
33. Polit, D. F., & Beck, C. T. (2010). *“Essentials of nursing research”*. 7th edition. Philadelphia: Lippincott Williams &Wilkins Publication. pp. 170-186.
34. Polit, D. F., &Hungler, B. P. (2004). *“Essential of nursing research*”, 5th edition, Philadelphia: J. B. Lippincot Company Publishers. p. 126.
35. Polit, D. F., &Hungler, B. P. (2013). *“Essential of nursing research*”, 5th edition, Philadelphia: J. B. Lippincot Company Publishers. p. 112.
36. Price LA ,et.al (2017). Awareness of Gestational Diabetes and its Risk Factors among Pregnant Women in Samoa. Hawaii J Med Public Health. Volume 76(2)pp.48-54.

37. R.Singh (2017). Gestational diabetes mellitus. Diabetes and Metabolic Syndrome. Clinical Research and Reviews. Volume 2.pp.227–234.
38. Rosemary ogu, et.al (2018). Knowledge of Gestational Diabetes Mellitus among Women of Reproductive Age in Rivers State—Implications for Prevention and Control. Diabetes .volume 34.pp. 67-69.
39. Seshiah V ,et.al (2017). Prevalence of gestational diabetes mellitus in South India (Tamil nadu) – a community based study. J Assoc Physicians India v.olume 56.pp.329-33.
40. *Smitha K.R*, *Sandhya D'Almeida*(2010). Effectiveness of Self-Instructional Module on Knowledge Regarding Self-Care Management of Gestational Diabetes Mellitus among Antenatal Women Visiting Selected Antenatal Clinic at Mangalore". Int. J. Adv. Nur. Management.volume 3(1). pp. 42-45.
41. Suman Morampudi, et al (2017).Front Endocrinol (Lausanne) volume 8. Pp-56.
42. Suresh K. Sharma (2014). "*Nursing research and statistics".*2nd edition. New Delhi: Elsevier publication. pp. 145-166.
43. Suresh K. Sharma (2014). "*Nursing research and statistics".*2nd edition. New Delhi: Elsevier publication. pp. 135-146.
44. Vanishree Shriraam (2013). Awareness of gestational diabetes mellitus among antenatal women in a primary health center in South India. Indian journal of endocrinology and metabolism. Volume 17(1).pp 146-148.
45. Vineeta Dhyani,et.al(2018). Performance implications of clinical pharmacist information on gestational diabetes mellitus at a teaching hospital in southern india. International journal of pharmaceutical science and research.volume 28(4). 771-6.
46. Walker J.(2006). "*My unforgettable experience"*. Searchwarp. Volume 3. pp.81-84.

Net References:

1. www.mhmedical.com
2. www. .idf.org
3. www.ncbi.nlm.nih.gov
4. www.who.int.diabetes
5. www.medpulse.in
6. www.researchgate.net
7. www.jfmpc.com
8. www.semanticscholar.org
9. www.worlddiabetesfoundation.org
10. Www. guidelines.diabetes.ca
11. www.diabeteseducator.org
12. www.uptodate.com
13. www.applications.emro.who.int
14. www. care.diabetesjournals.org
15. www.hindawi.com
16. www.cdc.gov
17. www.cochranelibrary.com
18. www.journalofdiabetology.org
19. www. bmcpregnancychildbirth.biomedcentral.com
20. www.accp.com
21. www.obgproject.com
22. www.acog.org
23. www.gfmer.ch

APPENDIX – A.1

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From

Mrs.L.Mahalakshmi,
II Year M.Sc Nursing, (Obstetrics and gynaecological Nursing)
Arvinth College of Nursing,
Ellaikkalmedu.

To

The Principal,
Arvinth College of Nursing,
Ellaikkalmedu.

Respected Sir,

Sub: seeking permission to conduct research study in Arvinth hospital, Namakkal reg…

I am Mrs.L.Mahalakshmi, II Year M.Sc Nursing student (Obstetrics and gynaecological Nursing) studying in Arvinth college of Nursing, Ellaikkalmedu. As a part of the fulfillment of academic requirement for the completion of course, I have undertaken a thesis on the topic **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT,TAMILNADU."**.

Hence I kindly requesting your permission to carry out the research study in above said settings.

Thanking you.

Place: Ellaikkalmedu Yours faithfully

Date:

Mrs. L.Mahalakshmi

APPENDIX – A.2

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From

Mrs.L.Mahalakshmi

II Year M.Sc Nursing, (Obesterics and gynaecological Nursing)

Arvinth College of Nursing,

Ellaikkalmedu.

To

The Managing Director

Arvinth Hospital

Ellaikkalmedu.

Respected Sir,

Sub: Permission to conduct study in Arvinth Hospital

I am Mrs.L.Mahalakshmi, II Year M.Sc Nursing student (Obstetrics and gynecological nursing) studying in Arvinth College of Nursing, Ellaikkalmedu. I have undertaken a thesis on the topic **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT,TAMILNADU."** as a part of fulfillment of the academic requirement.

I would request you to kindly grant me permission to conduct the study in Arvinth Hospital , Namakkal by collection of necessary information related to the study.

Thanking you.

Place: Ellaikkalmedu Yours faithfully

Date: (Mrs.L.Mahalakshmi)

ENCLOSURE:-

1. Objectives of the study
2. Letter Granting permission

APPENDIX – B

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

From

Mrs.L.Mahalakshmi
II Year M.Sc Nursing, (Obstetrics and gynaecological Nursing)
Arvinth College of Nursing
Ellaikkalmedu

SUB: Letter granting permission to conduct the study.

It is hereby to inform that Mrs.L..Mahalaksmi studying II Year M.Sc Nursing, Department of Obstetrics and gynaecological Nursing in Arvinth college of nursing, Ellaikkalmedu, is allowed to conduct the study as per her part of academic requirement on the topic of **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT,TAMILNADU."**

With Thanks

Place : Namakkal
Date :

The Medical Superintendent

APPENDIX - C

LETTER SEEKING CONSENT FROM THE PARTICIPANTS

Dear participants

I Mrs.L.Mahakshmi, II Year M.Sc Nursing student studying in Arvinth college of Nursing, Ellaikkalmedu, have undertaken a thesis on the topic **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT, TAMILNADU."**. The information given by you will help me to complete my project study. This is only for educational purpose; the confidentiality will be strictly maintained. Please participate in this program by answering my questions honestly and state your willingness to participate in this study.

Thanking you.

Yours sincerely

Mrs.L.Mahalakshmi

CONSENT FROM THE PARTICIPANTS

I understand the purpose of this study and I am willing to participate in this study.

Signature

APPENDIX - D

LETTER SEEKING THE EXPERTS OPINION OF TOOL

FROM

Mrs.L.Mahalakshmi
II Year M.Sc Nursing, (Obstetrics and gynaecological Nursing)
Arvinth College of Nursing,
Ellaikkalmedu.

TO

THROUGH:**THE PRINCIPAL,ARVINTH COLLEGE OF NURSING**

Subject: **Request for the content validation of the tool.**

Respected Sir/ Madam,

I am Mrs.L.Mahalakshmi, II year M.Sc Nursing Student, Arvinth College of Nursing, Ellaikkalmedu, have taken a project on **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT, TAMILNADU."** to be submitted to the Tamil Nadu Dr.M.G.R. Medical University as a partial requirement for master degree of Nursing.

OBJECTIVES OF THE STUDY

- To assess the level of knowledge and practice scores regarding gestational diabetes among antenatal mothers.
- To evaluate the effectiveness of structured teaching programme regarding gestational diabetes among antenatal mothers.
- To find out correlation between the post test knowledge scores and Practice scores of antenatal

mothers.

- To determine the association between the post test knowledge and practice scores of antenatal mother regarding gestational diabetes with their selected demographic variables.

To achieve the above mentioned objectives, I have prepared a tool which consists of

Section A - Socio Demographic profile

Section B - Semi structured Knowledge questionnaire related to Gestational diabetes

Section C - practice questionnaire to assess the practice level on gestational diabetes among antenatal mothers

Section D - Structured teaching programme regarding gestational diabetes

I request you to kindly give your valuable opinion and suggestions. Kindly sign the enclosed certificate of validation stating that you have validated the tool.

Thanking you,

Date: Yours faithfully,

Place:

(Mrs.L.Mahalakshmi)

ENCLOSURES

1. Semi structured knowledge questionnaire
2. Practice questionnaire
3. Structured teaching programme
4. Score key
5. Evaluation check list
6. Certification of validation

APPENDIX -E

EVALUATION CRITERIA CHECKLIST FOR VALIDATION OF TOOL

Instructions

The expert is requested to go through the content and give your opinion in the column given in the criteria table. If the tool is not meeting the criteria please give your valuable suggestions in the remarks column.

S.No	CRITERIA	YES	NO	REMARKS
1.	**Baseline Data** The items on the baseline data cover all aspects necessary for the study			
2.	**Tools related to gestational diabetes** ✓ Relevant to the topic ✓ Content organization ✓ Language is simple and easy to understand ✓ Clarity of items used ✓ Any other suggestions			

APPENDIX-F

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr. P.AMUTHA SURABI D.C.H**
   Senior Asst.Surgeon,
   Arvinth Hospital,
   Namakkal.
2. **Dr. S. PALANIVEL MD (Pediatric)**
   Asst.Surgeon,
   Arvinth Hospital,
   Namakkal.
3. **MRS. R. SANGEETHA M.Sc (N)**
   Professor,
   Vivekanandha College of Nursing,Elayampalayam,
   Nammakkal.
4. **MRS. R.Mohanambal M.Sc (N)**
   Professor in nursing,
   Indira college of nursing,
   Trichy.
5. **MRS. J. KAVITHA M.Sc (N)**
   Associate. Professor,
   PGP College of Nursing And Research,
   Namakkal.

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APPENDIX -G

CERTIFICATE OF VALIDATION

This is to certify that tool consists of four sections which includes

Section A - Socio Demographic profile

Section B - Semi structured Knowledge questionnaire related to gestational diabetes

Section C - Practice questionnaire to assess the practice level on gestational diabetes among antenatal mothers

Section D - Structured teaching programme regarding Gestational diabetes

Prepared by **Mrs.L.Mahalakshmi** II Year M.Sc Nursing student (Obstetrics and gynaecological Nursing), Arvinth College of Nursing, Ellaikkalmedu to be used in her study titled **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT, TAMILNADU."** has been validated by me.

Signature :

Name :

Designation :

Date :

APPENDIX -H

CERTIFICATE FOR ENGLISH EDITION

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the tool developed by Mrs.L.Mahalakshmi II year M.Sc., Nursing student of Arvinth College of Nursing for dissertation **"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT, TAMILNADU."** Edited for English language appropriateness by Mrs. Nandhini M.A, B.Ed.,

Signature

APPENDIX -I

CERTIFICATE FOR TAMIL EDITION

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the tool developed by Mrs.L.Mahalakshmi II year M.Sc., Nursing student of Arvinth College of Nursing for dissertation**" A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING GESTATIONAL DIABETES AMONG ANTENATAL MOTHERS IN ARVINTH HOSPITAL AT NAMAKKAL DISTRICT,TAMILNADU."** Edited for Tamil language appropriateness by **MR. M. MANOHARAN M.A., B.Ed.,**

Signature

STRUCTURE TEACHING PROGRAMME
GESTATIONAL DIABETES MELLITUS

Topic	:	Gestational Diabetes
Duration	:	45 minutes
Group	:	High risk Antenatal mothers
Place	:	Arvinth Hospital, Namakkal.
Method of Teaching	:	Lecture cum discussion.
Medium of Instruction	:	Tamil.
Teaching Aids	:	Compact Disc with laptop.

GENERAL OBJECTIVES:-

At the end of the teaching, mothers will be able to acquire in depth knowledge regarding gestational diabetes and its management and develop skills in their day to day life.

SPECIFIC OBJECTIVES:-

The mothers will be able to;

• define gestational diabetes

• list down the risk factors

• explain the pregnancy increased metabolic changes

• enlist the diagnosis of gestational diabetes

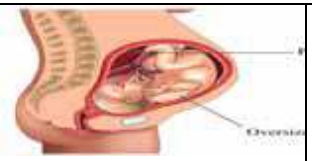
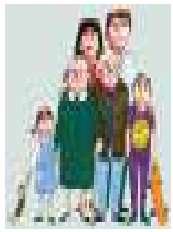
• differentiate the sign and symptoms

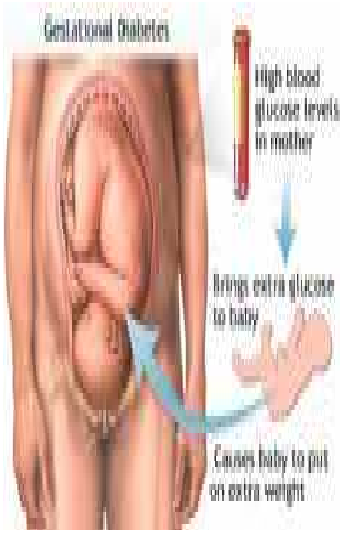
• narrate the effects of pregnancy on diabetes

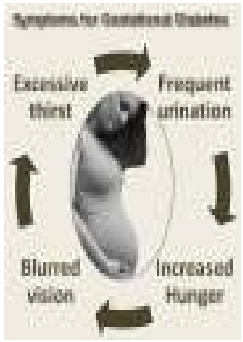
• discuss the effect of diabetes on pregnancy

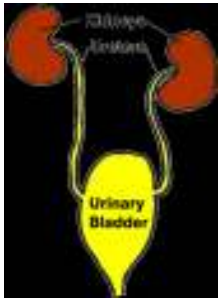
• describe the management for gestational mellitus.

Time	Specific Objective	Content	A.V AIDS	Teachers learners activity
2mts	Introduce the topic	**Introduction to the topic :** The teacher adds Diabetes is often detected in women during their childbearing years and can affect the health of both the mother and her unborn child; Poor control of diabetes in a woman who is pregnant increases the chances for birth defects and other problems for the baby. To make the safe pregnanc and aware of various complication, Appropriate healthcare teaching before and during pregnancy is more important to prevent poor outcomes. In addition to creating awareness, regular follow-up, including testing for pre-diabetes and diabetes, should be promoted on an ongoing basis after a pregnancy that is complicated by GDM. GDM should be counseled to reduce their risk for diabetes through lifestyle changes and medications if necessary.		Introduce the topic by showing the picture of pregnant women

2 Mts	The ante natal mothers are able to state the meanings of gestational diabetes mellitus	**Meanings :** Gestational diabetes is a condition in which a woman without diabetes develops high blood sugar levels during pregnancy		The teacher asks question - "What do you understand by gestational diabetes mellitus ?" - The group answers and the teacher supplements to the answer
5Mts	Identify the risk factors for developing gestational diabetes mellitus.	**Risk factors** o Positive family history of diabetes. o Advanced age (≥35 yrs.) overweight or obesity o excessive gestational weight gain o excessive fetal growth o hypertension or preeclampsia in the current pregnancyGDM during prior pregnancies o secondary lifestyle o History of fetal death/ still	  	The teacher asks, -"Who are the women at risk for gestational diabetes mellitus" -The group answers and the teacher supplements to the answer

5 mts	Explain the pregnancy increased metabolic changes	**Pregnancy induced metabolic changes:** During pregnancy, the placenta, which connects baby to mother blood supply, produces high levels of various other hormones. Almost all of them impair the action of insulin in cells and raising the blood sugar. Most elevation of blood sugar after meals is normal during pregnancy. As baby grows, the placenta produces more and more insulin-counteracting hormones. In gestational diabetes, the placental hormones provoke a rise in blood sugar to a level that can affect the growth and welfare of baby. Gestational diabetes usually develops during the last half of pregnancy — sometimes as early as the 20th week.		Lecture cum Discussion.

5Mts	Enlist the diagnosis of gestational diabetes	**DIAGNOSIS** • History • Clinical risk factors • Oral glucose tolerance test This oral glucose tolerance test has been the accepted standard for diagnosis of GDM. This test will be performed between 24-28weeks of gestation (second half of the pregnancy). The mother Will be asked to take 50 gram of glucose orally and after one hour2-3 ml of blood will be drawn to test the sugar level. A threshold value of 140 mg/dl is considered a positive screen result	 	Lecture cum Discussion
5Mts	Enlist the signs and symptoms of gestational diabetes mellitus?	**Signs and symptoms** - Unusual thirst. - Frequent urination. - Fatigue. - Nausea. - Frequent vaginal, bladder, and skin infections. - Blurred vision. - Large fetus		The teacher lists out the signs and symptoms of gestational diabetes mellitus and explains to the group - The group reads, clarify doubts and actively participates

8Mts	Narrate the effects of pregnancy on diabetes	**EFFECTS OF PREGNANCY ON DIABETES :** Once gestational diabetes mellitus occurs, the Pregnancy may result some of the adverse effect that may worsen the condition. They are; 1. Renal infection is most common during pregnancy. This cause hyperglycemia and raise the demand for insulin. So the mother should be careful in maintaining proper personal hygiene and should get treatment if she got any urinary tract infection. 2. During third trimester because of increased levels of placental hormones, the blood sugar level wills be increased. So there is increased need of insulin 3. Soon after delivery, the mother should withdraw the insulin only after Confirming whether glucose tolerance is restored. It takes around six weeks to get to the normal level. **EFFECTS OF DIABETES ON PREGNANCY :** Gestational diabetes mellitus also affects the pregnancy. Some mothers will exhibit symptoms like excessive thirst,	   	Lecture cum Discussion

		hunger, urination and weakness. It affects both the mother as well as the fetus. **MATERNAL EFFECTS:** 1. Abortion(rarely) 2. Pregnancy induced hypertension 3. Renal infection 4. Hydramnios 5. Abnormal presentation 6. Prolonged labour 7.Puerperal infection		Lecture cum Discussion
10Mts	Explain the management of gestational diabetes mellitus	**Management** - Antenatal supervision - Blood glucose monitoring Control of blood glucose through Special diet - Exercises	 	The teacher explains the complications of gestational diabetes, mellitus with the help of flip chart. -The group listens and Understands

3Mts	. Enumerate the complications of gestational diabetes mellitus.	**Complication** - Excess amniotic fluid Congenital abnormalities Large sized baby - Birth injury Hypoglycemia Respiratory distress Risk for the mother developing diabetes mellitus in the future		The teacher points out the complications of gestational diabetes mellitus in a flip chart and explains
1 Mt		**CONCLUTION:-** We have discussed regarding gestational diabetes mellitus, its causes, its pathological changes, its effects, Symptoms and management. Hope this will help to have self care management on gestational diabetes mellitus.		

PART-A

DEMOGRAPHIC VARIABLES OF ANTENATAL MOTHER'S

Instruction:

Samples are instructed to give an appropriate answer for the questions. The investigators will encircle the given answer.

Sample no: [ ]

Address:

1. Age

(a) Below 20 years
(b) 20-25 years
(c) 26-30 years
(d) Above 30 years

2. Educational Status

(a) Primary School
(b) Secondary School
(c) Higher Secondary
(d) Graduate
(e) No formal Education

3. Occupational Status

(a) House wife
(b) Private Employee
(c) Government Employee
(d) Self Employed
(e) Daily Wages

4. Religion

(a) Hindu
(b) Christian
(c) Muslim
(d) Others

5. Residence

(a) Urban
(b) Rural
(c) Semi Urban
(d) Tribal

6. Type of family

(a) Nuclear
(b) Joint

7. Family income per month

(a) Below Rs.10,000
(b) Rs.10,000 to 30,000
(c) Rs.30,001 to 50,000
(d) More than 50,000

8. Number of pregnancies

(a) Primigravida
(b) Multigravida

9. Gestational Age

(a) Less than 20 Weeks
(b) 24-27 Weeks
(c) 28-30 Weeks
(d) Above 30 Weeks

10. Dietary Pattern

(a) Vegetarian
(b) Non- Vegetarian

11. Previous History of GDM

(a) Yes
(b) No

12. If yes source of information regarding GDM

(a) Mass Media

(b) Family Members/ Relatives/ Friends

(c) Health Worker

(d) None

PART- B

KNOWLEDGE QUESTIONAIRE TOOL REGARDING

Gestational Diabetes

Instruction:

This tool consists of 30 questions, each question consists of 4 multiple answer and one is the best answer.

1. What is gestational diabetes?
   a. **Elevation of glucose in the blood in pregnancy** [ ]
   b. Elevation of urea in the blood in pregnancy [ ]
   c. Elevation of creatinine in the blood in pregnancy [ ]
   d. Elevation of albumin in the blood in pregnancy [ ]

2. How pregnancy affects blood glucose levels and to the cause the Gestational Diabetes?
   a. **The placenta secretes hormones that interfere with insulin** [ ]
   b. A big appetite from pregnancy results in higher blood glucose [ ]
   c. The fetus secretes glucose that disrupts maternal insulin [ ]
   d. Only women with Type 2 Diabetes Mellitus [ ]

3. What is the normal blood sugar level for a pregnant woman?
   a. 79-160 mg/dl [ ]
   b. >200 mg/dl [ ]
   c. 180-196mg/dl [ ]
   d. **70-120mg/dl** [ ]

4. What are the risk factors for gestational diabetes?
   a. Eating high amount of sugar and fat [ ]
   b. **Family history of diabetes and obesity** [ ]
   c. Women who had consanguineous marriage and high parity [ ]
   d. Spouse with diabetes mellitus and having habit of smoking [ ]

5. Which of the following is not a cause for gestational diabetes?
   a. **Hypothyroidism** [ ]
   b. Previous pregnancy loss [ ]
   c. Twin pregnancy [ ]
   d. Chronic hypertension [ ]

6. Who is screened for gestational diabetes?
   a. **Only women with risk factor** [ ]
   b. Only women under 25 years old [ ]
   c. All pregnant women [ ]
   d. Only women who have had Gestational Diabetes before [ ]

7. Which of the following is NOT a risk factor for Gestational Diabetes?
   a. Chronic hypertension [ ]
   b. **Hypothyroidism** [ ]
   c. Previous pregnancy loss [ ]
   d. Twin pregnancy [ ]

8. What does insulin do to the sugar in the blood? [ ]
   a. Helps to increase blood sugar [ ]
   b. **Helps the cells take in sugar from blood** [ ]
   c. Excrete sugar through urine [ ]
   d. Improve oxygen in blood [ ]

9. What is the possible long-term health consequences for the children born to GDM mothers?
   a. Weight gain [ ]
   b. Glucose intolerance [ ]
   c. **Type 2 diabetes mellitus in childhood and adolescence** [ ]
   d. None of the above [ ]

10. What are the signs of Gestational Diabetes?
   a. **Excessive weight gain during pregnancy** [ ]
   b. Feeling hot and thirsty [ ]
   c. Craving sweet snacks throughout the day [ ]
   d. There usually are no signs [ ]

11. What is the effect of Gestational Diabetes on a fetus?
   a. Excessive growth [ ]
   b. Brain problems [ ]
   c. Eye damage [ ]
   d. **All of the above** [ ]

12. When Gestational diabetes mellitus is usually diagnosed?

a. **Second half of the pregnancy** [ ]

b. During the first trimester [ ]

c. As soon as the pregnancy is confirmed [ ]

d. At the time of delivery [ ]

13. What is the conformity test to diagnose the Gestational Diabetes Mellitus patients?

a. Glucose tolerance test **[ ]**

b. Fasting blood glucose test [ ]

c. Random blood sugar test [ ]

d. Oral glucose tolerance test [ ]

14. What is the purpose of Oral glucose tolerance test on gestational diabetes?

a. **Measures the Insulin processed in the mother's body** [ ]

b. Monitor the Baby's glucose levels [ ]

c. Measures the utilization of mothers blood sugar [ ]

d. Monitor the Hormone levels in the placenta [ ]

15. What are the medications for gestational diabetes?

e. Oral blood sugar medication **[ ]**

f. **Insulin injections** [ ]

g. Either of the above [ ]

h. Control blood nitrogen level [ ]

16. What is the first and foremost management of Gestational Diabetes?

a. Prescribed Medication [ ]

b. **Healthy Diet plan and exercise** [ ]

c. Weekly sonograms [ ]

d. Once daily blood sugar monitoring [ ]

17. How does the gestational diabetes affect the baby if left untreated in the mother?

a. High birth weight [ ]

b. Respiratory distress syndrome in the new born [ ]

c. Hypoglycemia in the newborn [ ]

d. **All the above** [ ]

18. How can be preventing the diabetes during pregnancy?

a. Healthy food and exercise [ ]
b. Limiting weight gain during pregnancy [ ]
c. Checking blood sugar often [ ]
d. **All the above** [ ]

19. Which of the following is the BEST way Gestational Diabetes can be prevented?

a. **Practicing a healthy lifestyle before getting pregnant** [ ]
b. Taking insulin [ ]
c. In vitro Fertilization [ ]
d. Weight loss during the first trimester [ ]

20. What factor to be considered to prevent stillbirth in gestational diabetic women

a. Avoiding antihypertensive therapy during pregnancy [ ]
b. **Obtaining and maintaining improved glycaemic control during pregnancy** [ ]
c. Frequent ultrasound examinations should be performed [ ]
d. Reducing fetal hyper insulinaemia as this is associated with fetal hypoxia [ ]
e. Pre-pregnancy counseling [ ]

21. Which cannot be eat with gestational diabetes?

a. Plenty of whole fruits and vegetables. [ ]
b. healthy fats, whole grains [ ]
c. Food that have a lot of sugar [ ]
d. **All the above** [ ]

22. What is the Diet regimen for a woman with diabetes during pregnancy

a. **Three meals and three snacks** [ ]
b. Two meals and two snacks [ ]
c. Four meals and no snacks [ ]
d. Three meals and no snacks [ ]

23. Which kind of exercise is recommended for gestational diabetic mother?

a. Cycling [ ]

b. **Walking** [ ]

c. Swimming. [ ]

d. Vigorous exercise. [ ]

24. What is the simple management of hypoglycemia?

a. Take salt [ ]

b. Take insulin [ ]

c. **Take sugar** [ ]

d. Take water [ ]

25. Where insulin to be stored?

a. Room temperature [ ]

b. Covered box [ ]

c. **Refrigerator** [ ]

d. Cupboard [ ]

26. How many weeks of delivery, is the glucose tolerance test to be performed to ensure the diabetes has disappeared?

a. Six weeks [ ]

b. **Ten weeks** [ ]

c. Two weeks [ ]

d. One Week [ ]

27. Which of the following is potential complication of gestational diabetes for the mother

a. weight gain [ ]

b. Anemia [ ]

c. **C-Section** [ ]

d. Hypotension [ ]

28. Which is the following one is not the maternal effects of diabetes

a. Excess fluid in the amniotic sac [ ]

b. **Increased chance for instrumental and cesarean delivery** [ ]

c. Back pain [ ]

d. Urinary tract infection [ ]

29. Which is the following one is not the maternal effects of diabetes

a. Delayed delivery after due date [ ]
b. Big baby [ ]
c. **Defect in the vertebral column** [ ]
d. Respiratory distress syndrome [ ]

30. Which of the following is NOT a possible complication for BABY in a Gestational Diabetes affected pregnancy?

a. **Cardiac anomaly** [ ]
b. Fetal demise [ ]
c. Preterm Birth [ ]
d. Diabetes Type II development in life [ ]

PART - C

STRUCTURED DICHOTOMOUS QUESTIONNAIRE-PRACTICE TOOL

Instruction:

This tool consists of 10 questions you are instructed to put Yes / No answer.

S.NO	QUESTION	Yes	No
1.	Do you Check Your Blood Sugar and Blood pressure regularly?		
2.	*Do you have the habit of taking more sweets?		
3.	*Do you have a overweight during pregnancy		
4.	Do you walk regularly?		
5.	*Do you skip a meal?		
6.	Do you take prescribed medication regularly?		
7.	*Do you take a large meal at bed time?		
8.	Do you come regularly for the antenatal visit		
9.	Do you have 8 hrs sleeps regularly?		
10.	Do you consume low Cholesterol diet?		

*** - Negative questions** **Total score-10** **Yes=1 No=0**

Level of practice:

Inadequate practice:-1-3

Moderate practice: - 4-6

Adequate practice:-7-10

நேரம்	குறிப்பிட்ட நோக்கம்	பொருளடக்கம்	உபகரணங்கள்	ஆசிரியரின் செயல்கள
2 நிமிடம்	கர்ப்பகால நீரிழிவு நோய் பற்றி அறிமுகப்படுத்தல்	**முன்னுரை:** நீரிழிவு நோய் என்பது தாய்மார்களுக்கு கர்ப்பகாலத்தில் ஏற்படுகிறது இதனால் தாய் மற்றும் சிசுவின் உடலை பாதிக்கிறது "கர்ப்பகால நீரிழிவு நோயை கட்டுப்படுத்தாவிட்டால் பிறவி குறைபாடுகல் ஏற்பட வாய்ப்புள்ளன". பாதுகாப்பான கர்ப்பம், தகுந்தநலக்கல்வி விளைவுகளை தடுப்பதற்கு முக்கியமானதாகும். கர்ப்பகால நீரிழிவு நோயை தகுந்த ஆலோசனை வாழ்க்கை முறை மாற்றங்கள் மருத்துவ சிகிச்சை முறைகள்மூலம் தடுக்க இயலும்.		கர்ப்பிணிப் பெண்களின் படத்தைக் காண்பதன்மூலம் தலைப்பை அறிமுகப்படுத்துக.
2 நிமிடம்	கர்ப்பகால நீரிழிவு நோய் பற்றி தாய்மார்கள் கூறுதல்	**வரையறை:** கர்ப்பகால நீரிழிவு நோய் என்பது தாய்மார்களுக்கு கர்ப்பகாலத்தில் மட்டும் மிகைஇரத்த சர்க்கரை அளவு இருப்பதாகும்.		ஆசிரியர் கேள்வி -கர்ப்பகால நீரிழிவு நோயால் நீங்கள் என்ன புரிந்து கொள்கிறீர்கள்? குழு பதில்கள் மற்றும்ஆசிரியர் பதிலளிக்க கூடுதல்
5 நிமிடம்	கர்ப்பகால நீரிழிவு நோயில் உள்ள அபாய காரணிகள் கீழே பட்டியலிட	**அபாய காரணிகள்:** ➢ குடும்ப நபர்களுக்கு நீரிழிவு நோய் இருத்தல் ➢ மிகை வயது 35க்கு மேல் இருத்தல் ➢ அதிகப்படியான கர்ப்பகால எடை ➢ அதிகப்படியான சிசு வளர்ச்சி ➢ மிகைஇரத்த அழுத்தம் மற்றும் முன்சூல்வலிப்புதற்போதைய காலத்தில் ➢ வாழ்க்கை முறை மாறுபாடு ➢ சிசுவின் இழப்பு வரலாறு		ஆசிரியர் கேள்வி- கர்ப்பகால நீரிழிவு நோய்க்கு ஆபத்து உள்ள பெண்கள் யார்? குழு பதில்கள் மற்றும்ஆசிரியர் பதிலளிக்க கூடுதல
5 நிமிடம்	கர்ப்பகால வளர்சிதை மாற்றங்கள் பற்றி விவரிக்கவும்	**கர்ப்பகால வளர்சிதை மாற்றங்கள்:** கர்ப்பகாலத்தின்போது தாயுடன் குழந்தையைத் தொடர்படுத்தும் நஞ்சுக்கொடி, இரத்த விநியோகத்தில் பல்வோறு ஹார்மோன்களின் உயர்நிலையை உண்டாக்கும். பொதுவாக அனைத்து செல்களில் இன்சுலினின் செயலை குறைக்கமால் இரத்த சர்க்கரையை உயர்த்திவிடுகின்றன. கர்ப்பகாலத்தில் உணவு உண்டபிறகு இரத்த சர்க்கரை அளவு மிதமாக அதிகரிப்பது சாதாரணமாகும் குழந்தை வளரும்போது நஞ்சுக்கொடி மேலும் மேலும் இன்சுலின் எதிராக செயலாற்றும் ஹார்மோன்களை உருவாக்குகின்றன. கர்ப்பகால நீரிழிவு நோயின் போது, நஞ்சுப்பை ஹார்மோன்கள் இரத்த சர்க்கரை அளவை அதிகரித்து குழந்தையின்		விரிவுரை பற்றிய கலந்துரையாடல்

		வளர்ச்சியையும், உடல்நலத்தையும் பாதிக்கும். கர்ப்பகால நீரிழிவு நோயாது கடைசி அறை கர்ப்பகாலத்தில் உருவாக்குகிறது, சில நேரங்களில் 20 வாரங்களில் நடைபெறும்.		

நேரம்	குறிப்பிட்ட நோக்கம்	பொருளடக்கம்	உபகரணங்கள்	ஆசிரியரின் செயல்கள்
5 நிமிடம்	கர்ப்பகால நீரிழிவு நோயால் என்னெண்ண கண்டறியும் முறைகள் ஆளாகின்றன	**<u>கண்டறியும் முறைகள்:</u>** • வரலாறு கண்டறிதல் • மருத்துவ ஆபத்து காரணிகள் • வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை இந்த வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை சோதனை கர்ப்பகால நீரிழிவு நோயை கண்டறிவதற்கு ஏற்றுக்கொள்ளப்பட்டதரமாக இருந்து வருகிறது. இந்த பரிசோதனை 24-28 வாரங்கள் வரை கர்ப்பகாலத்தின் இரண்டாம் பாதியில் செய்யப்படும். தாய் 50கிராம் குளுக்கோஸ் வாய்வழியாக எடுத்துகக்கொள்ளவேண்டும், மேலும் 2.3 மிலி இரத்த பரிசோதனைக்கு எடுகக்வேண்டும். 140 கிராம் மில்லி மேல் இருந்தால் கர்ப்பகால நீரிழிவு நோய் உள்ளது என்பது உறுதி செய்யப்படும்.	 	விரிவுரை பற்றிய கலந்துரையாடல்
5 நிமிடம்	கர்ப்பகால நீரிழிவு நோயால் என்னெண்ண அறிகுறிகள் ஆளாகின்றன	**<u>அறிகுறிகள்:</u>** ✓ அசாதாரண தாகம் ✓ அடிக்கடி சிறுநீர் கழித்தல் ✓ சோர்வு ✓ குமட்டல் ✓ அடிக்கடி யோனி, சிறுநீர்ப்பை மற்றும் தோல் தொற்றுகள் ✓ மங்கலான பார்வை ✓ பெரிய சிசு		ஆசிரியர் கர்ப்பகால நீரிழிவு நோயின் அறிகுறிகளையும் பட்டியலிட்டு குழுவிற்கு விளக்குகிறார் குழுவினர் படித்து தெளிவுடன் தீவிரமான பங்கேற்கின்றனர்

8 நிமிடம்	கர்ப்பகால நீரிழிவு நோயினால் உண்டாகும் விளைவுகள் பற்றி அறிவிக்க	**<u>கர்ப்பகால நீரிழிவு நோயால் ஏற்படும் விளைவுகள்:</u>** கர்ப்பகால நீரிழிவு நோயால் சில பாதகமான நீரிழிவு நோயால் விளைவுகள் ஏற்படும்: அவை பின்வருமாறு: 1. கர்ப்பகால நீரிழிவு நோய் தொற்று ஏற்படுவது மிகவும் பொதுவானதாகும். இதனால், மிகை இரத்த சர்க்கரை ஏற்படும் இன்சுலின் தேவையும் அதிகரிக்கிறது. எனவே தாய்மார்கள் தன்சுத்தத்தை பேனுவதிலும் சிறுநீர் தொற்று ஏற்பட்டால் சிகிச்சை எடுத்துக் கொள்வதிலும் கவணமாக இருக்க வேண்டும். 2. கடைசி 3மாதங்களில் நஞ்சுப்பை ஹார்மோன்களின் அளவு அதிகரிக்கிறப்பதால் இரத்த சர்க்கரை அளவும் அதிகரிக்கிறது. ஆதனால் இன்சுலின் தேவையும் அதிகரிக்கிறது. 3. பிரசவத்திற்கு பிறகு தாய்மார்களை குளுக்கோஸ் சகிப்புத்தன்மை என்பதை உறுதி செய்த பின்னரே இன்சுலினை நிறுத்த வேண்டும், பொதுவாக சாதாரண நிலைக்கு வர 6 வாரங்கள் ஆகும்.		விரிவுரை பற்றிய கலந்துரையாடல்

நேரம்	குறிப்பிட்ட நோக்கம்	பொருளடக்கம்	உபகரணங்கள்	ஆசிரியரின் செயல்கள்
		<u>நீரிழிவு நோயால் கர்ப்பகால தாய்மார்க்கு ஏற்படும் விளைவுகள்:</u> கர்ப்பகால நீரிழிவு நோயும் கர்ப்பத்தை பாதிக்கிறது, சில தாய்மார்க்கு அதிகப்படியான அறிகுறியாக, அதிகப்படியான தாகம், பசி, சிறுநீர் தொற்றுகளித்தல் மற்றும் பலவீனம் இருக்கும். இவை தாயையும் சேயையும் பாதிக்கிறது. **<u>தாய்மார்க்குரிய விளைவுகள்:</u>** ❖ கருகலைப்பு ❖ கர்ப்பகாலத்தில் மிகைஇரத்த அழுத்தம் ❖ சிறுநீர் தொற்று ❖ பனிக்குட நீர் மிகைப்பு ❖ அசாதாரண வழங்கல் ❖ நீண்ட நேர பிரசவம்		விரிவுரை பற்றிய கலந்துரையாடல்

10 நிமிடம்	கர்ப்பகால நீரிழிவு நோய் பற்றிய விளக்க மேலாண்மை	**<u>மருத்துவ முறைகள்:</u>** ❑ கர்ப்பகால மேற்பார்வை ❑ சிறந்த உணவு முறைகள் மூலம் இரத்த சர்க்கரை கட்டுப்பாட்டில் வைக்கலாம். ❑ உடற்பயிற்சி		கர்ப்பகால நீரிழிவு நோயை நிர்வகிப்பதை ஆசிரியர் புரட்டு விளக்கத்துடன் விளக்குகிறார் - குழுவினர்கேட்டு மற்றும் புரிந்து கொள்வர்
3 நிமிடம்	கர்ப்பகால நீரிழிவு நோய் பற்றி கணக்கில்லி டவும்	**<u>விளைவுகள்:</u>** ❖ அதிகப்படியான அமனியனுக்குரிய திரவத்தால் பிறப்பில் வழக்கத்துக்கு மாறான நிலை மற்றும் குறைபாட்டை உண்டாக்கும். ❖ அதிகப்படியான எடை அளவு குழந்தை. ❖ பிறப்பில் காயங்கள் ❖ குறைந்த சர்க்கரை அளவு ❖ சுவாச துயர நோய் ❖ தாய்மார்ககு நீரிழிவு நோய் பிற்க்காலத்தில் அபாய காரணியை உண்டாக்கும்.		ஆசிரியர் கர்ப்பகால நீரிழிவு நோயின் சிக்கல்களை ∴பிளிப் விளக்கப்படத்தில் சுட்டிக்காட்டி விளக்குகிறார்.
1 நிமிடம்		**<u>முடிவுரை:</u>** ❖ மேற்கண்டவற்றில் கர்ப்பகால நீரிழிவு நோய் அதன் காரணிகள் அதன் நோயியால் மாற்றங்கள் இதன் விளைவுகள், சிகிச்சை முறைப்பற்றி விவாதித்தோம் ❖ இதன்மூலம் கர்ப்பகால நீரிழிவு நோயை சுய பாரமரிப்புமூலம் சரி செய்யலாம்		

பகுதி– அ

தனிநபர் காரணிகள்

அறிவுரை: கீழ்க்கண்டகேள்விகளுக்குசரியானவிடையைதேர்ந்துஎடுக்கவும். சுரியானவிடையைவட்டமிடவும்.

1. வயது

    அ) 20க்கும் கீழ்

    ஆ) 21- 25 வரை

    இ) 26- 30 வரை

    ஈ) 30 க்கும் மேல்

2. கல்விதகுதி

    அ) நடுநிலைகல்வி

    ஆ) உயர்நிலைகல்வி

    இ) மேல்நிலைகல்வி

    ஈ) பட்டப்படிப்பு

    உ) படிக்கவில்லை

3. தொழில் தகுதி

    அ) இல்லத்துஅரசி

    ஆ) தனியார் ஊழியர்

    இ) அரசுஊழியர்

    ஈ) சுய ஊழியர்

    உ) தினக்கூழியர்

4. மதம்

    அ) இந்து

    ஆ) கிருஸ்த்து

    இ) முஸ்லீம்

    ஈ) மற்றவை

5. இடம்

அ) நகர்புறம்

ஆ) கிராமபுறம்

இ) ஊராட்சி

ஈ) பழங்குடி

6. குடும்பத்தின் வகை

அ) தனி குடும்பம்

ஆ) கூட்டு குடும்பம்

7. குடும்பத்தின் மாத வருமானம

அ) 10000 க்கும் கீழ்

ஆ) 10001- 30000

இ) 30001- 50000

ஈ) 50000க்குமேல்

8. கர்ப்பத்தின் எண்ணிக்கை

அ) முதல் கர்ப்பம்

ஆ) இரண்டு (அ) இரண்டுக்கும் மேல்

9. கர்ப்பகாலத்தின் வாரங்கள்

அ) 20-23 வாரங்கள்

ஆ) 24-27 வாரங்கள

இ) 28-30 வாரங்கள

ஈ) 31-34 வாரங்கள்

10. உணவுமுறை

அ) சைவம்

ஆ) அசைவம்

11. கர்ப்பகாலநீரிழிவுநோய் முந்தையவரலாறு

அ) ஆம

ஆ) இல்லை

12. ஆம் எனில் நீரிழிவுநோய் பற்றிஅறிந்தவிதம்

அ) மக்கள் தொடர்புஅமைப்பு

ஆ) குடும்பத்தினர்: உறவினர்: நண்பர்கள்

இ) நலத்துறைபணியாளர்

ஈ) எதுமில்லை

பகுதி– ஆ

கர்ப்ப கால பராமரிப்பு பற்றிய அறிவை மதிப்பிடுவதற்கான கேள்விகள்

அறிவுரை: கீழ்க்கண்ட கேள்விகளுக்கு சரியான விடையை தேர்ந்துஎடுக்கவும். சுரியான விடையை வட்டமிடவும்.

1. நீரிழிவுநோய் என்றால் என்ன?
   - அ) கர்ப்பகாலத்தில் இரத்தத்தில் குழுக்கோஸ் அதிகரித்தல்
   - ஆ) கர்ப்பகாலத்தில் இரத்தத்தில் யூரியா அதிகரித்தல்
   - இ) கர்ப்பகாலத்தில் இரத்தத்தில் கிரியாடினைன் அதிகரித்தல்
   - ஈ) கர்ப்பகாலத்தில் இரத்தத்தில் ஆல்புமின் அதிகரித்தல்

2. கர்ப்பகாலத்தில் குழுக்கோஸ் நிலை எவ்வாறு பாதிப்பை உண்டாக்கும்,மேலும் நீரிழிவுநோய் ஏற்ப்படகாரணம் என்ன?
   - அ) நச்சுப்பையால் உருவாகும் ஹார்மோன்கலால் இன்சுலினால் ஏற்படும்
   - ஆ) கர்ப்பக்காலத்தில் திகபசியினால் சர்க்கரையின் அளவு அதிகரித்தலை உண்டாக்கும்
   - இ) தாயின் இன்சுலினை கருவிலிருந்து உருவாகும் குளுக்கோஸானது பாதிக்கும்
   - ஈ) இரண்டாம் வகை நீரிழிவுநோய் உள்ளதாய்மார்க்குமட்டும்

3. கர்ப்ப காலத்தில் தாய்மார்களின் சராசரி இரத்த சர்க்கரை அளவு என்ன?
   - அ) 79-160மிகி
   - ஆ) <200மிகி
   - இ) 186-190மிகி
   - ஈ) 70-120மிகி

4. கர்ப்பகால நீரிழிவுநோய் ஏற்ப்பட்ட அபாய காரணிகள் என்ன?
   - அ) அதிக அளவு சர்க்கரை மற்றும் கொழுப்பு உணவுகளை உண்ணுதல்
   - ஆ) குடும்பத்தில் உள்ளயாரேனும் நீரிழிவுமற்றும் உடற்பருமனுடன் இருத்தல்
   - இ) தாய்மார் சொந்தத்தில் திருமணம் செய்திருத்தல்
   - ஈ) கணவருக்கு நீரிழிவு நோய் மற்றும் புகைப்பழக்கம் இருத்தல்

5. கீழ்க்கண்டவற்றில் எவை நீரிழிவு நோய்க்கு காரணங்கள் அல்ல?

அ) ஹைப்போதைராய்டிஸம்

ஆ) முந்தையகர்ப்ப இழப்பு

இ) இரட்டை கருத்தரிப்பு

ஈ) நீண்டகால மிகை இரத்தஅழுத்தம்

6. யாருக்கெல்லாம் கர்ப்பகால நீரிழிவு பரிசோதனை செய்ய வேண்டும்?

அ) அபாயக்காரணியுடன் இருக்கும் தாய்மாருக்கு மட்டும்

ஆ) 25வயதுக்கு கீழுள்ள தாய்மாருக்குமட்டும்

இ) கர்ப்பகால தாய்மார்கள் அனைவருக்கும்

ஈ) முந்தைய கர்ப்பகாலத்தில் நீரிழிவுநோய் இருந்த தாய்மார்கள் மட்டும்

7. கீழ்க்கண்டவற்றில் எவை நீரிழிவுநோய்க்கு அபாய காரணிகள் அல்ல?

அ) நீண்டகாலமிகை இரத்தஅழுத்தம்

ஆ) ஹைப்போதைராய்டிஸம்

இ) முந்தையகர்ப்ப இழப்பு

ஈ) இரட்டை கருத்தரிப்பு

8. இரத்தச்சர்க்கரையில் இன்சுலினின் வேலை என்ன?

அ) இரத்தசர்க்கரை அளவை அதிகரிக்க உதவுகிறது

ஆ) செல்களுக்கு இரத்தத்திலிருந்து சர்க்கரையை எடுக்க உதவுகிறது

இ) சர்க்கரையை சிறுநீர் வழியாக வெளியேற்ற உதவுகிறது

ஈ) இரத்தத்தில் ஆக்ஸிஜன் அளவைஅதிகரிக்கிறது

9. கர்ப்பகால நீரிழிவு நோய் உள்ள தாய்மார்களுக்கு பிறக்கும் குழந்தைகளுக்கு ஏற்படும் சாத்தியமான நீண்டகால சுகாதார விளைவு என்ன?

அ) உடற்பருமன்

ஆ) குளுக்கோஸ் சகிப்புத்தன்மை

இ) குழத்தை பருவத்தில் மற்றும் இளம்பருவத்தில் இரண்டாம ் வகை நீரிழிவுநோய் ஏற்படுதல்

ஈ) இவற்றில் எதுமில்லை

10. நீரிழிவு நோய்க்கான அறிகுறிகள் என்ன?

அ) கர்ப்ப காலத்தில் மிகை எடை அதிகரிப்பு

ஆ) அதிக தாகம் மற்றும் சூடான உணவு

இ) இனிப்பு பண்டங்களை உண்பதற்கு ஏங்குதல்

ஈ) எந்த அறிகுறிகளும் கிடையாது

11. கர்ப்பகால நீரிழிவு நோயால் சேய்க்கு ஏற்படும் விளைவுகள் என்ன?

அ) அதிகபடியான வளர்ச்சி

ஆ) மூளை பாதிப்புகள்

இ) கண்களில் சேதம்

ஈ) இவை அனைத்தும்

12. பொதுவாக கர்ப்பகால நீரிழிவுநோய் எப்பொது கண்டறியப்படும்?

அ. இரண்டாம் அரைகர்ப்பகாலத்தில்

ஆ. முதல் மூன்று மாதங்களில்

இ. கருத்தரிப்புஉறுதிசெய்யப்பயன்படும்

ஈ. பிரசவ நேரத்தில்

13. கர்ப்பகால நீரிழிவு நோயை உறுதி செய்யப்பயன்படும் பரிசோதனை என்ன?

அ. குளுக்கோஸ் சகிப்புதன்மை சோதனை

ஆ. உணவுக்கு முன் இரத்தசர்க்கரை பரிசோதனை

இ. சராசரி இரத்தசர்க்கரை சோதனை

ஈ. வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை சோதனை

14. கர்ப்கால நீரிழிவு நோய்க்கு வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை சோதனை செய்வதன் நேக்கம் என்ன?

அ. தாய்மாரின் உடலில் இன்சுலினின் அளவை கண்டறிய

ஆ. குழந்தையின் குளுக்கோஸ் அளவை கண்காணிக்க

இ. தாய்மார்களின் இரத்தசர்க்கரையின் பயன்பட்டை அளவிட

ஈ. நஞ்சுப்பையில் ஹார்மோனின் அளவை கண்காணிக்க

15. கர்ப்பகால நீரிழிவு நோய்க்கான மருந்துகள் என்ன?

அ. வாய்வழி இரத்தசர்க்கரை மருந்துகள்

ஆ. இன்சுலின் ஊசிகள்

இ. இரத்தநைட்ரஜன் அளவை கட்டுப்படுத்துதல்

ஈ. மேற்கண்டவற்றுல் எதாவது

16. கர்ப்பகால நீரிழிவுநோய்க்கு முதன்மையான சிகிச்சை என்ன?

அ. மருந்துகளை உட்கொள்ளுதல்

ஆ. ஆரோக்கியமான உணவு முறை மற்றும் உடற்பயிற்சி

இ. வாரந்திர சோனோகிராம் பரிசோதித்தல்

ஈ. தினமும் ஒருமுறை இரத்தசர்க்கரை அளவை கண்காணித்தல்

17. தாய்மாரின் சரிசெய்யப்படாத கர்ப்பகால நீரிழிவு நோய் எவ்வாறு குழந்தையை பாதிக்கும்?

அ. பிறப்பில் அதிகஎடை

ஆ. பிறந்த குழந்தைக்கு சுவாசதுயர நோய் இருத்தல்

இ. இரத்தசர்க்கரை குறைவு

ஈ. இவை அனைத்தும்

18. கர்ப்ப காலத்தில் நீரிழிவு நோயை எவ்வாறு தடுக்கலாம்?

அ. ஆரோக்கியமான உணவு மற்றும் உடற்பயிற்சி

ஆ. கர்ப்பகாலத்தில் கட்டுப்பாடன உடல் எடை

இ. அடிக்கடி இரத்தசர்க்கரை பரிசோதித்தல்

ஈ. இவை அனைத்தும்

19. கீழ்க்கண்டவற்றில் கர்ப்பகால நீரிழிவு நோயை தடுக்கும் சிறந்த வழிமுறை என்ன?

அ. கருதருப்பிற்கு முன் ஆரோக்கியமான வாழ்க்கை முறை

ஆ. இன்சுலின் உட்கொள்ளுதல்

இ. இன்விட்ரோ கருதரித்தல்

ஈ. முதல் மூன்று மாதத்தில் உடல்எடை குறைதல்

20. கர்ப்பகாலநீரிழிவுநோய் உள்ள தாய்மார்கள் குழந்தை இழப்பை தடுக்க காரணிகள் என்ன?

அ. கர்ப்பகாலத்தில் மிகை இரத்த அழுத்த மருந்துகளை எடுத்துக் கொள்வதை தடுத்தல்

ஆ. கர்ப்பகால இரத்தசர்க்கரை அளவை கட்டுப்பாட்டில் வைத்தல்

இ. அடிக்கடி ஸ்கேன் பரிசோதனையை மேற்கொள்ளுதல்

ஈ. முன் கர்ப்பகால ஆலோசனை

21. கர்ப்பகால நீரிழிவுநோய் உள்ளதாய்மார்கள் உட்கொள்ள கூடாதவை?

அ. அதிகபழங்கள் மற்றும் காய்கறிகள்

ஆ. ஆரோக்கியமான கொழுப்பு மற்றும் முழுதானியங்கள்

இ. அதிகஅளவு சர்க்கரை உள்ள உணவுகள்

ஈ. இவை அனைத்தும்

22. கர்ப்பகாலநீரிழிவுநோய் உள்ளதாய்மார்கள் ஏற்றஉணவுமுறை?

அ. மூன்றுவேலைஉணவுமற்றும் மூன்றுவேலைசிற்றுண்டி

ஆ. இரண்டுவேலைஉணவுமற்றும் இரண்டுவேலைசிற்றுண்டி

இ. நான்குவேலைஉணவுமற்றும் சிற்றுண்டி இல்லை

ஈ. மூன்றுவேலைஉணவுமற்றும் சிற்றுண்டி இல்லை

23. கர்ப்பகாலநீரிழிவுநோய் உள்ளவர்களுக்குஏற்றஉடற்பயிற்சி?

அ. சைக்கில் ஓட்டுதல்

ஆ. நடைபயிற்சி

இ. நீச்சல்

ஈ. தீவிரஉடற்பயிற்சி

24. குறைந்தசர்க்கரைஅளவுக்கானசாதாரணசிகிச்சைஎன்ன?

அ. உப்புசேர்த்தல்

ஆ. இன்சுலின் சேர்த்தல்

இ. சர்க்கரைசேர்த்தல்

ஈ. தண்ணீர் சேர்த்தல்

25. எங்கு இன்சுலினை சேமித்து வைக்க வேண்டும்?

அ. அரைவெப்பநிலை

ஆ. மூடியபெட்டி

இ. குளிர்சாதனபெட்டி

ஈ. ஆலமாரி

26. நீரிழிவுநோய் மறைந்ததைஉறுதிசெய்யஎத்தனைவாரங்கள்வாய்வழிகுழுக்கோஸ் சகிப்புத்தன்யைசெய்யவேண்டும்?

அ. 6 வாரம்

ஆ. 10 வாரம்

இ. ஒரு வாரம்

ஈ. 2 வாரம்

27. பின்வருவனவற்றுள் கர்ப்பகாலநீரிழிவுநோய் உள்ளதாய்மார்களுக்குஏற்படும் சாத்தியமானவிளைவுஎன்ன?

அ. உடற்பருமன்

ஆ. இரத்தசோகை

இ. பேறுஅறுவைசிகிச்சை

ஈ. குறை இரத்தஅழுத்தம்

28. பின்வருவதறுல் எதுகர்ப்பகாலநீரிழிவுநோய்ஏற்படும் விளைவு இல்லை?

அ. பனிக்குடபையில் அதிகநீர்

ஆ. அறுவைசிகிச்சைமற்றும் உபகரணங்களால் பிரசவத்திற்குஅதிகவாய்ப்பு

இ. முதுகு வலி

ஈ. சிறுநீர்வாய் தொற்று

29. பின்வருவதறுல் எதுகர்ப்பகாலநீரிழிவுநோய்ஏற்படும் விளைவு இல்லை?

அ. பிரசவதேதிக்குபின்புபிரசவம்

ஆ. அதிகஎடைஉள்ளகுழந்தை

இ. முது எலும்புபகுதியில் குறைபாடு

ஈ. சுவாசதுயரநோய் இருத்தல்

30. கீழ்க்கண்டவற்றுள் எதுகர்ப்பகாலநீரிழிவுநோயால் விளைவுஅள்ள?

அ. இதயமுரன்பாடுகள்

ஆ. கருமறைவு

இ. குறைபிரசவகுழந்தை

ஈ. இரண்டாம் நிலைநீரிழிவுநோய்

பகுதி–இ

கர்ப்ப கால பராமரிப்பு பற்றிய பயிற்சி மதிப்பிடுவதற்கான கேள்விகள்

(பயிற்சி கேள்வி 10 அறிக்கை, நேர்மறை அறிக்கை, ஆம் பதில்-1 மற்றும் இல்லை பதில் 0 எதிர்மறை அறிக்கைகளுக்கு நேர்மாறாக)

அறிவுரை: கீழ் கண்ட அட்டவணையில் கண்ட வினாக்களை நன்கு படித்து பின் கொடுக்கப்பட்டுள்ள கட்டத்தில் ஆம்/இல்லை என (☑) குறியிடவும்

வ.என்	கேள்வி	ஆம்	இல்லை
1.	உங்களுக்கு இரத்தசர்க்கரைமற்றும் இரத்தஅழுத்தத்தைபரிசோதிக்கும் பழக்கம் உண்டா?		
2.	உங்களுக்குஅதிகஅளவு இனிப்புஉண்ணும் பழக்கம் உண்டா?		
3.	ஊங்களுக்குகர்ப்பகாலத்தில் அதிகஎடை இருந்ததா?		
4.	நீங்கள்வழக்கமானநடைபயிற்சிமேற்கொள்வீகளா?		
5.	நீங்கள்உணவுஉண்பதைதவிர்பீர்களா?		
6.	நீங்கள்வழக்கமானமருந்துகளைஉட்கொள்வீர்களா?		
7.	நீங்கள்படுக்கைக்குமுன் அதிகஉணவுஉட்கொள்வீர்களா?		
8.	நீங்கள்வழக்கமானபரிசோதனைக்குசெல்வீர்களா?		
9.	நீங்கள்வழக்கமாக 8மணி நேரம் உறங்குவீர்களா?		
10.	நீங்கள்உணவில் கொலஸ்ட்ரால் குறைவாகஎடுத்துக் கொள்வீகளா?		


வலைதகம்

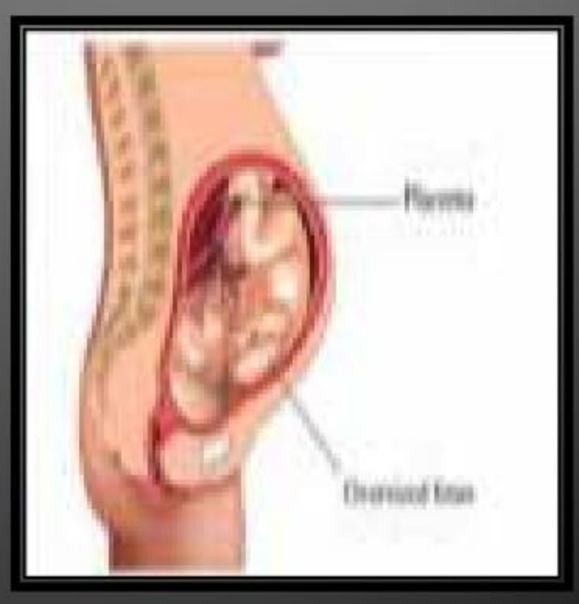

கர்ப்பகால நீரிழிவு
நோய்

முன்னுரை

- நீரிழிவு நோய் என்பது தாய்மார்களுக்கு கர்ப்பகாலத்தில் ஏற்படுகிறது இதனால் தாய் மற்றும் சிசுவின் உடலை பாதிக்கிறது "கர்ப்பகால நீரிழிவு நோயை கட்டுப்படுத்தாவிட்டால் பிறவி குறைபாடுகல் ஏற்பட வாய்ப்புள்ளன".
பாதுகாப்பான கர்ப்பம், தகுந்தநலக்கல்வி விளைவுகளை தடுப்பதற்கு முக்கியமானதாகும்.
- கர்ப்பகால நீரிழிவு நோயை தகுந்த ஆலொசனை வாழ்க்கை முறை மாற்றங்கள் மருத்துவ சிகிச்சை முறைகள் மூலம் தடுக்க இயலும்.

வரையரை

- கர்ப்பகால நீரிழிவு நோய் என்பது தாய்மார்களுக்கு கர்ப்பகாலத்தில் மட்டும் மிகைஇரத்த சர்க்கரை அளவு இருப்பதாகும்



அபாய காரணிகள்

- குடும்ப நபர்களுக்கு நீரிழிவு நோய் இருத்தல்
- மிகை வயது 35க்கு மேல் இருத்தல்
- அதிகப்படியான கர்ப்பகால எடை
- அதிகப்படியான சிசு வளர்ச்சி
- மிகைஇரத்த அழுத்தம்

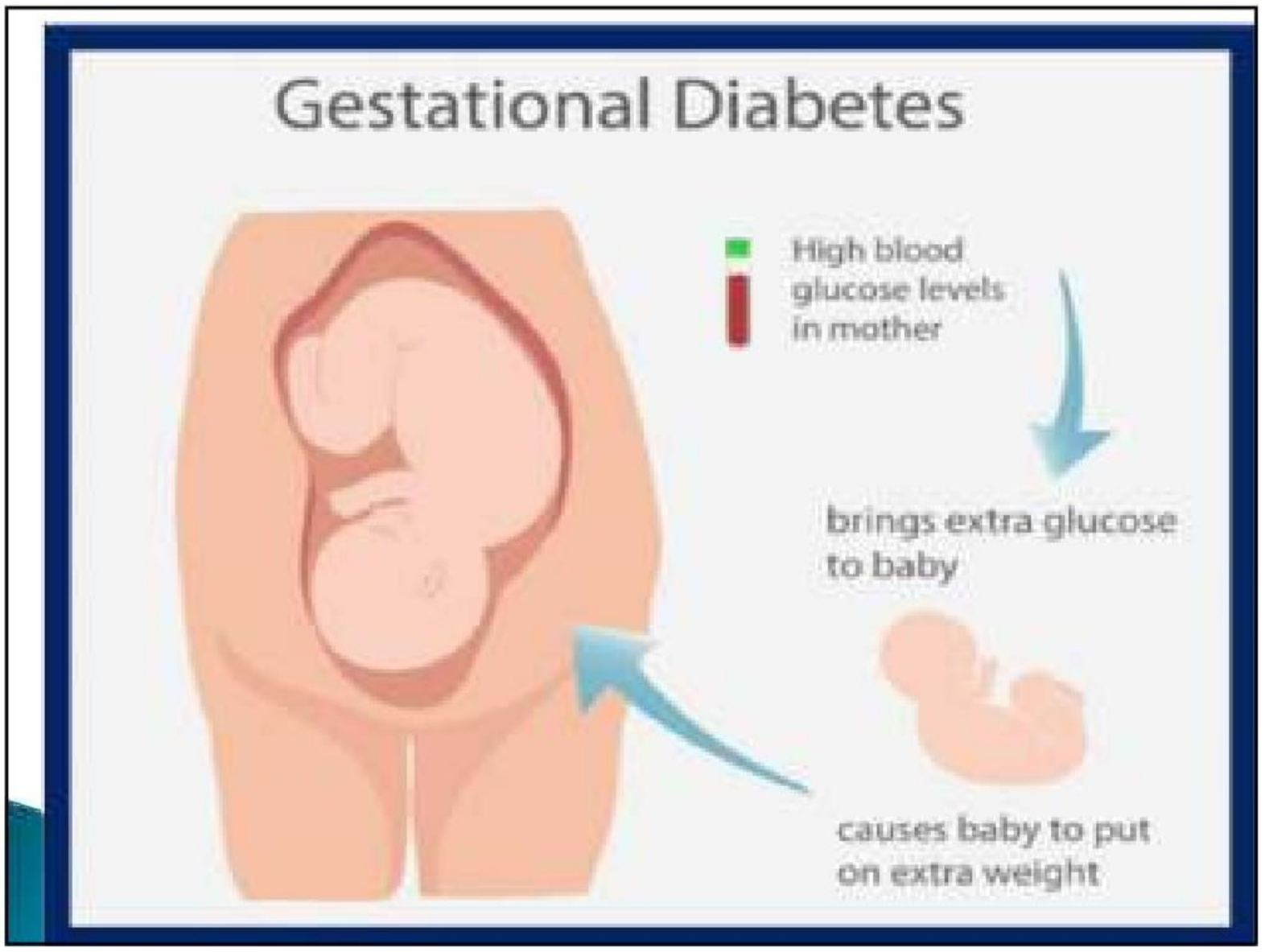
மற்றும்

முன்சூல்வலிப்புதற்போதைய காலத்தில்

- வாழ்க்கை முறை மாறுபாடு
- சிசுவின் இழப்பு வரலாறு

கர்ப்பகால வளர்சிதை மாற்றங்கள்

- கர்ப்பகாலத்தின்போது தாயுடன் குழந்தையைத் தொடர்படுத்தும் நஞ்சுக்கொடி, இரத்த விநியோகத்தில் பல்வோறு ஹார்மோன்களின் உயர்நிலையை உண்டாக்கும்.
- பொதுவாக அனைத்து செல்களில் இன்சுலினின் செயலை குறைக்கமால் இரத்த சர்க்கரையை உயர்த்திவிடுகின்றன.
- கர்ப்பகாலத்தில் உணவு உண்டபிறகு இரத்த சர்க்கரை அளவு மிதமாக அதிகரிப்பது சாதாரணமாகும்
- குழந்தை வளரும்போது நஞ்சுக்கொடி மேலும் மேலும் இன்சுலின் எதிராக செயலாற்றும் ஹார்மோன்களை உருவாக்குகின்றன.
- கர்ப்பகால நீரிழிவு நோயின் போது, நஞ்சுப்பை ஹார்மோன்கள் இரத்த சர்க்கரை அளவை அதிகரித்து குழந்தையின் வளர்ச்சியையும், உடல்நலத்தையும் பாதிக்கும்.
- கர்ப்பகால நீரிழிவு நோயாது கடைசி அறை கர்ப்பகாலத்தில் உருவாக்குகிறது, சில நேரங்களில் 20 வாரங்களில் நடைபெறும்.



அறிகுறிகள்

- ✓ அசாதாரண தாகம்
- ✓ அடிக்கடி சிறுநீர் கழித்தல்
- ✓ சோர்வு
- ✓ குமட்டல்
- ✓ அடிக்கடி யோனி, சிறுநீர்ப்பை மற்றும் தோல் தொற்றுகள்
- ✓ மங்கலான பார்வை
- ✓ பெரிய சிசு

கண்டறியும் முறைகள்

- **வரலாறு கண்டறிதல்**
- **மருத்துவ ஆபத்து காரணிகள்**
- **வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை**

இந்த வாய்வழி குளுக்கோஸ் சகிப்புத்தன்மை சோதனை கர்ப்பகால நீரிழிவு நோயை கண்டறிவதற்கு ஏற்றுக்கொள்ளப்பட்டதரமாக இருந்து வருகிறது.

இந்த பரிசோதனை 24-28 வாரங்கள் வரை கர்ப்பகாலத்தின் இரண்டாம் பாதியில் செய்யப்படும்.

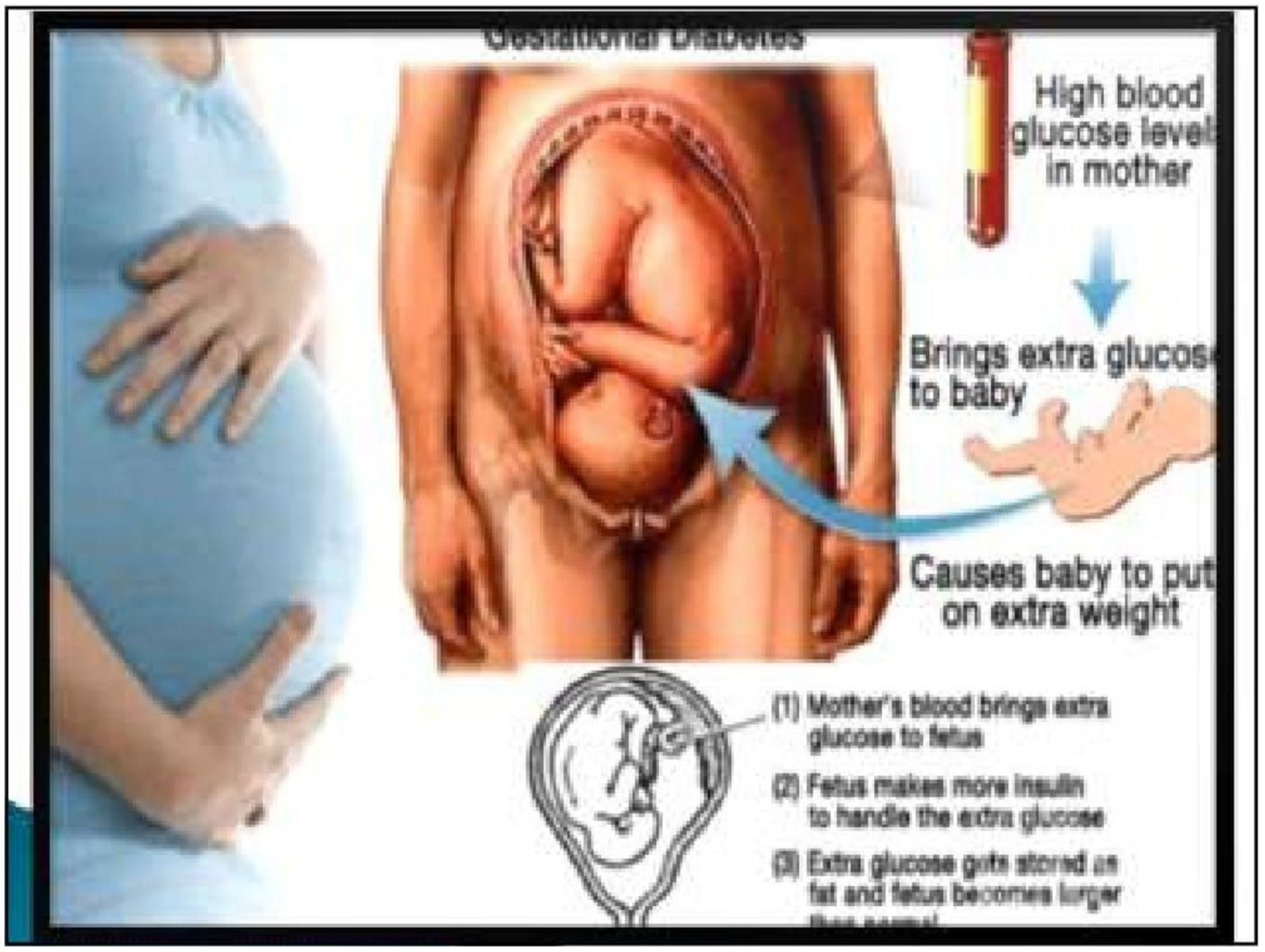
தாய் 50கிராம் குளுக்கோஸ் வாய்வழியாக எடுத்துகக்கொள்ளவேண்டும், மேலும் 2.3 மிலி இரத்த பரிசோதனைக்கு எடுகக்வேண்டும்.

140 கிராம் மில்லி மேல் இருந்தால் கர்ப்பகால நீரிழிவு நோய் உள்ளது என்பது உறுதி செய்யப்படும்.

கர்ப்பகால நீரிழிவு நோயால் விளைவுகள்

கர்ப்பகால நீரிழிவு நோயால் சில பாதகமான நீரிழிவு நோயால் விளைவுகள் ஏற்படும்: அவை பின்வருமாறு:

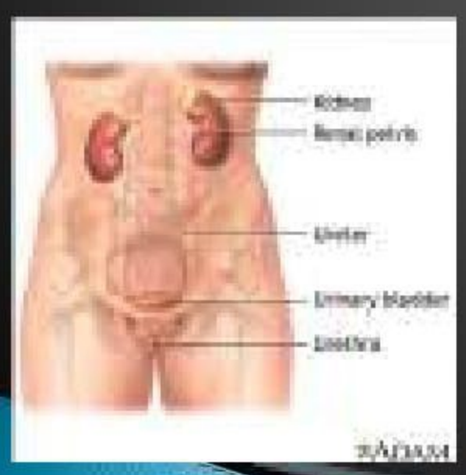
- கர்ப்பகால நீரிழிவு நோய் தொற்று ஏற்படுவது மிகவும் பொதுவானதாகும். இதனால், மிகை இரத்த சர்க்கரை ஏற்படும் இன்சுலின் தேவையும் அதிகரிக்கிறது. எனவே தாய்மார்கள் தன்சுத்தத்தை பேனுவதிலும் சிறுநீர் தொற்று ஏற்பட்டால் சிகிச்சை எடுத்துக் கொள்வதிலும் கவணமாக இருக்க வேண்டும்.
- கடைசி 3மாதங்களில் நஞ்சுப்பை ஹார்மோன்களின் அளவு அதிகரிப்பதால் இரத்த சர்க்கரை அளவும் அதிகரிக்கிறது. ஆதனால் இன்சுலின் தேவையும் அதிகரிக்கிறது.
- பிரசவத்திற்கு பிறகு தாய்மார்களை குளுக்கோஸ் சகிப்புத்தன்மை என்பதை உறுதி செய்த பின்னரே இன்சுலினை நிறுத்த வேண்டும், பொதுவாக சாதாரண நிலைக்கு வர 6 வாரங்கள் ஆகும்.



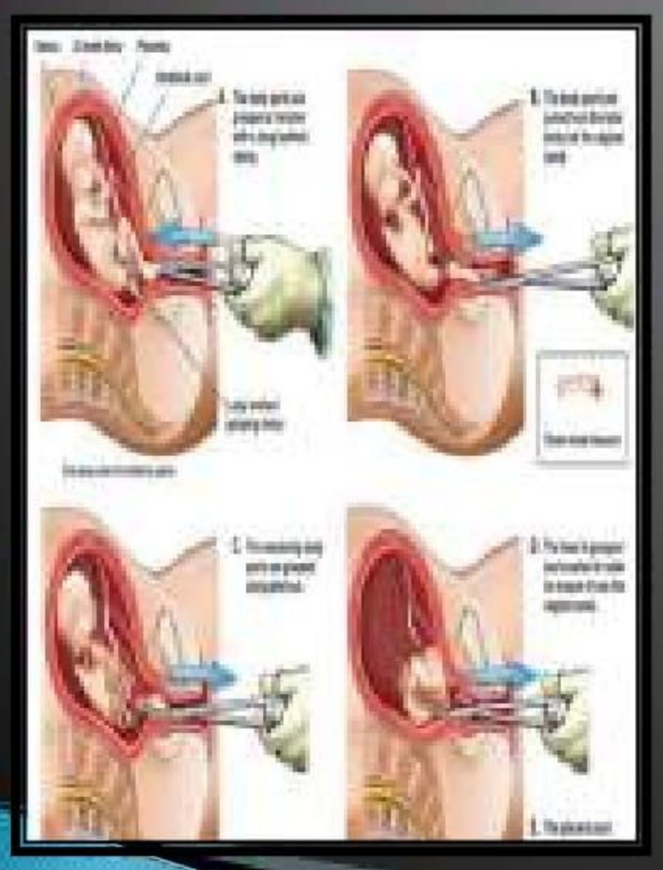
நீரிழிவு நோயால் ஏற்படும் தாய்மார்க்கு ஏற்படும் விளைவுகள்

கர்ப்பகால நீரிழிவு நோயும் கர்ப்பத்தை பாதிக்கிறது, சில தாய்மார்க்கு அதிகப்படியான அறிகுறியாக, அதிகப்படியான தாகம், பசி, சிறுநீர் தொற்றுகளித்தல் மற்றும் பலவீனம் இருக்கும்.

இவை தாயையும் சேயையும் பாதிக்கிறது.



தாய்மார்குரிய விளைவுகள்



- கருகலைப்பு
- கர்ப்பகாலத்தில் மிகைஇரத்த அழுத்தம்
- சிறுநீர் தொற்று
- பனிக்குட நீர் மிகைப்பு
- அசாதாரண வழங்கல்
- நீண்ட நேர பிரசவம்

மருத்துவ முறைகள்

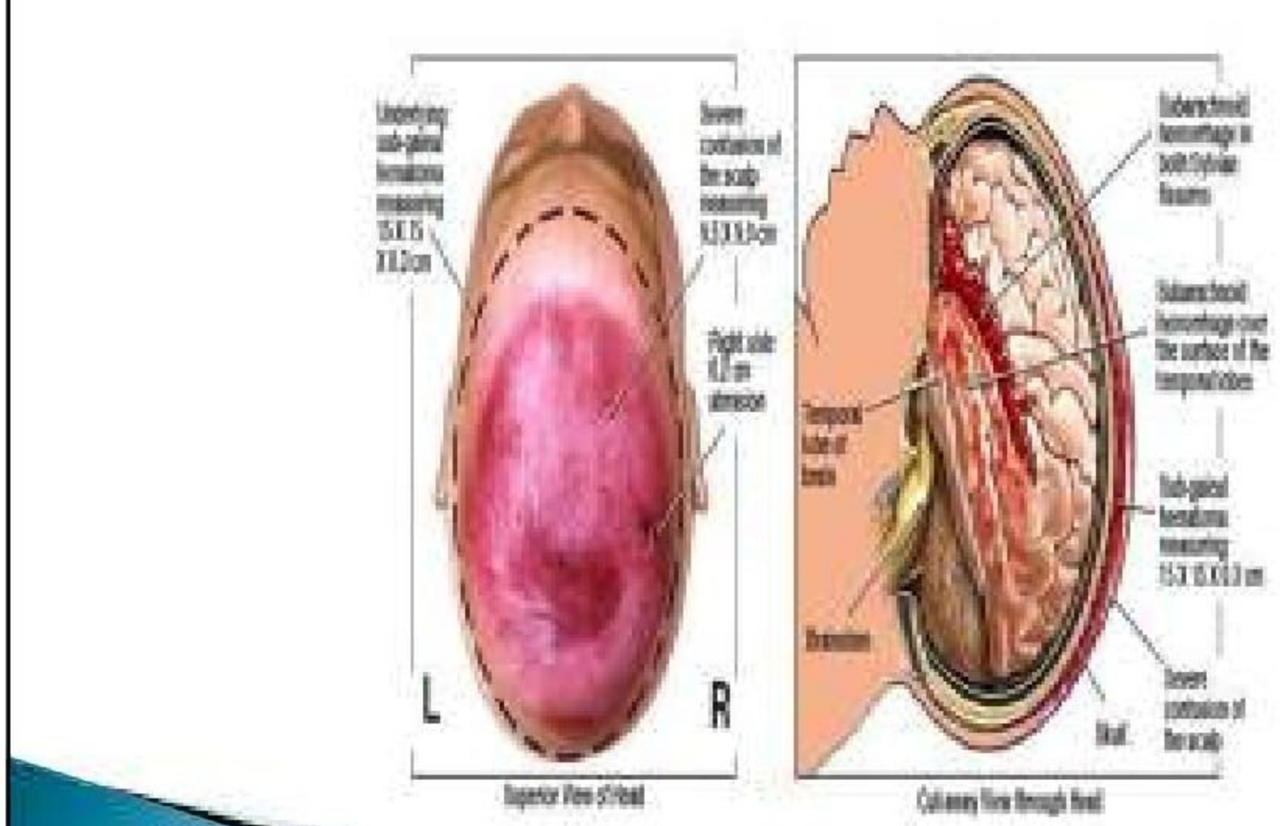
- கர்ப்பகால மேற்பார்வை
- சிறந்த உணவு முறைகள் மூலம் இரத்த சர்க்கரை கட்டுப்பாட்டில் வைக்கலாம்.
- உடற்பயிற்சி

விளைவுகள்

- அதிகப்படியான அமனியனுக்குரிய திரவத்தால் பிறப்பில் வழக்கத்துக்கு மாறான நிலை மற்றும் குறைபாட்டை உண்டாக்கும்.
- அதிகப்படியான எடை அளவு குழந்தை.
- பிறப்பில் காயங்கள்
- குறைந்த சர்க்கரை அளவு
- சுவாச துயர நோய்
- தாய்மார்ககு நீரிழிவு நோய் பிற்க்காலத்தில் அபாய காரணியை உண்டாக்கும.

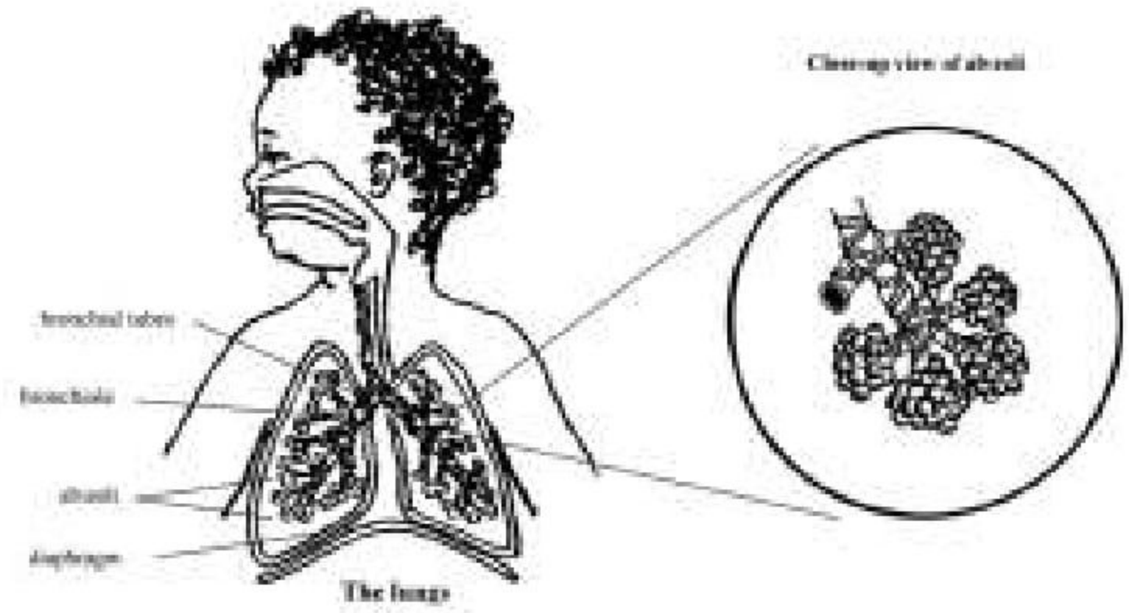
அதிகப்படியான அமனியனுக்குரிய திரவத்தால் பிறப்பில் வழக்கத்துக்கு மாறான நிலை

பிறப்பில் காயங்கள்



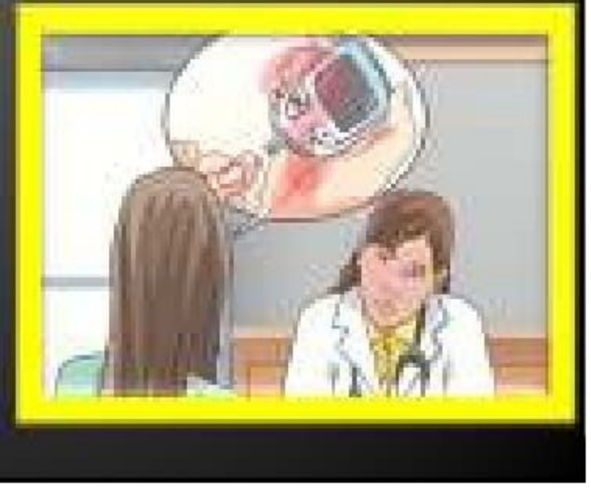
அதிகப்படியான எடை அளவு குழந்தை

சுவாச துயர நோய்



முடிவுரை

- மேற்கண்டவற்றில் கர்ப்பகால நீரிழிவு நோய் அதன் காரணிகள் அதன் நோயியால் மாற்றங்கள் இதன் விளைவுகள், சிகிச்சை முறைப்பற்றி விவாதித்தோம்
- இதன்மூலம் கர்ப்பகால நீரிழிவு நோயை சுய பாரமரிப்புமூலம் சரி செய்யலாம்




நகர்

ABSTRACT