

# A Study to Assess the Knowledge Regarding Gestational Diabetes Mellitus (GDM) Among Antenatal Mothers in Selected Hospitals, Thrissur

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**Abstract-** Gestational diabetes mellitus is defined as carbohydrate intolerance of variable severity with onset or first recognition during the present pregnancy. The present study focuses on assessing the knowledge regarding gestational diabetes mellitus among antenatal mothers in selected hospitals, Thrissur with a view to prepare an information booklet. The objectives of study were to assess the level of knowledge regarding gestational diabetes mellitus among antenatal mothers, to find out the association between level of knowledge regarding gestational diabetes mellitus among antenatal mothers with their selected demographic variables, to prepare and provide educational booklet regarding gestational diabetes mellitus to the antenatal mothers. A descriptive survey design was adopted for the study. The study was conducted on 60 antenatal mothers, who were selected by convenience sampling technique. The knowledge was assessed by using a structured knowledge questionnaire regarding gestational diabetes mellitus among antenatal mothers in selected hospitals, Thrissur. Following that, researchers prepared and distributed an information booklet regarding gestational diabetes mellitus. The statistical analysis of the study shows that among 60 samples, 17 (28.33%) of antenatal mothers possessed good knowledge, whereas 32 (53.34%) had moderate knowledge and 11 (18.33%) of antenatal mothers had poor knowledge regarding Gestational diabetes mellitus. It was also found that mothers who had heard about GDM before were more likely to have better knowledge. The study highlights the importance of educating antenatal mothers about GDM, by means of an educational booklet.

**Keywords:** Antenatal mother; Knowledge; Gestational diabetes mellitus; Information booklet.

## I. INTRODUCTION

Pregnancy is a critical period in a woman's life, requiring close monitoring to ensure the health of both the mother and the developing fetus. One of the most common medical complications during pregnancy is Gestational Diabetes Mellitus (GDM), a condition characterized by glucose intolerance with onset or first recognition during pregnancy. GDM can lead to several adverse maternal and fetal outcomes, including preeclampsia, cesarean delivery, macrosomia, neonatal hypoglycemia, and an increased risk of developing type 2 diabetes later in life for both mother and child. The prevalence of GDM is increasing globally, especially in developing countries like India, due to changing lifestyles, urbanization, and dietary patterns. The consequences of GDM are profound, impacting both short-term and long-term maternal and neonatal outcomes. Uncontrolled GDM increases the risk of complications such as preeclampsia, preterm labor, macrosomia, and neonatal respiratory distress syndrome. Additionally, women diagnosed with GDM have a higher likelihood of developing Type 2 Diabetes Mellitus later in life. Infants born to mothers with GDM are also at an increased risk of obesity and metabolic disorders in adulthood. Early detection and proper management of GDM are crucial in reducing these risks and improving pregnancy outcomes. Knowledge about GDM, its risk factors, symptoms, screening, and management is crucial for antenatal mothers to actively participate in their care. Educating pregnant women about GDM not only improves outcomes but also empowers them to make informed decisions about their health and that of their baby.

## II. NEED FOR THE STUDY

Gestational Diabetes Mellitus (GDM) is a growing public health concern affecting pregnant women globally. It is characterized by glucose intolerance that develops or is first recognized during pregnancy, leading to significant maternal and fetal complications if left unmanaged. The need for this study is imperative in ensuring that antenatal mothers receive adequate knowledge regarding GDM, leading to improved maternal and fetal health outcomes. By bridging the knowledge gap through structured education and awareness initiatives, the burden of GDM-related complications can be significantly reduced. This study will serve as a foundation for future research and interventions aimed at enhancing maternal healthcare services and promoting a healthier pregnancy experience for women worldwide.

## III. STATEMENT OF THE PROBLEM

A study to assess the knowledge regarding Gestational Diabetes Mellitus (GDM) among antenatal mothers in selected hospitals, Thrissur.

## IV. OBJECTIVES

1. To assess the level of knowledge regarding gestational diabetes mellitus among antenatal mothers.
2. To find out the association between levels of knowledge regarding gestational diabetes mellitus among antenatal mothers with their selected demographic variables.
3. To prepare and provide educational booklets regarding gestational diabetes mellitus to the antenatal mothers.

## V. HYPOTHESIS

(H<sub>0</sub>): There is no significant association between knowledge among the subjects regarding Gestational diabetes mellitus and their selected demographic variables.

(H<sub>1</sub>): There is a significant association between the knowledge among the subjects regarding Gestational Diabetes Mellitus and their selected demographic variables (such as age, education, parity, and trimester) among antenatal mothers.

## VI. METHODOLOGY

### Research Approach and Design

Quantitative Research Approach and Descriptive Design

### Setting of the study

The setting of the study was at Aswini hospital and GEM Hospital, Thrissur.

### Population

In this study, the population comprises of antenatal mothers who are attending Gynaec OPD of Aswini Hospital and GEM Hospital, Thrissur

### Sample

The sample size of the study was 60 antenatal mothers who are attending Gynaec OPD of Aswini Hospital and GEM Hospital, Thrissur.

### Sampling Technique

A Convenience sampling technique was adapted in the study for selecting the sample.

### Sample size

The sample size of the study was 60 antenatal mothers who are attending Gynaec OPD of Aswini Hospital and GEM Hospital, Thrissur.

### Sampling criteria

The following were used in the selection of samples for the study criteria.

### *Inclusion criteria:* -

- ✧ Antenatal mothers in 1<sup>st</sup> and 2<sup>nd</sup> Trimester.
- ✧ Mothers who are attending Gynaec OPD of Aswini Hospital and GEM Hospital, Thrissur.
- ✧ Those who are willing to participate in the study.

### *Exclusion criteria:*

- ✧ Mothers who cannot read Malayalam.
- ✧ Mothers who are not co-operating with the study.
- ✧ Mothers who were not attending gynaec OPD of Aswini Hospital and GEM Hospital.
- ✧ Mothers who have psychiatric problems.

### Tool/Instruments

- Demographic profile
- Knowledge assessment questionnaire
- Information booklet

VII. DESCRIPTION AND SCORING

Section A: Description of demographic profile of antenatal mothers.

Section B: Description of Distribution of knowledge among antenatal mothers.

Section C: Description of Association of level of knowledge with selected demographic variables

VIII.RESULTS

Section A: Description of demographic profile of antenatal mothers.

- With regards to the age ,majority of the samples with 18.33% belongs to the age groups of 24 and 25 years,16.66% belongs to the age group of 26 years,11.66% belongs to the age group of 28 years,10.00% belongs to the age group of 27 years,6.67% belongs to the age group of 29 years,5.00% belongs to the age groups of 22,23 and 31 years and only 1.67% belongs to the age groups of 30 and 32 years.
- With regards to Religion of antenatal mothers show that 35 (58.34%) were Hindus, 18 (30.00%) were Christians and 7 (11.66%) were Muslims.

- Regarding the Education, only 1 (1.67%) were having primary education and high school level education, 12 (20.00%) were having higher secondary level education and 46 (76.66%) having graduation and above.
- With regards to the weeks of pregnancy, most of the samples with 51.67% were in the gestational age group 13-26 weeks, whereas 48.33% were in the group of 0-12 weeks.
- Regarding the residence of the samples, 55.00% belonged to the rural area and 45.00% were from the urban area.
- With regards to family income, 31.66% of the samples had a monthly income of above Rs. 30,001, while 26.67% had an income between Rs. 10,001 t Rs. 20,000. About 25% belonged to the income group of Rs. 20,001–Rs. 30,000, and only 16.67% had an income of less than Rs.10,000.
- Regarding the type of family, majority of the samples 60% belonged to nuclear families, 30% to joint families, and 10% were from extended families.
- With regards to previous knowledge, the majority of the samples (56.67%) reported having prior knowledge, while 43.33% had no previous knowledge.

Section B: Description of the level of knowledge among the antenatal mothers regarding Gestational diabetes mellitus.

LEVEL OF KNOWLEDGE	SCORING RANGE	FREQUENCY(n)	PERCENTAGE (%)
Poor knowledge	1-6	11	18.33%
Moderate knowledge	7-12	32	53.34%
Good knowledge	13-18	17	28.33%

As observed from the above table, out of 60 samples, 28.33% of antenatal mothers had good knowledge, 53.34% had moderate knowledge, and 18.33% of antenatal mothers had poor knowledge regarding the Gestational diabetes mellitus.

Section C: Association of level of knowledge with selected demographic variables

The data gives the description on the association between levels of knowledge regarding Gestational Diabetes Mellitus (GDM) among antenatal mothers with selected demographic variables. The selected demographic variables are age, religion, education, weeks of pregnancy, area of residence, family income, type of family, previous knowledge about GDM.

The data shows that Chi square value obtained is less than the table value for all demographic variables except for previous knowledge. Hence, the null hypothesis  $H_0$  there is no significant association between knowledge among the subjects regarding Gestational diabetes mellitus and their selected demographic variables, is accepted and the research hypothesis  $H_1$  is rejected.

IX. DISCUSSION

In relation to the first objective which was to assess the level of knowledge regarding Gestational Diabetes Mellitus among antenatal mothers, The detailed analysis of data revealed that out of 60 antenatal

women, 11 (18.33%) had poor knowledge, 32 (53.34%) exhibited moderate knowledge, and 17 (28.33%) demonstrated good knowledge about GDM.

These findings align with a previous comprehensive study by B. Bhowmik was conducted in 15 outpatient clinics of the Diabetic Association of Bangladesh, and the Results showed that 26.3% had good knowledge, 63.1% average, and 10.6% poor knowledge. For the second objective To determine the association between level of knowledge regarding Gestational Diabetes Mellitus among antenatal mothers with their selected demographic variables, the current study identified a statistically significant association between knowledge of antenatal mothers about Gestational Diabetes Mellitus and the selected demographic variable, which is the previous knowledge ( $\chi^2 = 13.698$ , significant at the 5% level). However, no significant association was found between knowledge levels and other demographic factors such as age ( $\chi^2 = 23.272$ ), religion ( $\chi^2 = 6.387$ ), education ( $\chi^2 = 9.057$ ), gestational age ( $\chi^2 = 3.806$ ), area of residence ( $\chi^2 = 4.555$ ), family income ( $\chi^2 = 6.464$ ), and type of family ( $\chi^2 = 4.550$ ). These findings align with a cross-sectional study was conducted at National Guard healthcare centers in Jeddah, Saudi Arabia, and the Results showed that 53.6% had good knowledge, 35.2% moderate, and 11.2% low knowledge. Higher education, previous pregnancies, and prior awareness of GDM were associated with better understanding. For the third objective to prepare and provide educational booklet regarding Gestational Diabetes Mellitus to antenatal mothers, an educational booklet was developed covering vital aspects of GDM including risk factors, etiology, signs and symptoms, diagnosis, complications, and management strategies.

## X. CONCLUSION

This study is imperative in ensuring that antenatal mothers receive adequate knowledge regarding GDM, leading to improved maternal and fetal health outcomes. By bridging the knowledge gap through structured education and awareness initiatives, the burden of GDM related complications can be significantly reduced. This study will serve as a foundation for future research and interventions aimed at enhancing maternal healthcare services and promoting a healthier pregnancy experience for women worldwide.

## Nursing Implications

The study findings can be used to improve the knowledge regarding management of GDM in the general population. The findings of the study have several implications in the field of nursing service, education, and research.

## Nursing Practice

- Nursing students must be equipped to provide health education and counselling during their clinical training.
- Nurses can play a vital role in educating antenatal mothers about GDM through one-on-one counseling, group sessions, or community outreach programs.

## Nursing Education

- Under the guidance of educators, student nurses can distribute booklets, pamphlets, and leaflets about GDM.
- Nurse educators should organize health exhibitions and awareness programs to educate women on GDM prevention and management.
- Training programs should be conducted to enhance the communication and teaching skills of nursing students, especially in identifying high-risk individuals.

## Nursing Administration

- Nursing administrators can extend the roles of nurses by including them in awareness campaigns and health promotion initiatives.
- Findings of this study can be utilized to design training programs and policies focused on maternal health education.
- Nurse leaders should facilitate the development of guidelines and resources to ensure consistent education on GDM across healthcare settings.

## Nursing Research

The study can serve as a foundation for future research and a secondary data source for literature review. Researchers can use the findings to explore the effectiveness of different educational strategies in improving GDM awareness.

Recommendations

- Similar studies should be conducted on a larger sample and over extended time frames for broader applicability.
- Comparative studies in diverse settings are recommended.
- Future research can explore the effectiveness of various educational methods, such as self-instructional modules, pamphlets, leaflets, and computer-assisted learning.
- The replication of this study among antenatal mothers diagnosed with GDM is encouraged.

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