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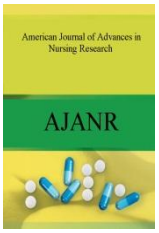

A STUDY TO ASSESS THE LEVEL OF KNOWLEDGE ON GESTATIONAL DIABETES MELLITUS AMONG GDM MOTHERS AT SELECTED HOSPITAL, CHENNAI

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ABSTRACT

Background: Gestational Diabetes Mellitus (GDM) is a common metabolic disorder during pregnancy associated with significant maternal and fetal complications. Adequate knowledge regarding GDM is essential for effective self-management and prevention of adverse outcomes. However, many mothers lack sufficient awareness about the condition. Statement of the Problem A Study to assess the level of Knowledge on Gestational Diabetes Mellitus among GDM Mothers at selected Hospital, Chennai Objectives: To assess the level of knowledge on Gestational Diabetes Mellitus among GDM mothers and to determine its association with selected demographic and obstetric variables. Methods: A quantitative descriptive research design was adopted. The study was conducted among 50 GDM mothers attending antenatal clinics at a selected hospital in Chennai. A non-probability convenient sampling technique was used. Data were collected using a structured knowledge questionnaire. Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (t-test and ANOVA) were used for data analysis. Results: The findings revealed that the majority of mothers (96%) had poor knowledge, while only 4% had moderate knowledge regarding GDM. The mean knowledge score was 9.0 ± 1.47. Significant associations were observed between knowledge levels and selected demographic variables such as age ($p = 0.016$), educational status ($p = 0.041$), monthly income ($p = 0.001$), and religion ($p = 0.0001$). Among obstetric variables, gestational age ($p = 0.002$), gravida ($p = 0.001$), parity ($p = 0.014$), and duration of treatment for pregnancy-induced hypertension ($p = 0.0001$) showed statistically significant associations. Conclusion: The study concluded that most GDM mothers had inadequate knowledge regarding Gestational Diabetes Mellitus. The findings highlight the urgent need for structured educational interventions to improve awareness and promote effective self-management among GDM mothers.

INTRODUCTION

Background of the Study

Pregnancy is a profound physiological state characterized by significant metabolic adaptations. Gestational Diabetes Mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy.

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This condition typically manifests during the second or third trimester when the mother's pancreas cannot produce enough insulin to overcome the antagonistic effects of placental hormones, such as human placental lactogen (hPL), cortisol, and growth hormone. These hormones naturally induce a state of insulin resistance to ensure a steady supply of glucose for fetal growth; however, in GDM, this resistance becomes pathological, leading to maternal hyperglycemia.

The clinical significance of GDM is twofold, affecting both the mother and the fetus. For the mother, GDM increases the risk of preeclampsia, polyhydramnios, and a higher likelihood of surgical interventions like Cesarean sections. For the fetus, chronic exposure to high maternal glucose levels leads to fetal hyperinsulinemia, resulting in macrosomia (excessive birth weight), neonatal hypoglycemia, and respiratory distress syndrome. Beyond the immediate perinatal period, GDM serves as a powerful predictor of future health; women with GDM have a 50% to 70% chance of developing Type 2 Diabetes Mellitus (T2DM) within a decade of delivery, and their offspring face an increased risk of childhood obesity and early-onset metabolic disorders.

The global prevalence of GDM is rising in tandem with the obesity epidemic and sedentary lifestyles. According to the International Diabetes Federation (IDF) Atlas (2021), approximately 21.1 million or 16.7% of live births worldwide were affected by some form of hyperglycemia in pregnancy. India, often termed the "Diabetes Capital of the World," faces a unique challenge. Asian Indian women have a high genetic predisposition to insulin resistance. Research indicates that Indian women have an 11.3-fold higher risk of developing GDM compared to Caucasian women. The DIPSI (Diabetes in Pregnancy Study Group India) guidelines highlight that the prevalence in India varies from 10% to 27% depending on the geographical location and socio-economic status, with urban centers showing the highest rates.

Need for the Study

The justification for this study is rooted in the alarming statistics specific to South India. Chennai, a major metropolitan hub, represents a "hotspot" for GDM due to rapid urbanization, dietary shifts toward processed carbohydrates, and reduced physical activity. A landmark study conducted by Seshiah et al. in South India reported that the prevalence of GDM was significantly higher in urban areas (17.8%) compared to semi-urban (13.8%) and rural areas (9.9%). Recent clinical audits in tertiary care hospitals in Chennai suggest that nearly one in every four to five pregnant women is diagnosed with GDM, making it one of the most common obstetric complications in the region.

Knowledge is the cornerstone of effective self-management in chronic conditions. For a GDM mother, the complexity of managing the condition—ranging from frequent self-monitoring of blood glucose (SMBG) to strict Medical Nutrition Therapy (MNT)—requires a high level of health literacy. However, studies reveal a staggering gap between diagnosis and understanding. A study by Shriraam et al. (2017) in Tamil Nadu found that nearly half of the pregnant women surveyed had "poor knowledge" regarding the causes and consequences of GDM. Many mothers were unaware that GDM could recur in future pregnancies or that it posed a long-term risk of Type 2 Diabetes for both themselves and their children.

The "Need for the Study" is further emphasized by the necessity to identify which factors contribute to low knowledge levels. Supportive research by Bhavadharini et al. (2016) indicated that awareness is significantly influenced by variables such as maternal age, educational status, and parity. For instance, primigravida mothers (first-time mothers) may lack the experiential knowledge of multiparous women, while those from lower socio-economic backgrounds may face barriers in accessing reliable health information. By associating knowledge with Demographic Variables (education, income) and Obstetric Variables (family history, previous GDM), this study can help healthcare providers pinpoint "high-risk" groups who require more intensive counselling.

The concept of pregnancy as a "teachable moment Okely JA et al. (2019)**,** who emphasized that diagnosis of GDM increases women's motivation to adopt healthier behaviors.The gestational period is widely recognized as a "teachable moment" in healthcare. Mothers are often highly motivated to adopt healthy behaviours for the sake of their baby's wellbeing. If a mother in a Chennai hospital is diagnosed with GDM but lacks the knowledge to manage it, this vital window of opportunity is lost, leading to poor glycaemic control and preventable complications. There is a scarcity of recent descriptive studies in Chennai that specifically evaluate the knowledge of women *already diagnosed* with the condition. Therefore, this study is essential to provide data-driven insights that can be used to develop structured, culturally sensitive health education modules, ultimately improving maternal and neonatal health outcomes in the city.

Statement of the Problem

A Study to assess the level of Knowledge on Gestational Diabetes Mellitus among GDM Mothers at selected Hospital, Chennai

Objectives

1.To assess the level of Knowledge on Gestational

Diabetes Mellitus among the GDM. Mother's
2.To associate the Level of Knowledge on Gestational Diabetes Mellitus with the Selected Demographic Variables
3.. To associate the Level of Knowledge on Gestational Diabetes Mellitus with the Selected Obstetric Variables
Operational Definition

1. Assess

Assess refers to the systematic process of collecting information from GDM mothers regarding their knowledge on Gestational Diabetes Mellitus using a structured questionnaire designed for this study.

2. Level of Knowledge

Level of Knowledge refers to the degree of understanding possessed by GDM mothers regarding Gestational Diabetes Mellitus, including its causes, risk factors, symptoms, management, and complications, as measured by their scores on the structured knowledge questionnaire.

- Scores was categorized as:
  - Inadequate Knowledge
  - Moderately Adequate Knowledge
  - Adequate Knowledge

3. Gestational Diabetes Mellitus (GDM)

Gestational Diabetes Mellitus refers to a condition characterized by glucose intolerance with onset or first recognition during pregnancy, diagnosed by a physician based on standard clinical criteria.

4. GDM Mothers

GDM Mothers refers to pregnant women who have been diagnosed with Gestational Diabetes Mellitus by a qualified healthcare professional and are attending antenatal care at the selected hospital in Chennai during the period of data collection.

Research Hypothesis

There is a significant association between the level of knowledge on Gestational abetes Mellitus among GDM mothers and their selected demographic variables.

Assumptions

GDM mothers may have varying levels of knowledge regarding Gestational Diabetes Mellitus.
Knowledge regarding GDM can influence maternal and fetal health outcomes.
Demographic variables such as age, education, and parity may influence the level of knowledge.
The participants will provide honest and accurate responses during data collection.

Research Approach

A **quantitative research approach**

Research Design

A **descriptive research design**

Setting of the Study

The study was conducted in RSRM Hospitals in Chennai that provide antenatal care services for pregnant women diagnosed with Gestational Diabetes Mellitus.

Population

Target Population

All mothers diagnosed with Gestational Diabetes Mellitus attending antenatal clinics. In Tamil Nadu
Accessible Population
Mothers diagnosed with Gestational Diabetes Mellitus attending antenatal clinics. In selected Hospitals ,Chennai

Sample

The sample consists of GDM mothers who meet the inclusion criteria and are available during the period of data collection.

Sample Size

The sample size consists of 50 GDM mothers, selected based on feasibility.

Sampling Technique

A **non-probability convenient sampling technique** was used to select the samples.

Criteria for Sample Selection

Inclusion Criteria

- Mothers diagnosed with Gestational Diabetes Mellitus
- Mothers attending antenatal clinics at the selected hospital
- Mothers who are willing to participate in the study
- Mothers who can understand Tamil or English

Exclusion Criteria

- Mothers with pre-existing diabetes mellitus
- Mothers who are critically ill or not available during data collection

Description of the Tool

The tool consists of

Section A: Demographic Variables

Includes variables such as:
Age, Educational status, Occupation, income, Type & Duration of Marriage, Dietary Pattern, Residence, BMI, Source of Information

Section B : Obstetric Variables

Includes variables such as:
Registration of Pregnancy, No of Antenatal Visits, Gestational age in Weeks, Gravida
Parity, Mode of Conception, History of Gestational Diabetes Mellitus in Previous Pregnancy
Treatment taken for Gestational Diabetes Mellitus, Complications arise due to a history of Gestational Diabetes Mellitus, History of Pregnancy Induced Hypertension in Previous Pregnancy, Treatment. Duration of treatment & complications arise due to a history of Pregnancy Induced Hypertension

Section C: Structured Knowledge Questionnaire

- Contains multiple-choice questions related to:
  - Meaning of GDM

- Causes and risk factors
- Signs and symptoms
- Diagnosis
- Management (diet, exercise, medication)
- Complications

Scoring Procedure

- Each correct answer carries **1 mark**
- Incorrect answer carries **0 mark**

Interpretation of Scores

- Inadequate Knowledge: _0-49 _%
- Moderately Adequate Knowledge: _50-74__%
- Adequate Knowledge: .>75 %

Validity of the Tool

The tool will be validated by experts in the field of obstetrics and gynecological nursing, medical professionals, and research experts to ensure content validity.

Reliability of the Tool

Reliability of the tool will be established using methods such as:

- Split-half method / Cronbach's alpha The reliability coefficient will be calculated to ensure consistency.

Data Collection Procedure

- Formal permission was obtained from the hospital authority.
- The purpose of the study was explained to participants.
- Informed consent are obtained.
- Data was collected using a structured questionnaire.
- Each participant was approximately **20–30 minutes** to complete the questionnaire.

Plan for Data Analysis

Data was analyzed using descriptive and inferential statistics:

Descriptive Statistics

- Frequency and percentage
- Mean and standard deviation

Inferential Statistics

- Chi-square test to find association between knowledge level and demographic variables

Ethical Considerations

- Approval was obtained from the Institutional Ethical Committee.
- Permission from hospital authorities was secured.
- Informed consent was obtained from participants.
- Confidentiality and anonymity was maintained throughout the study.

Table 1. Frequency and percentage distribution of demographic variables of the GDM mothers.
N = 50

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
≤20	10	20.0
21 – 25	17	34.0
26 – 30	7	14.0
>30	16	32.0
Educational status		
No formal education	12	24.0
Primary education	18	36.0
Higher secondary education	4	8.0
Under graduate	16	32.0
Post graduate	-	-
Occupation		
Employed	2	4.0
Labourer	31	62.0
Home maid	12	24.0

Demographic Variables	Frequency (f)	Percentage (%)
Class IV worker	-	-
Housewife	5	10.0
Own business	-	-
Income per month		
<Rs.10000	-	-
Rs.10001-15000	13	26.0
15001-20000	33	66.0
>20001	4	8.0
Type of Marriage		
Consanguineous	23	46.0
Non-Consanguineous	27	54.0
Duration of Marriage		
<2 Years	10	20.0
2-4 Years	19	38.0
4-6 Years	10	20.0
>Years	11	22.0
Type of Family		
Nuclear Family	38	76.0
Joint Family	12	24.0
Extended Family	-	-
Area of Residence		
Rural	25	50.0
Urban	25	50.0
Dietary Pattern		
Vegetarian	1	2.9
Mixed (both & non vegetarian)	49	58.0
Ova Vegetarian	-	-
BMI Level based on WHO standards (in kg/m^2)		
Malnourished (< 18.5)	5	10.0
Normal (18.5-24.9)	29	58.0
Over Weight (25-29.9)	6	12.0
Obesity (≥30)	10	20.0
Religion		
Hindu	37	74.0
Christian	5	10.0
Muslim	8	16.0
Others	-	-
Source of information on Gestational Diabetes Mellitus		

Demographic Variables	Frequency (f)	Percentage (%)
Mass Media	-	-
News Paper /Magazine	-	-
Family/Friends	22	44.0
Health care Professionals	28	56.0
Others	-	-

Table 2: Frequency and percentage distribution of obstetrical variables of the GDM mothers. N = 50

Obstetrical Variables	Frequency (f)	Percentage (%)
Registration of Pregnancy		
Registered	50	100.0
Not registered	-	-
No. of Antenatal Visits		
No visit	-	-
<4 visits	39	78.0
>4 visits	11	22.0
Gestational age in Weeks		
20 – 22	9	18.0
23 – 25	20	40.0
26 – 28	21	42.0
Gravida		
1	28	56.0
2	14	28.0
3 and above	8	16.0
Parity		
0	37	74.0
1	8	16.0
2	5	10.0
3 and above	-	-
Mode of Conception		
Natural conception	33	66.0
Induction of Ovulation	12	24.0
Assisted Reproductive Technique	5	10.0
History of Gestational Diabetes Mellitus in Previous Pregnancy		
No	2	4.0
Yes	13	26.0
Not applicable	35	70.0
If yes, treatment taken for Gestational Diabetes Mellitus		

Obstetrical Variables	Frequency (f)	Percentage (%)
Oral Hypoglycaemic Agents	-	-
Insulin therapy	13	26.0
Alternative and Complementary therapies	-	-
No treatment taken	-	-
Not Applicable	37	74.0
Duration of treatment taken for Gestational Diabetes Mellitus		
<1 Year	-	-
1-2 Years	5	10.0
>2 Years	-	-
Still on Medication	8	16.0
Not applicable	37	74.0
If any complications arise due to a history of Gestational Diabetes Mellitus		
No	37	74.0
Yes	13	26.0
History of Pregnancy Induced Hypertension in Previous Pregnancy		
No	12	24.0
Yes	5	10.0
	33	66.0
If yes, treatment taken Pregnancy Induced Hypertension		
Anti Hypertensives	5	10.0
Alternative and Complementary therapies	-	-
No treatment taken	1	2.0
Not applicable	44	88.0
Duration of treatment taken Pregnancy Induced Hypertension		
<1 Year	-	-
1-2 Years	-	-
>2 Years	-	-
Still on Medication	6	12.0
Not applicable	44	88.0
If any complications arise due to a history of Pregnancy Induced Hypertension		
No	38	
Yes	5	

All mothers were registered for antenatal care (100%), which is a positive indicator of healthcare access. However, 78% had fewer than four antenatal visits, suggesting inadequate utilization of maternal health services. The majority were in the third trimester (26–28 weeks, 42%), the typical period when GDM is diagnosed. More than half were primigravida (56%), and 74% were nulliparous, indicating that first-time mothers formed a significant portion of the sample. Most pregnancies were naturally conceived (66%), though a considerable number required fertility assistance. Only 26% had a history of GDM, while the majority were newly diagnosed cases. Among those with prior GDM, insulin therapy (26%) was the primary

treatment modality. Additionally, 26% reported complications related to GDM, emphasizing its clinical significance. A smaller proportion had a history of pregnancy-induced hypertension (10%), but among them, some experienced complications, indicating overlapping obstetric risks.

Table 3: Frequency and percentage distribution of level of knowledge on gestational diabetes among GDM mothers. N = 50

Level of Knowledge	Frequency.	Percentage (%)
Poor knowledge (0 – 10)	48	96.0
Moderate knowledge (11 – 15)	2	4.0
Good knowledge (15 – 20)	-	-

The findings revealed that 96% of GDM mothers had poor knowledge, while only 4% had moderate knowledge, and none demonstrated good knowledge. The mean knowledge score was 9.0 ± 1.47, with scores ranging from 5 to 12, indicating overall inadequate understanding of GDM. This finding highlights a critical knowledge deficit, despite participants being diagnosed and receiving antenatal care. It suggests that routine clinical interactions may not be sufficient to ensure adequate patient education. These results are consistent with previous studies conducted in Tamil Nadu, which reported poor awareness among GDM mothers regarding disease management, complications, and long-term risks.

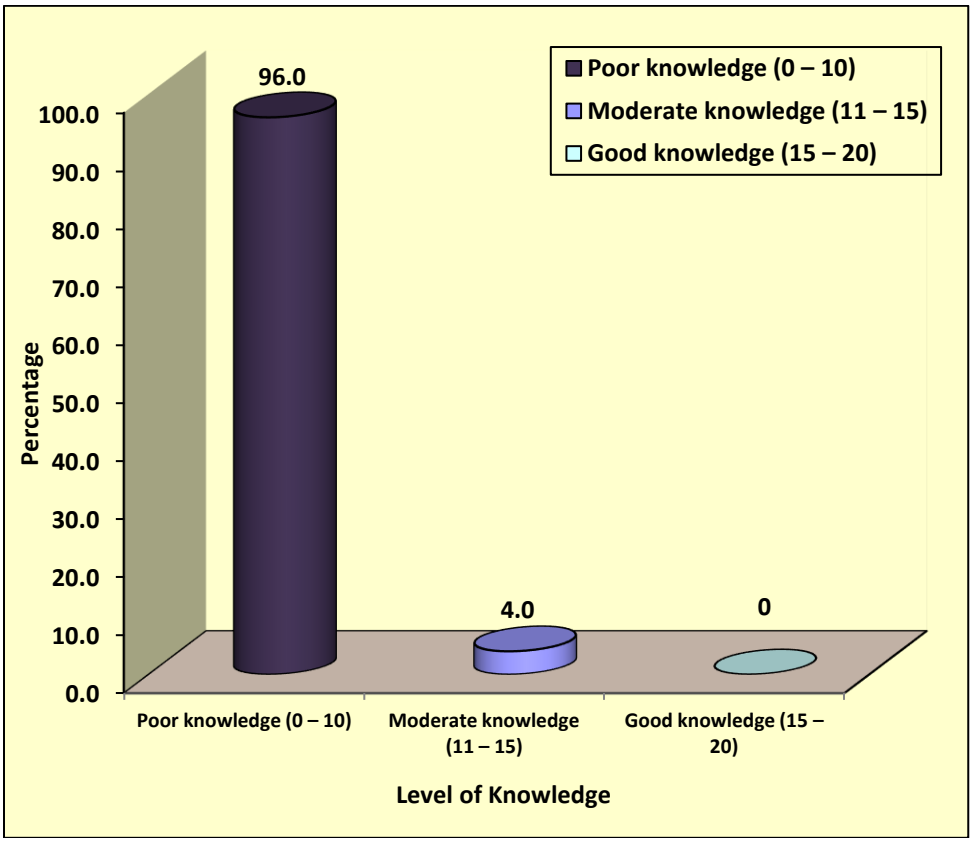

Figure 1. Percentage distribution of level of knowledge on gestational diabetes among GDM mothers

Table 4: Assessment of knowledge scores on gestational diabetes among GDM mothers
N = 50

Knowledge	Score
Minimum	5.0
Maximum	12.0
Median	10.0
Mean	9.0
S,D	1.47

Table 5: Association of level of knowledge on gestational diabetes among GDM mothers with their selected demographic variables.
N = 50

Demographic Variables	F	Mean	S.D	One Way ANOVA / Student independent "t" test & p-value
Age in years				
≤20	10	8.00	2.16	**F=3.807 p=0.016 S***
21 – 25	17	9.76	1.09	
26 – 30	7	9.14	1.46	
>30	16	8.75	0.86	
Educational status				
No formal education	12	9.25	0.62	**F=2.987 p=0.041 S***
Primary education	18	6.39	1.82	
Higher secondary education	4	8.25	0.96	
Under graduate	16	9.69	1.30	
Post graduate	-	-	-	
Occupation				
Employed	2	10.0	0.00	F=1.111 p=0.354 N.S
Labourer	31	9.50	2.12	
Home maid	12	8.77	1.83	
Class IV worker	-	-	-	
Housewife	5	9.1	1.16	
Own business	-	-	-	
Income per month				
<Rs.10000	-	-	-	**F=7.670 p=0.001 S***
Rs.10001-15000	13	8.08	1.93	
15001-20000	33	9.52	1.03	
>20001	4	7.75	0.50	
Type of Marriage				t=1.013 p=0.317 N.S
Consanguineous	23	9.22	0.90	
Non-Consanguineous	27	8.81	1.62	
Duration of Marriage				F=2.403 p=0.080 N.S
<2 Years	10	8.00	2.16	
2-4 Years	19	9.47	1.35	

Demographic Variables	F	Mean	S.D	One Way ANOVA / Student independent "t" test & p-value
4-6 Years	10	9.10	1.19	
>Years	11	9.00	0.63	
Type of Family				
Nuclear Family	38	8.97	1.65	t=0.332 p=0.741 N.S
Joint Family	12	9.08	0.67	
Extended Family	-	-	-	
Area of Residence				
Rural	25	8.60	1.58	t=1.979 p=0.054 N.S
Urban	25	9.40	1.26	
Dietary Pattern				
Vegetarian	1	10.00	-	-
Mixed (both & non vegetarian)	49	9.98	1.48	
Ova Vegetarian	-	-	-	
BMI Level based on WHO standards (in kg/m^2)				
Malnourished (< 18.5)	5	10.0	0.00	F=2.739 p=0.054 N.S
Normal (18.5-24.9)	29	8.59	1.76	
Over Weight (25-29.9)	6	10.0	0.00	
Obesity (≥30)	10	9.10	0.57	
Religion				
Hindu	37	9.54	0.96	**F=20.0 p=0.0001 S***
Christian	5	8.40	1.52	
Muslim	8	6.88	1.46	
Others	-	-	-	
Source of information on Gestational Diabetes Mellitus				
Mass Media	-	-	-	t=1.635 p=0.109 N.S
News Paper /Magazine	-	-	-	
Family/Friends	22	9.36	1.18	
Health care Professionals	28	8.71	1.63	
Others	-	-	-	

*p<0.05, S – Significant N.S – Not Significant, p>0.05

The study identified several statistically significant associations:

- **Age (p = 0.016)**: Mothers aged 21–25 years had relatively higher knowledge scores, possibly due to better exposure to health information.
- **Educational status (p = 0.041)**: Higher education was associated with better knowledge, reinforcing the role of literacy in health awareness.
- **Monthly income (p = 0.001)**: Mothers with moderate income levels demonstrated better knowledge, likely due to improved access to healthcare resources.
- **Religion (p = 0.0001)**: A significant association was observed, which may reflect socio-cultural differences in health-seeking behavior.

However, variables such as occupation, type of marriage, family type, residence, BMI, and source of information showed **no significant association (p > 0.05)**.
These findings indicate that **socio-economic and educational factors play a crucial role** in determining knowledge levels.

Table 6: Association of level of knowledge on gestational diabetes among GDM mothers with their selected obstetrical variables.
N = 50

Obstetrical Variables	**F**	**Mean**	**S.D**	**One Way ANOVA / Student independent "t" test & p-value**
Registration of Pregnancy				
Registered	50	9.00	1.47	-
Not registered	-	-	-	
No. of Antenatal Visits				
No visit	-	-	-	t=0.998 p=0.325 N.S
<4 visits	39	8.92	1.61	
>4 visits	11	9.27	0.79	
Gestational age in Weeks				
20 – 22	9	9.33	1.00	**F=7.171 p=0.002 S***
23 – 25	20	8.15	1.53	
26 – 28	21	9.67	1.19	
Gravida				
1	28	8.43	1.50	**F=8.204 p=0.001 S***
2	14	10.14	0.53	
3 and above	8	9.00	1.41	
Parity				
0	37	8.64	1.57	**F=4.668 p=0.014 S***
1	8	10.00	0.00	
2	5	10.00	0.00	
3 and above	-	-	-	
Mode of Conception				
Natural conception	33	9.06	1.68	F=2.089 p=0.135 N.S
Induction of Ovulation	12	9.33	0.78	
Assisted Reproductive Technique	5	7.80	0.45	
History of Gestational Diabetes Mellitus in Previous Pregnancy				
No	2	10.00	0.00	F=1.940 p=0.155 N.S
Yes	13	9.94	1.13	
Not applicable	35	8.74	1.56	
If yes, treatment taken for Gestational Diabetes Mellitus				
Oral Hypoglycaemic Agents	-	-	-	t=1.808 p=0.081 N.S
Insulin therapy	13	9.54	1.13	
Alternative and Complementary therapies	-	-	-	

Obstetrical Variables	F	Mean	S.D	One Way ANOVA / Student independent "t" test & p-value
No treatment taken	-	-	-	
Not Applicable	37	8.81	1.54	
Duration of treatment taken for Gestational Diabetes Mellitus				
<1 Year	-	-	-	F=1.617 p=0.209 N.S
1-2 Years	5	10.00	0.00	
>2 Years	-	-	-	
Still on Medication	8	9.25	1.39	
Not applicable	37	8.81	1.54	
If any complications arise due to a history of Gestational Diabetes Mellitus				t=1.808 p=0.081 N.S
No	37	8.81	1.54	
Yes	13	9.54	1.13	
History of Pregnancy Induced Hypertension in Previous Pregnancy				F=2.906 p=0.065 N.S
No	12	9.50	1.17	
Yes	5	10.00	0.00	
	33	8.67	1.57	
If yes, treatment taken Pregnancy Induced Hypertension				F=1.615 p=0.210 N.S
Anti Hypertensives	5	10.00	0.00	
Alternative and Complementary therapies	-	-	-	
No treatment taken	1	10.00	1.52	
Not applicable	44	8.86	1.47	
Duration of treatment taken Pregnancy Induced Hypertension				**t=4.963 p=0.0001 S***
<1 Year	-	-	-	
1-2 Years	-	-	-	
>2 Years	-	-	-	
Still on Medication	6	10.00	0.00	
Not applicable	44	8.86	1.52	
If any complications arise due to a history of Pregnancy Induced Hypertension				**t=5.195 p=0.0001 S***
No	38	8.68	1.56	
Yes	5	10.00	0.00	

- *p<0.05, S – Significant

Among obstetrical variables, the following showed significant associations:

- **Gestational age (p = 0.002)**: Knowledge improved slightly in later gestational weeks, possibly due to increased healthcare interaction.
- **Gravida (p = 0.001)** and **Parity (p = 0.014)**: Multigravida and multiparous women had better knowledge, likely due to prior pregnancy experience.

Duration of treatment for PIH (p = 0.0001) and complications of PIH (p = 0.0001) also showed significant associations. Other variables such as antenatal

visits, mode of conception, history of GDM, and treatment modalities did not show significant association.

- These findings suggest that clinical exposure and reproductive experience enhance knowledge, whereas mere diagnosis does not guarantee understanding.

The study clearly demonstrates that:

- Knowledge regarding GDM among mothers is predominantly poor
- Educational status, income, and obstetric experience significantly influence knowledge
- Healthcare access alone is insufficient without structured education

Despite being under medical supervision, most mothers lacked adequate awareness about GDM, highlighting a major gap in patient education and counselling.

Implications

The findings emphasize the urgent need for:

- Structured educational programmes for GDM mothers
- Nurse-led counselling interventions during antenatal visits
- Culturally appropriate and literacy-sensitive teaching strategies
- Strengthening health education components in maternal care services

DISCUSSION

Gestational Diabetes Mellitus (GDM) is a significant concern due to its impact on both maternal and fetal health. The findings from this study provide valuable insights into the knowledge levels of GDM mothers regarding the condition. The study's objective to assess the knowledge of mothers about GDM highlights a key area of focus in maternal healthcare. GDM, though common, is often underdiagnosed or poorly understood by affected mothers, leading to potential complications such as preeclampsia, macrosomia, and neonatal hypoglycemia.

The results indicate a varied understanding of GDM among the mothers, with some demonstrating adequate knowledge while others showed a lack of awareness. This gap in knowledge underscores the need for targeted educational interventions. Mothers with inadequate knowledge are more likely to experience poor management of GDM, leading to higher risks during pregnancy and childbirth. This finding aligns with previous research suggesting that knowledge and understanding of GDM directly influence health outcomes.

The demographic factors considered in the study, such as age, education level, and prior experience with diabetes, were shown to be significant predictors of knowledge levels. Specifically, mothers with higher educational levels or previous experience with diabetes tended to have a better understanding of GDM. This highlights the importance of personalized education based on a mother's background and health history, ensuring that information is accessible and relevant.

Furthermore, the study demonstrates the need for continuous education and awareness programs for pregnant women, especially those at risk of GDM. Health professionals, particularly nurses and obstetricians, play a critical role in providing clear, consistent, and accurate information about GDM to their patients. Such efforts can empower mothers, improve their self-management practices, and contribute to better pregnancy outcomes.

However, several limitations should be noted. The study was conducted in a single hospital in Chennai, which may limit the generalizability of the results. Additionally, the study relied on self-reported data, which may be influenced by respondents' biases or misunderstanding of the questions. Future studies should consider a more diverse sample and utilize more objective measures to assess knowledge.

CONCLUSION

In conclusion, the study emphasizes the crucial role of knowledge in managing Gestational Diabetes Mellitus effectively. The findings suggest that there is a considerable gap in the knowledge of GDM among mothers, highlighting the need for comprehensive educational strategies tailored to individual needs. By improving knowledge on GDM, healthcare providers can enhance maternal and fetal outcomes, reduce the incidence of complications, and foster better self-care practices among affected mothers.

Moving forward, it is essential for healthcare institutions to implement regular educational workshops and counseling sessions for pregnant women. Additionally, the inclusion of GDM-related content in prenatal care programs could help mitigate the risks associated with this condition. Increasing awareness about GDM and its implications can empower mothers to take proactive steps in managing their health, ultimately leading to healthier pregnancies and births.

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