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Knowledge and Practices Regarding Gestational Diabetes Mellitus among Antenatal Mothers

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Abstract: ***Gestational Diabetes Mellitus and Glucose intolerance result when pancreatic beta cell function is not able to compensate the degree of insulin resistance in pregnancy. Pregnancy induces progressive changes in maternal carbohydrate metabolism. As pregnancy advances insulin resistance and diabetogenic stress due to placental hormones necessitate compensatory increase in insulin secretion. When this compensation is inadequate gestational diabetes develops. The present study was to assess the knowledge and practices regarding Gestational Diabetes Mellitus disease among antenatal mothers attending MCH centre, Tirupati, Chittoor (dist), A. P. Non experimental descriptive research approach was adopted. A total of 100 subjects were selected by purposive sampling technique. A structured questionnaire and check list were developed and standardized to collect the data. The results revealed that 77 per cent of antenatal mothers had inadequate knowledge, 16 per cent of antenatal mothers had moderate adequate knowledge and 7 per cent of antenatal mothers had adequate knowledge. Regarding practices 14 per cent of antenatal mothers had inadequate practices, 74 per cent of antenatal mothers had moderate adequate practices and 7 per cent of antenatal mothers had adequate practices. Significant association was found between level of knowledge and area of living, Religion of the mother, Education of the mother and Education of the father found significantly associated with practices.***

Keywords: Gestational Diabetes Mellitus, Knowledge, Practices

1. Introduction

Child birth and pregnancy are extra special events in women's life and also in the lives of their families. Pregnancy is not a disease, it is a normal physiological phenomenon, and it is associated with certain health risk to the health and survival both for the mother and the child she bears. For more than a century, it has been well known that diabetes antedating pregnancy can have fatal adverse effects on neonatal and foetal outcome.

In the year 1950 the word "Gestational Diabetes" was applied to what was thought to be a transient condition that affected foetal outcomes adversely, and then abated after delivery. In the 1980s those cut - off points were adapted to modern methods for measuring glucose and applied to the modern definition of Gestational Diabetes — glucose intolerance with onset or first recognition during pregnancy.

Gestational Diabetes Mellitus is a condition in which a woman without diabetes develops high blood sugar levels during pregnancy. Gestational Diabetes Mellitus generally results in few symptoms. However, it does increase the risk of Pre eclampsia, Depression and requiring C - section. Gestational Diabetes Mellitus are at risk of being too large having low blood sugar after birth and jaundice. If left untreated, it can also result in still birth long term children's are at higher risk of being overweight and developing type 2 Diabetes.

Antenatal mother refers to expectant mother from the time of conception is confirmed until the beginning of labour. Antenatal means relating to the medical care given to women who are going to have a baby or expecting a baby. Antenatal care is also known as prenatal care is a type of preventive health care. Its goal is to provide regular checkups that all doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy and to promote healthy lifestyles that benefit both mother and child.

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject. Knowledge is also the information gained through education. In this study, it refers to the level of understanding and verbal responses of the antenatal mother regarding Gestational Diabetes Mellitus which is measured by interview schedule.

Practice means doing something regularly in order to be able to do it better. A practice is one of these periods of doing something. It means the way of doing something. In this study it refers to the practices in terms of verbal responses of the antenatal mother regarding Gestational Diabetes Mellitus which is measured by structured interview schedule.

The prevalence of Gestational Diabetes Mellitus (GDM) is on the rise globally. This global increase is occurring mostly in developing countries like India where access to maternal care is often limited. Recently, prevalence of GDM was found to be 18% in HAPO study (Hyperglycemia and Adverse Pregnancy Outcome).

Knowledge about Gestational Diabetes Mellitus among women will translate into adoption of healthy life style, better health seeking behaviour, better self - care and thus prevention and early diagnosis of the disease. The presence of fasting hyperglycemia (>105 mg/dl or >5.8 mmol/l) may be associated with an increase in the risk of intrauterine fetal

death during the last 4–8 weeks of gestation. Gestational Diabetes Mellitus of any severity increases the risk of fetal macrosomia. Neonatal hypoglycemia, jaundice, polycythemia, and hypocalcemia may complicate GDM as well.

Thus, this study was conducted to assess the knowledge and practices about Gestational Diabetes Mellitus among antenatal mother who attend Maternity Child Health centre, Tirupati, Chittoor (Dist), Andhra Pradesh, India.

2. Objectives

1) To assess the knowledge regarding Gestational Diabetes Mellitus among antenatal mothers.
2) To assess the practices regarding Gestational Diabetes Mellitus among antenatal mothers.
3) To determine the association between the knowledge and practices regarding Gestational Diabetes Mellitus among antenatal mothers with their selected variables (age, parity, education of mother and father, religion, occupation of mother and father, family income, source of information, diet, area of living and type of family).

3. Method

Based on review of research, non research literature, opinion and suggestion from experts the following research tool was developed. The tool for the study consisted of 3 sections. Section - I Self Structured questionnaire for general information (selected variables) consisting of 12 items. Section - II Self Structured questionnaire for knowledge regarding Gestational Diabetes Mellitus and Section III Self Structured Check List for practices related to Gestational Diabetes Mellitus. Content validity of tool was done by experts in the field. Reliability was done by using karl Pearson Correlation Coefficient, split half method.

Section II: (self structured questionnaire for knowledge related Gestational Diabetes Mellitus) reliability score was 0.887.
Section III: (self structured check list for practices related to Gestational Diabetes Mellitus) reliability score was 0.85.

A formal written permission was obtained from Municipal Health officer of MCH center of Tirupati. A total of 100 subjects were selected by purposive sampling technique. The data was collected from mothers. Data was obtained on the knowledge and practices regarding Gestational Diabetes Mellitus among antenatal mothers attending MCH centre, Tirupati through structured questionnaire and check list. The demographic variables were coded and analyzed. Item analysis and interpretation was done with the help of descriptive and inferential statistics to meet the objectives of the study.

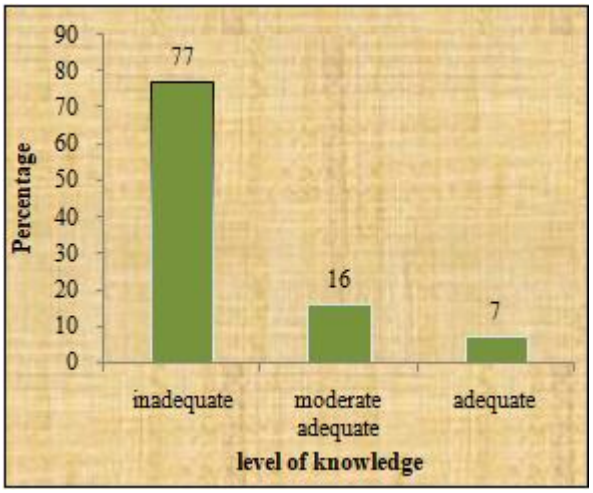
4. Major Findings

General information of the sample. Maximum antenatal mothers 49 per cent belongs to the age group of 21 – 25 years and majority of them 45 per cent were primipara. As far religion concern 69 per cent were Hindus. Majority 54 per cent had primary education and 47 per cent were falling under the income group below Rs 3000.

Table 1: Level of Knowledge among Antenatal Mothers Regarding Gestational Diabetes Mellitus.

S no	Level of knowledge	In adequate		Moderate		Adequate	
		No	%	No	%	No	%
1	General information on Gestational Diabetes Mellitus	51	51	42	42	7	7
2	Causes of Gestational Diabetes Mellitus	56	56	39	39	5	5
3	Symptoms of Gestational Diabetes Mellitus	79	79	0	0	21	21
4	Signs of Gestational Diabetes Mellitus	55	55	0	0	45	45
5	Diagnosis of Gestational Diabetes Mellitus	88	88	0	0	12	12
6	Treatment of Gestational Diabetes Mellitus	34	34	0	0	66	66
7	Complications of Gestational Diabetes Mellitus	74	74	26	26	0	0
8	Prevention of Gestational Diabetes Mellitus	67	67	26	26	7	7
9	Total knowledge on Gestational Diabetes Mellitus	77	77	16	16	7	7

Table - 1 shows majority of antenatal mothers had inadequate knowledge in Diagnosis of Gestational Diabetes Mellitus that is Eighty Eight percent. Moderate level of Knowledge in General Information on Gestational Diabetes Mellitus that is forty two per cent and sixty six per cent of antenatal mothers had sufficient knowledge in treatment of GDM. Oral Glucose Tolerance Test is diagnostic blood test for Gestational Diabetes Mellitus which is new method for antenatal mothers due to their educational status that may be the reason for inadequate knowledge in diagnosis of the disease. These findings were supported by Rosemary (2018) majority had heard about diabetes Mellitus but only 38.2% knew that diabetes can occur for the first time in pregnancy. Only 28.8%, 35.8% and 30.4% respondents had good knowledge scores for GDM definition and risk factors, GDM screening diagnosis and treatment and GDM complications respectively. Only 26.2% had good overall knowledge of GDM.



Percentage distribution of level of knowledge among antenatal mothers

Table 2: Level of Practices among Antenatal Mothers Regarding Gestational Diabetes Mellitus

S. No	Level of practices	In adequate		Moderate		Adequate	
		No	%	No	%	No	%
1	General awareness related to Gestational Diabetes Mellitus	22	22	72	72	6	6
2	Dietary Practices related to Gestational Diabetes Mellitus	42	42	45	45	13	13
3	Physical activity Practices related to Gestational Diabetes Mellitus	47	47	32	32	21	21
4	Total Practices regarding Gestational Diabetes Mellitus	14	14	74	74	12	12

Table 2 shows forty seven per cent antenatal mothers had inadequate practices related to physical activity. Majority of antenatal mothers that is seventy two per cent had moderate General Practices related to Gestational Diabetes Mellitus. Pregnancy is the period where mothers usually decreases physical activity fear of losing the fetus due to inadequate knowledge related to the importance of diet and physical activity which in terms leads to maternal morbidity like Gestational Diabetes Mellitus and Gestational Hypertension. That may be the reason Antenatal mothers with poor practice of physical activity.

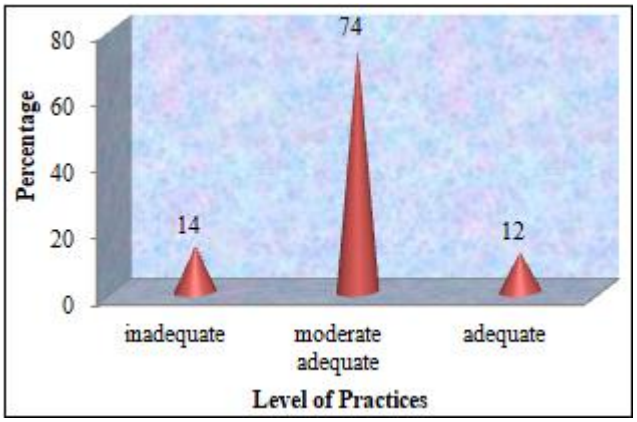


Table 3: Mean and S. D. Values of Level of Knowledge on Gestational Diabetes Mellitus among Antenatal Mothers

S no	Level of knowledge	Mean	S. D.
1	General information on Gestational Diabetes Mellitus	2.36	0.894
2	Causes of Gestational Diabetes Mellitus	1.38	0.749
3	Symptoms of Gestational Diabetes Mellitus	0.96	0.680
4	Signs of Gestational Diabetes Mellitus	0.45	0.500
5	Diagnosis of Gestational Diabetes Mellitus	0.82	0.626
6	Treatment of Gestational Diabetes Mellitus	0.66	0.476
7	Complications of Gestational Diabetes Mellitus	0.98	0.738
8	Prevention of Gestational Diabetes Mellitus	5.04	1.922

Table 3 shows the mean and S. D. values of level of knowledge regarding prevention Gestational Diabetes Mellitus was high. Knowledge related to signs and treatment about Gestational Diabetes was low. They are also indicating average level of knowledge in general information, symptoms and diagnosis regarding Gestational Diabetes. Alharthi (2018) revealed that antenatal mothers were mostly aware of the Gestational Diabetes Mellitus risk factors while they were least aware of the Gestational Diabetes Mellitus diagnosis and treatment. Gestational Diabetes Mellitus symptoms and treatment are similar to that of Diabetes that may be the reason antenatal mother had average knowledge.

Table 4: Mean and S. D. values of Practices on Gestational Diabetes Mellitus among Antenatal Mothers

S. No	Practices	Mean	S. D
1	General awareness related to Gestational Diabetes Mellitus	7.40	1.421
2	Dietary Practices related to Gestational Diabetes Mellitus	2.55	0.914
3	Physical activity Practices related to Gestational Diabetes Mellitus	2.62	0.972
4	Total Practices regarding Gestational Diabetes Mellitus	12.58	2.147

Table 4 shows high level of General Practices regarding Gestational Diabetes Mellitus among antenatal mothers and they show moderate level of practices related to dietary and physical activity. Selected sample of antenatal women were majority had only secondary educational status so may be unaware of the type of diet and physical activity required in pregnancy period that may be the reason to show modrate level of practices related to dietary and physical activity. Jovana (2018) revealed that diets resembling MedDiet/DASH diet as well as higher Physical activity levels before or in early pregnancy were associated with lower risks or odds of Gestational Diabetes Mellitus.

Table 5: Association between selected variables with Level of Knowledge Gestational Diabetes Mellitus among Antenatal Mothers

S. no.	Selected variables	In adequate		Moderate adequate		Adequate		Chi square
		No	%	No	%	No	%	Value
1	Age of the mother (in years)							
	a) Below 20	16	16	3	3	1	1	2.001
	b) 21 – 25	37	37	7	7	5	5	
	c) 26 – 30	19	19	5	5	1	1	
	d) Above 30	5	5	1	1	0	0	
2	Parity of the mother							
	a) Primipara	35	35	7	7	3	3	2.678
	b) Multipara	30	30	8	8	4	4	
	c) Grand multipara	12	12	1	1	0	0	

3	Religion							
	a) Hindu	52	52	13	13	4	4	4.258
	b) Muslim	17	17	3	3	3	3	
	c) Christian	6	6	0	0	0	0	
	d) Others	2	2	0	0	0	0	
4	Education of the mother							
	a) No formal education	15	15	1	1	0	0	5.595
	b) Primary education	41	41	8	8	5	5	
	c) Secondary education	13	13	4	4	2	2	
	d) Collegiate education	8	8	3	3	0	0	
5	Education of the father							
	a) No formal education	15	15	2	2	2	2	4.576
	b) Primary education	37	37	5	5	2	2	
	c) Secondary education	12	12	5	5	2	2	
	d) Collegiate education	13	13	4	4	1	1	
6	Occupation of the mother							
	a) Home maker	45	45	13	13	6	6	5.433
	b) Employee	9	9	1	1	0	0	
	c) Laborer	16	16	2	2	1	1	
	d) Other	7	7	0	0	0	0	
7	Occupation of the father							
	a) Business	10	10	2	2	1	1	0.210
	b) Employee	10	10	2	2	1	1	
	c) Laborer	23	23	4	4	2	2	
	d) Other	23	23	5	5	2	2	
8	Family income							
	a) Below 3000	10	10	3	3	13	13	9.048
	b) 3001 – 6000	36	36	9	9	2	2	
	c) 6001 – 9000	20	20	3	3	5	5	
	d) Above 9000	11	11	1	1	0	0	
9	Type of family							
	a) Nuclear	42	42	9	9	3	3	2.648
	b) Joint	29	29	7	7	4	4	
	c) Extended	6	6	0	0	0	0	
10	Area of living							
	a) Rural	19	19	0	0	0	0	10.495*
	b) Urban	51	51	16	16	7	7	
	c) Urban slum	7	7	0	0	0	0	
11	Diet							
	a) Vegetarian	3	3	1	1	1	1	1.521
	b) Non vegetarian	74	74	15	15	6	6	
12	Source of information							
	a) Mass media	16	16	4	4	1	1	8.147
	b) Family	24	24	2	2	0	0	
	c) Friends	10	10	3	3	1	1	
	d) Health personnel	3	3	2	2	1	1	
	e) None	24	24	5	5	4	4	

*Significance at 0.05 level

Table 5 represents that there is significance association between the area of living antenatal mothers with knowledge at 0.05 level. Antenatal mothers who lived in urban area due to media or other source of information lead to more awareness related to Gestational Diabetes Mellitus. D. Lakshmi (2018) revealed that there is significant association between knowledge of Gestational Diabetes Mellitus with Education and area of living of antenatal mothers.

Table 6: Association between selected Variables with Level of Practices Gestational Diabetes Mellitus among Antenatal Mothers

S. no.	Selected variables	In adequate		Moderate adequate		Adequate		Chi square
		No	%	No	%	No	%	Value
1	Age of the mother (in years)							
	a) Below 20	3	3	12	12	5	5	6.988
	b) 21 – 25	5	5	39	39	5	5	
	c) 26 – 30	4	4	19	19	2	2	
	d) Above 30	4	4	19	19	2	2	
2	Parity of the mother							
	a) Primipara	6	6	32	32	7	7	5.470
	b) Multipara	4	4	33	33	5	5	

	c) Grand multipara	4	4	9	9	0	0	
3	Religion							
	a) Hindu	8	8	55	55	6	6	30.852**
	b) Muslim	2	2	17	17	4	4	
	c) Christian	4	4	2	2	0	0	
	d) Others	0	0	0	0	2	2	
4	Education of the mother							
	a) No formal education	6	6	10	10	16	16	12.977*
	b) Primary education	7	7	40	40	7	7	
	c) Secondary education	1	1	14	14	4	4	
	d) Collegiate education	0	0	10	10	1	1	
5	Education of the father							
	a) No formal education	8	8	3	3	9	9	18.723*
	b) Primary education	4	4	35	35	5	5	
	c) Secondary education	2	2	16	16	1	1	
	d) Collegiate education	0	0	15	15	3	3	
6	Occupation of the mother							
	a) Home maker	8	8	51	51	5	5	9.870
	b) Employee	0	0	7	7	3	3	
	c) Laborer	4	4	13	13	2	2	
	d) Other	2	2	3	3	7	7	
7	Occupation of the father							
	a) Business	2	2	10	10	1	1	2.077
	b) Employee	3	3	21	21	5	5	
	c) Laborer	5	5	21	21	4	4	
	d) Other	4	4	22	22	2	2	
8	Family income							
	a) Below 3000	4	4	6	6	3	3	8.948
	b) 3001 – 6000	7	7	36	36	4	4	
	c) 6001 – 9000	1	1	24	24	3	3	
	d) Above 9000	2	2	8	8	2	2	
9	Type of family							
	a) Nuclear	7	7	39	39	8	8	7.947
	b) Joint	4	4	32	32	4	4	
	c) Extended	3	3	3	3	0	0	
10	Area of living							
	a) Rural	0	0	17	17	2	2	8.819
	b) Urban	11	11	53	53	10	10	
	c) Urban slum	3	3	4	4	0	0	
11	Diet							
	a) Vegetarian	0	0	5	5	0	0	1.849
	b) Non vegetarian	14	14	69	69	12	12	
12	Source of information							
	a) Mass media	4	4	15	15	2	2	11.156
	b) Family	2	2	21	21	3	3	
	c) Friends	0	0	13	13	1	1	
	d) Health personnel	0	0	6	6	0	0	
	e) None	8	8	19	19	6	6	

*Significance at 0.05 level
**Significance at 0.01 level

Table 6 represents that there is significance association between the religion of the antenatal mothers at 0.01 level and education of the mother and Education of the father with practices at 0.05 level. Education will always make a change educated antenatal mothers will have more knowledge compare to illiterate mothers. The above finding is similar to Sinkala Yizukanji's (2018) study that there is an association of level of education with practices.

5. Conclusion

The maximum of antenatal mothers had inadequate knowledge and practices on Gestational Diabetes Mellitus. So the investigator prepared the information booklet on Gestational Diabetes Mellitus consist of meaning of Gestational Diabetes Mellitus, causes like consanguinity, maternal age more than 35yrs etc, signs and symptoms like excess thirst, polyhydrominas, polyuria etc how to confirm the condition, how to manage and what are the preventive measure antenatal mothers can take to protect themselves from the disesase and provided to mothers to enhance the awareness. Hence, antenatal mothers need to be made to understand the importance of knowledge and Practices of Gestational Diabetes Mellitus.

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