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A Study to Assess the knowledge regarding Gestational Diabetes Mellitus among antenatal mothers in Villiyanur Primary Health Center at Puducherry

T. Barani[1], Dr. R. Danasu[2], Dr. Selvambigai[3], Dr. Manjubala Dash[4]
[2]*Research Scholar, Meenakshi Academy of Higher Education and Research, Principal, RAAK Nursing and Paramedical College, Puducherry.*
[2]*Principal, Sri Manakula Vinayagar Nursing College, Puducherry.*
[3]*HoD, Mother Theresa Post Graduate & Research Institute of Health Sciences, Puducherry*
[4]*HoD, Mother Theresa Post Graduate & Research Institute of Health Sciences, Puducherry*

Abstract
Background; *Gestational diabetes mellitus(GDS) is a perfect window of opportunity for the prevention of DM in two generations and its incidence is increasing in our country. Awareness of the condition among antenatal women will translate into prevention and early diagnosis of the antenatal women who attend a Primary Health Center (PHC) for antenatal care.*
Objectives; *To assess the knowledge regarding gestational diabetes mellitus antenatal mothers its management among antenatal mothers. To associate the knowledge regarding GDM and its management with selected demographic variables of antenatal mothers.*
Materials and methods; *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.* ***Results;*** *In this study the knowledge and management of gestational diabetes mellitus about 6% antenatal mothers had adequate knowledge , 44% antenatal mothers had moderately adequate knowledge and 50% of antenatal mothers had inadequate knowledge. Conclusion; Only small proportion of rural antenatal women had good 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 GDM among antenatal women.*
Keywords; *Antenatal women, awareness, gestational diabetes mellitus, knowledge*

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I. Introduction:

In all societies the family is the central nucleus for that the people for their lives. Their dreams and their health. A women in her role as a mother from the backbone of the family. All though every women has the fundamental right to survive while performing the physiological duty of pregnancy and child with however in most of the developing countries. A woman is a master piece of god as is gives her great place in the world to become a mother, pregnancy is a unique exciting and often joyous time in a women's life, as it highlight the women's.

Diabetes mellitus commonly referred to as a group of metabolic diseases in which there is high blood sugar level over a prolonged. Symptoms of high blood sugar include frequent urination, increased thirst, and increased urination. If left untreated diabetes can cause many complications. Gestational diabetes is condition in which women without previously diagnosed diabetes exhibit high blood glucose level during pregnancy (especially during their 3 rd trimester)

GDM is caused when insulin receptor do not function properly. This is likely due to pregnancy related factoring such as the presence of human placental lactogen that interfers with susceptible insulin receptor. With an estimated 50.8 million people living with diabetes, India has the largest diabetes population in the world and has the dubious distinction of being the diabetes capital of the world Gestational diabetes mellitus (GDM) is one of the subtypes of diabetes, the prevalence of which is constantly increasing. GDM is defined as glucose intolerance that is first detected during pregnancy. GDM is associated with an increased risk of pre-eclampsia for mothers in the antepartum period and a higher risk for macrosomia, hypoglycemia, jaundice, respiratory distress syndrome, polycythemia and hypocalcaemia in infants. After delivery, though the glucose levels return to normally, the mother is at a higher risk for Type 2 DM, and the child of a woman with GDM is at a higher risk for metabolic syndrome.

Most of the available literature pertains to the awareness of diabetes among women in the general population or awareness of GDM among antenatal women diagnosed to have GDM and there has not been any study due on the awareness of GDM among all antenatal women in general, with or without GDM. Once the antenatal women are diagnosed to have GDM, they are put into the high-risk category and referred to a higher level of health-care facilities for follow-up care. Knowledge about GDM among antenatal women will translate into adoption of a healthy lifestyle, better healthcare seeking pattern, better self-care, and thus prevention and early diagnosis of the disease. Hence, this study was done to determine the awareness of GDM among all the antenatal women who attend a Primary Health Center (PHC) for antenatal care.

A study done in India 1982 the prevalence of GDM was found to be 2 percent followed by 7.02 percent in 1991 in another study. GDM was reported to be 6.7 percent in rural women of Jammu district. In a random survey performed is various cities in India in 2002 to 2003. The prevalence of GDM was 16.2 percent in Chennai, 15 percent in Thiruvananthapuram, 21 percent in Alwaye, 12 percent in Bangalore, 18.8 percent in Erode and 17.5 percent in Ludhiana. An overall GDM prevalence of 16.55 percent was observed. In another study done in Tamil Nadu (2005 to 2007) a total 4151,3960 and 3945 pregnant women were screened urban, semi urban and rural areas, respectively and GDM was detected in 17.8,13.8 and 9.9 percent women. In a study done at a tertiary care in Maharashtra the prevalence of GDM was found to have single abnormal values on OGTT. Use different criteria for diagnosis of GDM may be responsible for different prevalence rates of GDM. The Primary purpose of this study is to develop a valid and reliable questionnaire to assess knowledge of GDM, NIDDM, and lifestyle factors that increase or decrease the risk of developing, diabetes in women with GDM, Secondly, the study sought to describe the knowledge of women with GDM regarding GDM, NIDDM and lifestyle factors that increase and decrease the diabetes mellitus.

II. Materials And Methods:

In this study quantitative descriptive research approach was adopted. Total of 50 antenatal mothers attended the antenatal clinic in Primary Health Centre, Villinaur were participated. The data collection instrument was developed in Tamil and English after consulting expert in the concerned topic and after reviewing the numerous literature. Structured questionnaires regarding knowledge on gestational diabetes mellitus and its management. Ethical concern was obtained. After getting concern from the samples the data were collected from the samples. It includes demographic data consist of age, education, socioeconomic status, religion, residential area, marriage age at marriage, type of marriage, parity type of family, gestational age, pregnancy information. Knowledge questionnaire on gestational diabetes mellitus and its management during pregnancy. The structured questionnaire consists of 20 knowledge regarding gestational diabetes mellitus its management during pregnancy among antenatal mother. Each right answer is scored with one mark and each wrong answer is scored with zero mark. Total score is 20.

III. Results

A total of 50 antenatal mothers participated in this study.

Table 1: Distribution of the baseline characteristics of the subjects

N = 50

S.No	Demographic variable	No.	Percentage
1.	Age in years		
	a. 18 to 23 yrs	21	42%
	b. 24 to 29 yrs	22	44%
	c. 29 to 35 yrs	5	10%
	d. Above 35 yrs	2	04%
2.	Educational Status		
	a. Illitrate	6	12%
	b. Primary education	9	18%
	c. Secondary education	21	42%
	d. Higher studies	14	28%
3.	Socio economic status		
	a. Rs.6000/month	24	48%
	b. Rs.8000/month	12	24%
	c. Rs.10,000/month	8	16%
	d. Above Rs.10,000/month	6	12%
4.	Religion		
	a. Hindu	41	82%
	b. Muslim	4	08%
	c. Christian	5	10%
	d. Others	0	00%
5.	Residential area		

	a. Rural	14	28%
	b. Urban	26	52%
	c. Christian	5	10%
	d. Others	0	00%
6.	Age at marriage		
	a. Below 18 yrs	9	18%
	b. 21 to 25 yrs	28	56%
	c. 26 to 30 yrs	4	08%
	d. Above 30 yrs	9	18%
7.	Types of marriage		
	a. Consanguineous	9	18%
	b. Non consanguineous	41	82%
8.	Parity		
	a. Primigravida	34	68%
	b. Multigravida	14	28%
	c. Grand multipara	2	04%
9.	Type of the family		
	a. Nuclear	17	34%
	b. Joined	33	66%
	c. Extended	0	00%
10.	Gestational age		
	a. 1st trimester [below 12 weeks]	9	18%
	b. 2nd trimester [12 to 28 weeks]	23	46%
	c. 3rd trimester [above 28 weeks]	18	36%
11.	Source of previous information about minor disorder of pregnancy		
	a. Television	0	00%
	b. Newspaper	3	60%
	c. Relatives and friends	1	02%
	d. Health personal	46	92%

Table 1 depicts the distribution of antenatal mother baseline variables. The results indicate the out of 50 samples about 100% in the experimental respectively were between the age group of 18 to 23 yrs, 42% of experimental group between 24 to 29 yrs, 44 % of experimental group. 10% of experimental group between the age group of 29 to 35 yrs who were between above 35 yrs, 04% in experimental group. Regarding the educational status, in experimental group 12% were illiterate and 18 % of mothers had education till primary school, 42% of mothers had education till secondary education 28% of mothers had education till higher studies.

According to religion in experimental group about 82 of Hindu, 08 of Muslim, 10 of Christian antenatal mothers. Regarding the socio economic status in experimental group 48% antenatal mothers in Rs.6000 per month, 24% of antenatal mothers in 8000 per month, about 16% of mothers in 10,000 per month, 12% of antenatal mothers in above 10,000 per month.

The compiled data indicates that a majority of 52% was residing in the urban area and 28% of mother was residing in the rural area, 18% of mothers was residing in the semi urban area.

According to the study 18% of mothers marriage at the age below 18 years and 56% of mothers marriage at the age group between 21 to 25 years and 8% mothers marriage at the age between 26 to 30 years and 18% of mothers marriage at the age above 30 years.

Regarding the type of marriage about 80% of mothers were consanguineous marriage and 82% of mothers were non consanguineous marriage. According to experimental group the parity about 68% of mothers have primigravida and 28% multigravida and 4% of grand multipara.

In this study about 34% of mothers are unclear family and 66% of mothers are joined family.

With respect the gestational age 18% of mothers were below 12 weeks of gestation, 46% of mothers were 12 to 28 weeks of gestation and 36% of mothers were above 28 weeks of gestation in the experimental group.

Table 2 : Level of knowledge regarding gestational diabetes mellitus among antenatal mothers.

N= 50

Knowledge Level	Numbers	Percentage
Adequate	3	6%
Moderate	22	44%
Inadequate	25	50%

The above table shows the knowledge and management of gestational diabetes mellitus among antenatal mothers. About 6% antenatal mothers had adequate knowledge, 44% antenatal had moderate knowledge and 50% of antenatal mothers had inadequate knowledge.

Table 3 : Association between the levels of knowledge and management with demographic variables
N: 50

S.n	Demographic variables			Knowledge						Chi	Df	P(0.05)
		F	%	Adequate		Moderate		Inadequate				
				F	%	F	%	F	%			
1.	Age in years											
	a. 18 to 23 yrs.	21	42	10	30.4	13	39.4	10	30.3	4	0.7857	9.49 *
	b. 24 to 29 yrs.	22	44	5	26.3	6	31.6	8	42.1			
	c. 29 to 35 yrs.	5	10	2	25	3	37.5	42.1	37.5			
	d. Above 35 yrs.	2	4	0	0	0	0	0	0			
2.	Educational status											
	a. Illiterate	6	12	22	8	34	10	43.5	6	6	5.1174	12.59 *
	b. Primary Education	9	18	4	23.5	8	47.6	5	29.5			
	c. Secondary Education	21	42	8	44.5	6	33.3	4	22.2			
	d. Higher studies	14	28	0	0	1	50	1	50			
3.	Socio economic status											
	a. Rs. 6000/month	24	48	14	25.9	22	40.7	18	33.4	4	5.849	9.49 *
	b. Rs.8000/month	12	24	1	25	1	25	2	50			
	c. Rs. 10,000/month	6	12	0	0	0	0	0	0			
4.	Religion											
	a. Hindu	41	82	5	20.8	12	50	7	29.2	4	3.588	9.49 *
	b. Muslim	4	8	11	33.3	11	33.3	11	33.3			
	c. Christian	5	10	1	33	0	0	2	67			
	d. Others	0	0	0	0	0	0	0	0			
5.	Residential area											
	a. Rural	14	28	12	26.6	22	48.8	11	24.6	4	6.696	9.49 *
	b. Urban	26	52	15	33.4	2	13.3	8	53.3			
	c. Semi urban	9	18	0	0	0	0	0	0			
	d. Tribal area	1	2	0	0	0	0	0	0			
6.	Age at marriage											
	a. Below 18 yrs.	9	18	5	22.7	9	40.9	8	36.4	4	2.809	9.49 *
	b. 21 to 25 yrs.	28	56	10	33.4	11	36.6	9	30			
	c. 26 to 30 yrs.	4	8	13	25	3	37.5	3	37.5			
	d. Above 30 yrs.	9	18	0	0	0	0	0	0			
7.	Types of marriage											
	a. Consanguineous	9	18	2	18.2	4	36.4	5	45.4	2	1.45	5.99 *
	b. Non consanguineous	41	82	16	32.7	19	38.7	14	28.6			
8.	Parity											
	a. Primigravida	34	68	4	20	9	45	7	35	2	2.809	9.49 *
	b. Multigravida	14	28	8	30	10	39	8	31			
	c. Grand multipara	2	4	5	35.7	4	28.6	5	35.7			
9.	Type of the family											
	a. Nuclear	17	34	7	30.5	23	52.2	4	17.3	2	2.363	5.99 *
	b. Joined	33	66	10	27	16	43.2	11	29.8			
	c. Extended	0	0	0	0	0	0	0	0			
10.	Gestational age											
	a. 1st trimester [below 12 weeks]	9	18	4	20	9	45	7	35	4	1.993	9.49 *
	b. 2nd trimester [12 to 28 weeks]	23	46	8	30	10	39	8	31			
	c. 3rd trimester [above 28 weeks]	18	36	5	35.7	4	28.6	5	35.7			
11.	Source of previous information about minor disorder of pregnancy									4	3.543	9.49 *
	a. Television	0	0	0	0	0	0	0	0			
	b. Newspaper	3	6	11	22.9	19	39.6	18	37.5			
	c. Relatives and friends	1	2	4	44.4	4	44.4	1	11.2			
	d. Health personal	46	92	0	0	2	66.6	1	33.4			

* Not significant

There is no significant association between the knowledge and its management of gestational diabetes mellitus of antenatal mothers with selected demographic variables.

IV. Discussion:

This review of has identified that GDM occurs in 2% - 4.9% of pregnancies in the western world. Women with a history of GDM have a significantly increased risk of developing NIDDM in late life. NIDDM is associated with increased morbidity and mortality. Lifestyle factors, obesity, exercise, diet, and stress, were identified as affecting the risk of developing NIDDM.

Bhavadharani conducted a study on knowledge about risk factors that cause GDM was also poor amongst rural women with 48% them answering that they were unaware of any risk factor in contract, 55.9% of women from the urban area reported that family history of T2DM was an important risk factor. When questioned about the need to control blood sugar level during pregnancy, 58.5% of rural women did not know it proper control was essential, while 88.1% of urban women believed that good control was essential.

Though it is reassuring to see the role played by mass media in building wakefulness about the condition, it is of great apprehension that the health-care providers were cited as a source of information by only a fifth of the women. The doctors have to teach the health-care workers and both the doctors and the health-care workers have to play a important role in making awareness among antenatal women. The topic of GDM should be included as a part of the routine health-care education programs organized for antenatal women.

The state government of Tamil Nadu has taken up universal screening for GDM by means of a single blood glucose test 2 hours post 75 g of glucose in all the three trimesters. This initiative was hailed as the first of its kind in the world at the conference on diabetes and pregnancy in Istanbul, Turkey in 2007. Along with screening, more efforts are necessary at the program level to improve the awareness about risk factors, course, and effects of GDM on the women, as a higher level of awareness will surely improve pregnancy outcomes.

Assessment of the knowledge of pregnant women regarding GDM 374 reflect overall poor knowledge of the effects of GDM on mothers and neonates. Only a small number of participants had a good level of knowledge. In a study by George M, 73 participants (48.67%) had fair knowledge regarding GDM, 51 (34%) had good knowledge, and 26 (17.33%) had poor knowledge. A similar study by Shriram et.al. In Chennai reported that 17.5% of women had good knowledge, 56.7% had fair knowledge, and 25.8% had inadequate knowledge about GDM. A Study by Taif, Saudi Arabia, found that 54% of participants were aware of risk factors for GDM. 73.5 % of the participants in the United Arab Emirates were aware of the risks associated with GDM. This Study revealed that many factors have a significant effect on pregnant women's awareness of the effects of GDM on mothers and neonates, including educational level ($p=0.000$), Nationality ($p = 0.024$), number of pregnancies ($p = 0.003$), GDM ($p = 0.011$), and chronic HTN ($p = 0.013$). These findings were compared with other studies conducted in Belagavi, Karnataka, India, which showed that knowledge about GDM was associated with maternal age and educational status, religion, and occupation ($p < 0.050$). This present study highlights reduced knowledge about GDM among pregnant women in the selected area.

V. Conclusion:

The prevalence of GDM is growing higher a good knowledge and awareness about the same is mandatory. The knowledge of antenatal women on GDM was just average. Nurses working in the community play a major role in identifying common health problems in antenatal mothers. There is a need for conducting training programs to nursing and public regarding GDM. The nursing personnel can conduct regular gathering for antenatal mothers to impact knowledge, attitude, and practice about the common gestational mothers. Health responsiveness programs must be conducted to improve the knowledge of antenatal women for better utilization of health services. It helps the mother's pregnancy and safe delivery. A consistent screening of GDM among all pregnant women should be encouraged in all health centers.

Bibliography:

Book references:

[1]. International Corner Unicef & Disabled Children and Youths. Disability world 2003 June-August 19. Available from : http://www.disabilityworld.org/06-08_03/children/unicef.html

[2]. CDC, 1 in 6 kids have a development disability, Information from www.disabilityscoop.com/2011/05/23/cdc-1-in-6/13146/retrived on 6th November 2013

[3]. 'Development dealy',information from www.answers.com/topic/development-delay, retrived on 4th November 2013.

[4]. Sachdeva S, Amar A, Alam S, Khan Z, Kalique N, Ansari MA. Global Development delay and its determinants among urban infants and toddlers: a cross sectional study, Indian Journal of Pediatric 2010;77(9):975-80

[5]. Nair MK, et.al. Development delay and disability among under five children in a rural ICDS Block, Indian Journal of Pediatric 2009 Jan; 46(75).

[6]. Shams B, Golshiri P, Zamani AR, Paurabdian S, Mothers Participation in improving growth and Nutrition in children: A model for community participation, Iranian Journal of Public Health 2008; 37(2)

[7]. Sajehi F, Vameghi R, Bandpei M, Alizad V, Gorgani H, Shahshahani PS, Motor development delay in 7500 Iranian infants: Prevalence and risk factors. Iran Journal of Neurology 2009 dec: 43-50

[8]. Erterm IO, Atay G, Dogan DG, Bayhan A, Bingoler BE, Gok CG, et.al. Mothers Knowledge of Young Child Development in a developing country. Child care, Health and development. 2007;33(6): 728-737. Available from : URL: http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2214.2007.00751.x/full

[9]. Epstein, Ann S.Pregnant Teenagers Knowledge on Infant Development. Washington, DC: Distribute by ERIC Clearhouse, 1979 Available from : URL: http//trove.nla.gov.au/work/153034876?q&versionId=166771678

[10]. Catherine S, Lemonda T, Shannon J, Spellman M.Low Income adolescent mothers knowledge about domains of child development. Infant Mental Health Journal, 2002 Malik M, Pradhan SK, Prasuna JG, Screening for psychosocial development among infants in an urban slum in Delhi. Indian Journal of Pediatrics.2007.74(9); 841-845.

JOURNAL REFERENCE:

[11]. Turok DK, Ratcliffie SD, Baxley EG. Gestational diabetes mellitus. Journal of American academy of family physicians.2003;68:1767-72
[12]. Kim.C, Newton KM, KNOPPRH. Risk of type - 2 diabetes in women with prior GDM. Journal of diabetes. USA; 2007.30(5):117-21.
[13]. Orshan SA. Maternity, Newborn and Women's Health Nursing. Lippincott: London; 2008. 50-1.
[14]. Tieu J, Crowther CA, Middleton P.Dietary advice in preventing GDM. Cochrane database of systematic review. Australia; 2008. 16 (2) : 66-74
[15]. Ju h, Rumbold AR, Wilson KJ, Caroline A. To assess the maternal and infant health outocmes in women with borderline GDM compare with who had normal OGCT. Journal of Preganancy and child birth.2008.8 (31):118-24
[16]. Seshia V, et.al, Prevalence GDM in South India. Journal of the assoication of physicians of India. Tamil Nadu; 2008 May.56:329-33
[17]. Henderson MM, Williams MA, Holt VL, Weiss NS, Ferrara A. Weight gain and body mass index prior to pregnancy and risk of GDM. American Journal of Obstetrics and Gynecology.USA;2008 April.198 (4):409.

NET REFERENCE:

[18]. Available from : http://www.ncbi.nlm.nih.gov/pubmed/20734165
[19]. Available from : http://www.ncbi.nlm.gov/pubmed/19279377
[20]. URL:http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2214.2007.00751.x/full
[21]. URL:http://trove.nla.gov.au/work/153034876?q&versionId=166771678
[22]. http://www.disabilityworld.org

Mohamed Ahmed Aly Mohamed Hasaballah, et. al. "Lean Management: As an Approach to Reduce Cycle Time of Patient Discharge Process." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 10(1), 2021, pp. 52-57.