International Journal of Community Medicine and Public Health
Bhalge UU et al. Int J Community Med Public Health. 2019 Oct;6(10):4443-4446
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20194509

Original Research Article

Knowledge of gestational diabetes mellitus among antenatal women in rural area of Maharashtra

Udaykiran U. Bhalge, Mukund D. Bhise*, Anant A. Takalkar, Bhaskar S. Gaikwad

Department of Community Medicine, MIMSR Medical College, Latur, Maharashtra, India

Received: 31 July 2019
Accepted: 07 September 2019

***Correspondence:**
Dr. Mukund D. Bhise,
E-mail: mdb_1974@rediffmail.com

ABSTRACT

Background: Gestational diabetes mellitus (GDM) is a growing epidemiological problem. GDM is defined as glucose intolerance during pregnancy. Treatment of GDM is important to avoid maternal and fetal complication. The objective of this study is to assess the knowledge about gestational diabetes mellitus among antenatal mothers from rural area.
Methods: A descriptive cross-sectional study was done among 193 antenatal mothers in rural hospital, Murud. A study was done between July 2018 to August 2018. A pretested questionnaire was used to assess knowledge about GDM among all antenatal mothers.
Results: Among the participants, 48.19% were in the age group 21-25 years and 90.15% antenatal mothers were literate. 80% heard about diabetes mellitus and 38% mothers knows that diabetes can occur first time in pregnancy. Only 28.50% mothers heard about GDM from different source of information.
Conclusions: The study shows average knowledge about gestational diabetes mellitus among antenatal mother.

Keywords: Knowledge, GDM, Antenatal women, Rural

INTRODUCTION

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.[1] 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.[2] 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 hypocalcemia in infants. After delivery, though the glucose levels return to normalcy, 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.[3]

In the past decade, the prevalence of GDM has been increasing worldwide. In 2015 alone, it was estimated that 20.9 million women had hyperglycaemia in pregnancy, 85.1% of which were due to GDM. The complications arising due to GDM affect both the mother and the baby.[4]

In the Indian context, several cultural factors also play a very important role in health-seeking behaviour, especially amongst pregnant women. Several studies have evaluated knowledge and awareness amongst type 2 diabetes mellitus (T2DM) patients; however, the same amongst pregnant women about GDM is limited.[4]

The south Asian race is at a higher predisposition for both T2DM and GDM.[5,6] GDM was detected among 17.8% of the women in urban and 9.9% women in rural area.[7]

Educational strategies on GDM need to be encouraged and implemented, especially for young fertile women.[8] Early counselling of families has been recommended by the Fifth International Workshop-Conference on GDM to avoid excessive material and fetal weight gain, Educational programs have been recommended that emphasize reduced fat and energy intake, regular physical activity, and regular clinic visits.[9]

This study was aimed at evaluating the knowledge of GDM, including risk factors, importance of screening and post-partum follow-up, amongst pregnant women a in rural area of Maharashtra.

METHODS

This study was conducted in Murud area of PHC Nivali in Latur district of Maharashtra. The PHC caters to 49,000 populations. Antenatal clinic is running 9th of every month under Pradhan Mantri Surakshit Matrutva Abhiyan and we took this as an opportunity to interact with pregnant women about gestational diabetes mellitus. The study was conducted during the months of July 2018 to August 2018. All women attending the antenatal clinic were included irrespective of the number of conceptions or the period of gestation. The subjects were contacted only once. After obtaining informed consent, a pretested questionnaire was administered by the investigator for collection of data. The questionnaire was designed to collect information on background characteristics of age, education, occupation, and parity followed by 13 questions focusing on general awareness about DM and GDM, and risk factors, diagnosis, treatment, and consequences of GDM. The source of knowledge of antenatal women regarding GDM was also obtained. The same data was then entered in MS excel sheet and analysed by using SPSS 23.0 software. Results were expressed in terms of percentages.

RESULTS

Table 1 shows the socio-demographic character of 193 antenatal women. The age of women ranged from 18 to 35 years with mean age as 22.9 years. The most common age group was 21-25 years consisting of 93 (48.19%). Among 193 antenatal women, 174 (90.15%) antenatal mothers were literate. 137 (70.98%) had higher secondary education whereas 19 (9.84%) women were illiterate. Maximum number of women were house wife 172 (89.12%). 15 (7.77%) women working in agriculture field whereas 6 (3.11%) were in service.

Table 2 shows the knowledge of gestational diabetes among antenatal mothers. Among 193 antenatal mothers 154 (80%) heard about Diabetes mellitus. 73 (38%) women knows that diabetes can occur first time in pregnancy. 54 (28%) said that family history of diabetes, 64 (33%) pre-pregnancy obesity, 79 (41%) diabetes in previous pregnancy, 68 (35%) rapid weight gain in pregnancy is risk factor for gestational diabetes. Only 15 (8%) knows that blood test for gestational diabetes after glucose load. 68 (35%) knows that test for diabetes is necessary in pregnancy. 41 (21%) said that diet and exercises can treat gestational diabetes. 174 (90%) said that GDM does not disappear after pregnancy. 41 (21%) knows that baby at risk if GDM is not treated. Only 29 (15%) knows that mothers with GDM are at risk for overt diabetes.

Knowledge assessment was done with grading system after confirming the correct response by each woman. In 81 women (i.e., 42%), we observed average knowledge. 74 women (i.e., 38.3%) had poor knowledge and 19.7% had good knowledge (Table 3).

Among 193 ANC mothers only 55 (28.50%) mothers heard about GDM. 41 (21.24%) ANC mothers heard GDM from doctors or health professional.

Table 1: Socio-demographic character of participants.

Demography characteristics	Distribution (n=193)	
	N	%
Age (in years)		
<20	55	28.50
21-25	93	48.19
26-30	42	21.76
>30	03	1.55
Education		
Illiterate	19	9.84
Primary	11	5.70
Higher secondary	137	70.98
Graduate	25	12.95
Postgraduate	01	0.52
Occupation		
Farming	15	7.77
Service	06	3.11
Housewife	172	89.12

Table 2: Knowledge of GDM in ANC mothers.

Questions	Yes		No	
	N	%	N	%
Have you heard about diabetes mellitus?	154	80	39	20
Can diabetes occur for the first time in pregnancy?	73	38	120	62
Is family history of diabetes a risk factor for diabetes in pregnancy?	54	28	139	72
Is pre-pregnancy obesity a risk factor for diabetes in pregnancy?	64	33	129	67
Is diabetes in previous pregnancy a risk factor for diabetes in pregnancy?	79	41	114	59
Is rapid weight gain in pregnancy a risk factor for diabetes in pregnancy?	68	35	125	65
Have you heard about Blood test for diabetes after glucose load?	15	8	178	92
Is testing for diabetes in pregnancy is necessary?	68	35	125	65
Even diet and exercises can treat GDM	41	21	152	79
Does GDM disappear after pregnancy?	19	10	174	90
Is baby at risk if GDM is not treated?	41	21	152	79
Mothers with GDM are at risk for overt diabetes	29	15	164	85

Table 3: Knowledge assessment of GDM in ANC mothers.

		Frequency	Percentage (%)
Grading of knowledge	Good	38	19.7
	Average	81	42.0
	Poor	74	38.3

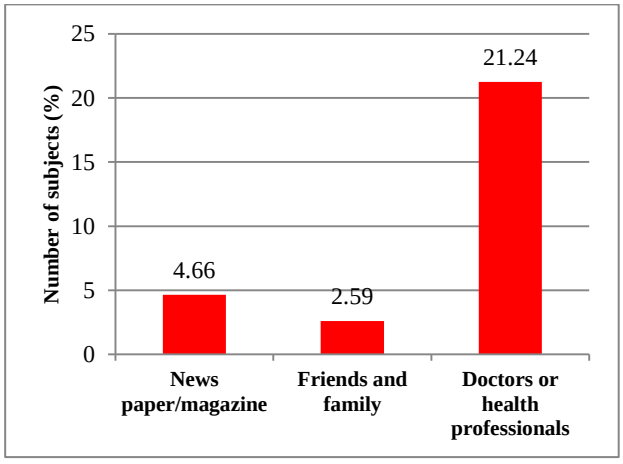

Figure 1: Distribution according to source of information.

DISCUSSION

In the present study among 193 ANC mothers the age of women ranged from 18-35 years with mean age as 22.9 years. 90.15% mothers were literate. Most of women were housewife (89.12%). Similar results found in the study conducted by Shriraam et al that mean age of the women was 23.8 years and the range was 18-33 yrs.[1] Most of them were housewives (90%) and 8.3% of the women illiterate.

In the study conducted by Dhyani et al the mean age of mothers was 27.53 years.[10] Maximum women had primary education that is 61%. Most of the women were working 54.8%.

Most of women had average knowledge about GDM. Only 38% women knew that diabetes occur first time in pregnancy. Only less than 40% women knows about the risk factors for GDM i.e., family history of diabetes, pre-pregnancy obesity and diabetes in previous pregnancy. Only 8% heard that blood test for diabetes in pregnancy after glucose load. Only 15% knows the treatment of GDM. 80% don't know that baby at risk if GDM is not treated. In the study conducted by Dhyani et al 46.8% women had knowledge about condition of gestational diabetes, its treatment, blood sugar level and dietary intake.[10] A similar study by Shriraam et al in Chennai showed that majority of population of women was known to the condition of GDM and DM.[1]

Awareness of GDM diagnosis time, diet, and exercise as a treatment option for GDM and of the probability of untreated GDM posing a risk to the unborn child was also high among the study women. The knowledge about the risk factors for GDM and the course of GDM and that the women diagnosed with GDM are at an increased risk for future type 2 diabetes was low. The study conducted by Bhavadharni et al knowledge about risk factors that cause GDM was also poor amongst rural women, with 48.8%

of them answering that they were unaware of any risk factor.[4] In contrast, 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 if proper control was essential, while 88.1% of urban women believed that good control was essential.

Amongst rural women, only 24.4% believed that GDM would lead to T2DM, 19.5% reported that GDM was only a temporary problem during pregnancy and the vast majority (56.1%) did not know anything about the progression to diabetes. 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. T2DM in adolescents was the most commonly reported long-term consequence by women in both urban (32.2%) and rural area (14.6%), followed by childhood obesity (urban 15.3%, rural 9.8%) and glucose intolerance in children (urban 6.8%, rural 2.4%).

In the present study major source of awareness of about GDM were doctors and health professional Whereas study conducted by Shriraam et al major source of awareness of GDM were television or radio, friends and family member.[1]

CONCLUSION

The present study shows average knowledge about gestational diabetes among ANC mother. So there is a need of education of ANC mother about GDM during their ANC visit. Doctor and paramedical health worker should create awareness about GDM among pregnant mothers.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Shriraam V, Rani SM, Sathiyasekaran B, Mahadevan S. Awareness of gestational diabetes mellitus among antenatal women in a primary health center in South India. Indian J Endocr Metab. 2013;17:146-8.
2. Metzger BE, Coustan DR. Summary and recommendations of the fourth international workshop-conference on gestational diabetes mellitus. The Organizing Committee. Diabetes Care. 1998;21:B161-7.
3. Kjos SL, Buchanan TA. Gestational diabetes mellitus. N Engl J Med. 1999;341:1749-56.
4. Bhavadharini B, Deepa M, Nallaperumal S, Anjana RM, Mohan V. Knowledge about gestational diabetes mellitus amongst pregnant women in South Tamil Nadu. J Diabetol. 2017;8:22-6.
5. Chowdhury TA, Grace C, Kopelman PG. Preventing diabetes in south Asians. BMJ. 2003;327 (7423):1059-60.
6. Makgoba M, Savvidou MD, Steer PJ. An analysis of the interrelationship between maternal age, body mass index and racial origin in the development of gestational diabetes mellitus. BJOG. 2012;119:276-82.
7. Seshiah V, Balaji V, Balaji MS, Paneerselvam A, Arthi T, Thamizharasi M, et al. Prevalence of gestational diabetes mellitus in South India (Tamil Nadu)- a community based study. J Assoc Physicians India. 2008;56:329-33.
8. Gabbe SG, Landon MB, Warren-Boulton E, Fradkin J. Promoting health after gestational diabetes: a National diabetes education program call to action. Obstet Gynecol. 2012;119:171-6.
9. American Diabetes Association. Gestational diabetes mellitus (Position Statement). Diabetes Care. 2002;27:S88-90.
10. Dhyani V, Mahantashetti NS, Ganachari MS, Kambar S, Ghatnatti V. Awareness of gestational diabetes mellitus among pregnant women attending a tertiary health center. Indian J Health Sci Biomed Res. 2018;11:51-5.

Cite this article as: Bhalge UU, Bhise MD, Takalkar AA, Gaikwad BS. Knowledge of gestational diabetes mellitus among antenatal women in rural area of Maharashtra Int J Community Med Public Health 2019;6:4443-6.