

FREQUENCY OF PREGNANT FEMALES WITH ADEQUATE KNOWLEDGE REGARDING GESTATIONAL DIABETES VISITING PUBLIC AND PRIVATE SECTOR HOSPITAL OF LAHORE.

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Abstract

Background & Objective: Gestational diabetes mellitus (GDM) is a perfect window of opportunity for the prevention of DM in two generations, and its incidence is increasing in the world. Awareness of the condition among antenatal women may translate into prevention and early diagnosis of the disease. This study aims to assess the frequency of female with good knowledge regarding GDM during pregnancy, as only few females are aware of it. There is no local evidence available in this regard which could help us in determining the level of awareness in females belonging to local population regarding GDM.

Methods: Overall, 230 females fulfilling the selection criteria were enrolled in the study from OPD of Departments of Obstetrics & Gynecology of both hospitals. Informed consent was obtained. Demographic information (name, age, gestational age, parity, education level and socioeconomic status) was also noted. Then females were interviewed with researcher herself regarding their knowledge about GDM during pregnancy and adequate knowledge was noted (as per operational definition). All this information was recorded through pre-designed proforma.

Results: In our study, out of 230 cases, mean age was calculated as 28.38±3.71 years; mean gestational age was 28.84±3.38 weeks, frequency of adequate knowledge regarding gestational diabetes in pregnant females was recorded in 15.65%(n=36).

Conclusion: We concluded that the frequency of pregnant females with adequate knowledge regarding gestational diabetes is not high and needs some emergent steps to improve it for prevention of associated morbidities.

Keywords: Pregnant females, gestational diabetes mellitus, adequate knowledge

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Gestational diabetes mellitus (GDM) is one of the types of diabetes, which is increasing on an alarming rate in the world. GDM is defined as glucose intolerance that is first detected during pregnancy.¹ About 1 and 20% of all pregnancies worldwide are complicated by DM, which includes GDM. Ethnic

factors also contribute in its varied prevalence. The South Asian race, due to genetic and social reasons, is more prone to develop both Type 1 and Type 2 Diabetes (DM).²

There are certain known risk factors for GDM including family history of DM, obesity and older maternal age. Impaired glucose tolerance in gestation is very much associated with certain infant related factors like infant prematurity, macrosomic infants, increased proportion of large for gestational age infants and admission of infants to the neonatal intensive care unit for 2 days or longer.³ There are few studies done on GDM related to our research. There are three important studies assessing women's knowledge about GDM, out of which two were of small-scale (n<20). In Aus-

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tralia, a qualitative study was conducted (n=17) on South Asian women recently being diagnosed with GDM assessing the knowledge, experience and understanding of GDM after diagnosis.³⁴

Pregnant ladies showed just baseline information about the GDM and were not comfortable in choosing diet, amount of physical activity and even in follow-up, influencing the healthcare workers in promoting self-care, treatment and control of the disease.

It has been reported that about 68% of pregnant females had good information about GDM.⁵ But according to another study, it was reported that about 17.5% women had good knowledge about GDM during pregnancy.⁶

The rationale of this study is to assess the frequency of female with good knowledge regarding GDM during pregnancy. Through literature it has been observed that more than 50% females are aware of GDM during pregnancy and its consequences. But it has also been reported that only few females are aware of it. But unfortunately, there is no local evidence available in this regard which could help us in determining the level of awareness in females belonging to local population regarding GDM. So we want to conduct this study to confirm the extent of knowledge among females regarding GDM belonging to local population. This will help us to improve our practice and will also help to update local guidelines to counsel the females regarding GDM during antenatal check in her early weeks and launch seminars and surveillance programs to prevent the females from development of GDM and prevent the hazardous outcomes of pregnancy associated with GDM in future.

OBJECTIVE

The objective is to determine the frequency of pregnant females with adequate knowledge regarding gestational diabetes.

METHODS

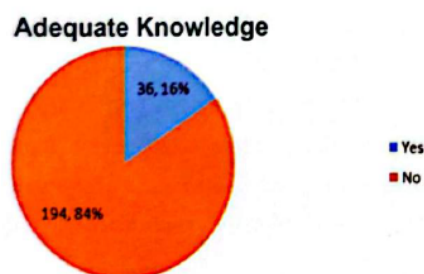
A cross sectional study was carried out at the department of Obstetrics & Gynecology, Gangaram Hospital and Hayat Memorial Hospital, Lahore from

March – August 2021. Sample size of 230 cases is calculated with 95% confidence level, 5% margin of error and taking expected percentage of good knowledge i.e. 17.5%⁷ in females presenting with GDM during pregnancy through a non-probability, consecutive sampling women of age 18-40 years, with singleton pregnancy at gestational age >24 weeks (assessed by LMP) presenting for antenatal check-up were included in study. Females with PIH (BP>140/90mmHg), pre-eclampsia (BP>140/90mmHg with proteinuria +1 on dipstick method), eclampsia (PEI with convulsions), renal disease (creatinine >1.2mg/dl), liver problem (ALT>40IU, AST>40IU), anemia (Hb<10 mg/dl) and females with gestational or chronic diabetes (BSR>186mg/dl) Females having depression (HADS >11 score) assessed by psychiatrist were excluded from the study. After an informed consent demographic information (name, age, gestational age, parity, education level and socioeconomic status) was also noted. Then females were interviewed with researcher herself regarding their knowledge about GDM during pregnancy and adequate knowledge was assessed on responses. Each correct response was given a score of 1 and each woman scored out of a total of 12. A score of below and equal to 6 were considered as inadequate knowledge, and above 6 as adequate knowledge of GDM. All this information was recorded through pre-designed proforma. Data was analyzed statistically by using SPSS version 21. Quantitative variables like age, gestational age, and BMI was presented as mean $\pm$ B.D. Qualitative variables like education, socioeconomic status, adequate knowledge was presented as frequency and percentage. The data was stratified for age, BMI, parity, education & socioeconomic status. Post-stratification, chi square test was applied to compare adequate knowledge in stratified groups with p value <0.05 as significant. Parity was presented in as frequency.

RESULTS

A total 230 cases who fulfilled the enrollment criteria were included to determine the frequency of pregnant females with adequate knowledge regarding

gestational diabetes. Age distribution shows that 63.91% (n=147) were between 18-30 years of age whereas 36.09% (n=83) were between 31-40 years of age, mean + sd was calculated as 28.38+3.71 years. Gestational age distribution shows that 62.61% (n=144) were between 24-30 weeks whereas 37.39% (n=86) had >30 weeks of gestation, mean+sd was calculated as 28.84+3.38 weeks. Mean BMI of the patients was calculated as 29.27+3.09. Educational status of the patients was recorded as 21.74% (n=50) for illiterate, 25.65% (n=59) had primary education, 23.91% (n=55) had middle and 28.70% (n=66) had matric & above. Parity distribution shows that 81.30% (n=187) were between 1-3 parity and 18.70% (n=43) had > 3 parity. (Table no:1) Frequency of adequate knowledge regarding gestational diabetes in pregnant females was recorded in 15.6 % (n=36) whereas 84.4% (n=194) had no adequate knowledge. (Graph no:1). The data were stratified for age, BMI, parity, education & socio-economic status. Post-stratification, chi square test was applied to compare adequate knowledge in stratified groups with p value <0.05 as significant. (Table -2)



Graph - 1: Adequate Knowledge of Respondents

DISCUSSION

Gestational diabetes mellitus (GDM) is an ideal time to act upon for the prevention of DM in both mother and fetus, as the number of newly diagnosed cases are continuously increasing in the world. If the pregnant female is aware of the condition, it may help preventing the occurrence as well as early diagnosis of the disease. The following study was to assess the frequency of female with good knowledge regarding GDM during pregnancy, as only few females are aware

Table 1: Demographic and clinical characteristics of respondents

Variables n=230	Frequency	Percentage
Age (years) Mean = 28.38 ± 3.71		
18-30	147	63.9
31-42	83	36.1
Gestational Age(weeks) Mean = 28.84 ± 3.38		
24-30	144	62.61
>30	86	37.39
Parity		
1-3	187	81.3
>3	43	18.7
BMI Mean = 29.27 ± 3.09		
Normal	90	39.3
Overweight / Obese	140	60.7
Educational status		
Illiterate	50	21.7
Primary	59	25.7
Middle	55	23.9
Matric & Above	66	28.7

of it. But unfortunately, there is no local evidence available in this regard which could help us in determining the level of awareness in females belonging to local population regarding GDM.

In our study, out of 230 cases, mean age was calculated as 28.38+3.71 years, mean gestational age was 28.84+3.38 weeks, frequency of adequate knowledge regarding gestational diabetes in pregnant females

Table 2: Adequate knowledge and Socio-demographic and Clinical variables cross tabulation

Variables		Adequate knowledge		P value
		Yes	No	
Age(in years)	18-30	26	121	0.25
	31-40	10	73	
Gestational age(weeks)	24-30	24	120	0.58
	> 30	12	74	
Parity	1-3	25	162	0.04
	> 3	11	32	
BMI	Up to 30	29	122	0.04
	> 30	7	72	
SES (Socio-Economic Status)	Low	10	26	0.000
	Middle	22	14	
	High	4	32	
Educational status	Illiterate	8	42	0.169
	Primary	12	47	
	Middle	11	44	
	Matric & Above	5	61	

was recorded in 15.65%(n=36).

We compared our results with an Indian study done in 2013 showing that about 68% of pregnant women were having sufficient information about GDM,⁵ it shows a higher rate of knowledge of GDM, while they revealed that overall only 17.5% women had proper information, 56.7% had optimal information, and 25.8% women had poor information regarding GDM. It was a limitation of their study to explain good knowledge, fair knowledge and poor knowledge whereas in our study we evaluated the population on the basis of a brief questionnaire containing 12 questions.

Contrary to the above, another study reported that about 17.5% women had sufficient realization about GDM during pregnancy, 6 which is in accordance with our study.

Another study⁷ reported that 35.2% of the study population had good information about GDM and 21.5% had good know how regarding its risk factors. Two factors, education and residence were found to be linked with knowledge and risk factors of GDM having statistical significance ($p < 0.05$).

Another study showed that 26.3% of study people showed good understanding of GDM.⁸

Kaptein et al.⁹ reported in the study that most of the women thought that once they are diagnosed with GDM, it is a point where they should think to mold there life style to healthier one, and they also thought that if it would not be the case then developing full blown DM in future would be the fate. GDM is on other hand considered by many as a temporary condition and after pregnancy the condition will subside. However, in actual, the number of cases of conversion of GDM to T2DM is on the rise. Few previous studies have pointed out that that women with GDM tend to develop T2DM within 9 years post-partum.

Low education is a very important factor leading to noncompliance to medications, probably due to the reason that such patients are unable to read the doctor prescription and instructions. It is also associated with poor comprehension on diabetes in the USA, which then leads to poor management as well as self-care.

Same observations have been seen in Malaysia, where those patients who have the minimum education had the least knowledge about GDM.

Self-care measures to prevent GDM can be improved if one has a good background knowledge about this condition. The source of patient knowledge is a key factor in getting help regarding advises, treatment as well follow up against the disease. The Samoan Ministry of Health, in response to this increasing trend of obesity with its complications, made a goal of their Health and Nutrition Policy 2013 in order to "Promote healthy eating and lifestyles." They started to look into patient's awareness about diet and there lifestyle so that they can help the patients in gauging the effectiveness of the Samoan Ministry of Health's campaign in promoting healthy eating and lifestyles, with an intent to identify more prone and vulnerable areas. Especially, information on lifestyle practices aid doctors to adjust treatment as well as the advises given to patients and determine whether knowledge imparted to the ladies resulted in any difference as compared to the other group.

The findings of this study are helpful for us to improve our practice and to update local guidelines to counsel the females regarding GDM during antenatal check in her early weeks and launch seminars and surveillance programs to prevent the females from development of GDM and prevent the hazardous outcomes of pregnancy associated with GDM in future.

CONCLUSION

Frequency of pregnant females with adequate knowledge regarding gestational diabetes is not adequate and needs some remedial steps to improve it for prevention of associated morbidities.

Conflict of interest

None

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**Be like a stem cell, differentiate yourself
from others**

Anonymous