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Diabetes Amongst Pregnant Women: A Challenging Aspect for Health-Care Professionals

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Abstract

Background: Diabetes of any kind can adversely affect the pregnancies. This not only affects mother's health but also fetal development and may leads to premature births.

Objective of Study: The current study was conducted to evaluate the awareness about GDM among married women.

Methodology: It was a cross - sectional study and carried out in civilized areas of one the most populated cities of Pakistan i.e., Karachi. The survey- based study was conducted among married females. The sample population was provided with a questionnaire to evaluate the awareness and prevalence regarding GDM i.e., Gestational Diabetes Mellitus.

Results: After collection of data, the responses were analyzed which suggest that 90% women were aware about GDM and the information was mainly provided by their health prescribers. Only 10% females suffered from GDM and 90% were found as non- diabetic pregnant ladies. 43% women knew that 2nd trimester is the predicted period of GDM, 28% and 8% women suggest 1st and 3rd trimester respectively.23% women think that there is no specific test and 17% women have no information regarding test for GDM.

Conclusion: This study aims to evaluate awareness about GDM among pregnant women. It was observed that most of the women have primitive knowledge about the existence of GDM but they do not have satisfactory detailed awareness. Very few of them are diagnosed with GDM. The early diagnosis by health-care professionals reduces the hazards of GDM in pregnant women. Improved awareness level is becoming a prime necessity for pregnant women worldwide as it would allow a better management of GDM in future.

1. Introduction

Most ladies will anticipate and recollect their pregnancy as a standout amongst the most euphoric and vitalizing a dominant moment. Sadly, in any case, this may not remain constant for some ladies with prior diabetes who come to view and experience their pregnancy as a staggering enthusiastic and physiological test, which is confounded by their diabetes [1]. Diabetes mellitus (DM) is a metabolic disorder resulting from a shortcoming in insulin yield, impaired insulin action or both [2]. The glucose digestion system issue is essentially gotten from etiology, and pathophysiology of the level of inadequacy of

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insulin activity. The diabetic issues are arranged into four groups: (i) Type-1 Diabetes Mellitus; (ii) Type-2 Diabetes Mellitus; (iii) Diabetes Mellitus because of other particular systems or maladies; and (iv) Gestational Diabetes Mellitus (GDM) [3].

Gestational diabetes mellitus (GDM) is specified as 'carbohydrate prejudice' of differing degrees of solemnity with onset or first acknowledgment amid pregnancy. GDM therefore includes Type I or Type II diabetes beforehand undetected or with first presentation amid pregnancy. GDM ordinarily determines taking after birth. However, these ladies are at risk for type II diabetes in the future... [4]. Pregnancy is a physiological state with an unpredictable anatomical and functional interaction amongst mother and fetus. At the point when this interaction is not a success, the mother, the baby, or both show functional impairments. Complications of pregnancy are essential reasons for maternal mortality, where gestational diabetes mellitus (GDM) and obesity of the mother in pregnancy (OP) are major obstetric pathologies. Fetal-maternal interaction could result about metabolic disturbances leading, for instance, to placental and endothelial dysfunction [5].

Placenta is an extremely functional short-lived organ responsible for the normal advancement of pregnancy in mammals. Defects in implantation, placental improvement and development prompt to difficulties in pregnancy and babies. Changed placental translation of metabolic regulatory genes has been related to influence fetal development and maternal pregnancy difficulties, for example, preeclampsia (PE) and gestational diabetes mellitus (GDM) [6]. The presence of diabetes expands the risk of poor fetal and neonatal results, and also the risk of poorer results for the mother. Ladies with Type 1 diabetes have an elevated risk of pregnancy misfortune, prenatal mortality, fetal macrosomia and inborn deformities. This is likewise valid for ladies with pre-existing type 2 diabetes and ladies with type 2 diabetes may even have higher rates of antagonistic results than ladies with type 1 diabetes. Cardiovascular distortions are the most widely recognized birth defects in babies born to diabetic mothers. Apart from macrosomia, other unfriendly results for newborn children may include huge for-gestational age, shoulder dystocia (trouble in conveying shoulders of infant), neonatal hypoglycemia, preterm birth, hyperbilirubinaemia (abundance bilirubin), hypocalcaemia (lower than typical calcium) and neonatal intensive care confirmation [7]. Placental hormones, development components, and cytokines cause a dynamic increment in insulin resistance, requiring serious therapeutic sustenance treatment and as often as possible balanced insulin organization to prevent hyperglycemia dangerous to the fetus [8].

In developed countries, antenatal watch over the pregnant lady usually starts in the first trimester, with ensuing visits approximately month to month until 28 weeks, then expanding in frequency with fortnightly visits to 36 weeks, and week by week until delivery. In this model, the greater proportion of visits in the third trimester aligns with increased complications in the later stages of pregnancy. Ideally, these difficulties should be anticipated in the first and second trimesters to enable prevention [9].

The basis of plasma glucose administration amid pregnancy is dietary treatment like that amid non-pregnancy. As nutrition for embryos amid pregnancy, glucose, amino acids, and free unsaturated fats are provided through the maternal placenta; the main energy source for babies is glucose. The fundamental purposes of dietary treatment for pregnant ladies with abnormal glucose tolerance are to prevent ketosis of mother from insufficient carbohydrate intake and to perform strict glycemic control [10]. Nutritional treatment is broadly suggested as an integral part of the treatment of GDM. Nutritious necessities are

the same for pregnant ladies with and without GDM. In any case, a few dietary changes can bring down glucose levels more successfully than a standard eating regimen for pregnant women. These include reducing caloric intake for overweight and obese women [11].

2. Methodology

It was a cross - sectional study and carried out in civilized areas of one the most populated cities of Pakistan i.e., Karachi. The survey- based study was conducted among married females. The sample population was provided with a questionnaire to evaluate the awareness and prevalence regarding GDM i.e., Gestational Diabetes Mellitus. Data is analyzed from the results of the questionnaire and various graphs are plotted for statistical analysis indicating the awareness of gestational diabetes in sample population (n=120).

3. Result

In our study, we assets the data of 120 married women from civilized areas of Karachi (Pakistan). Awareness about gestational diabetes is the major objective of our current study. Different questions related to awareness were included in the questionnaire. Our observation estimates that about 93% women were aware of the risk of gestational diabetes while 6.66% unaware of it (FIG. 1). We were also seen that only 10% females suffered from GDM and 90% were found as non- diabetic pregnant ladies (FIG. 2). During pregnancy, about 70% gestational diabetes was predominantly found in women as compared to type 1 & type 2, 6.66% & 13.33%, respectively. 10% women were unaware of the knowledge of diabetes related to pregnancy (FIG. 3). The proportion of gestational diabetes risk factors include pre pregnancy (33.33%), family history(32%), diabetes during previous pregnancy(6.66%), repeated abortion/ miscarriage causes about 6.66% & 26.66% were unaware of the risk factors. Mostly women believe that common predicted period of gestational diabetes is the 2nd trimester (43.3%), then 1st trimester (23.33%) & 3rd trimester (6.66%) & 26.66% women were not known about the expected period (FIG. 4). One of the most beneficial observations of our study was that, only 10% gestational diabetic women were suffering from another disorder & about 90% were free from it (FIG. 5). Women were acknowledged about the gestational disease by the source, through social media 3.33%, friends & family 43.33% & health care professionals about 50% & 3.33% women were totally unaware of it (FIG. 6). The diagnostic test of GDM ratio awareness among women was about 60% well known, 23.33% unknown & 16.66% totally don't know (FIG. 7).

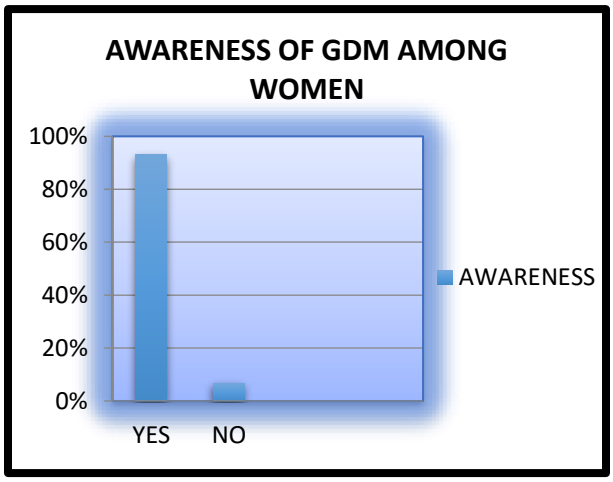

FIG. 1. **Graph representing the awareness of gestational diabetes among women.**

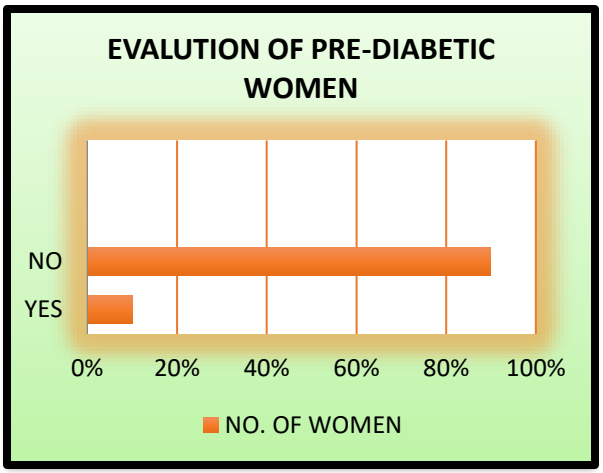

FIG. 2. **Graph representing the suffered women with pre-diabetes.**

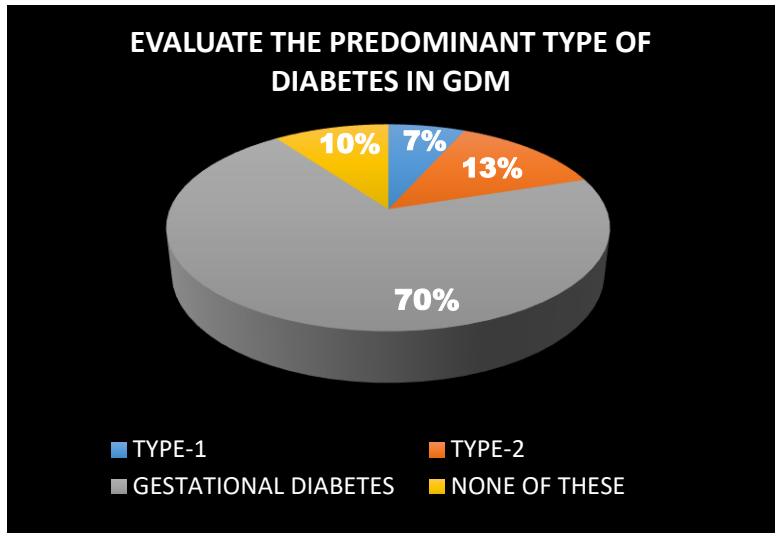

FIG. 3. **Graph representing the predominant type of diabetes in GDM women.**

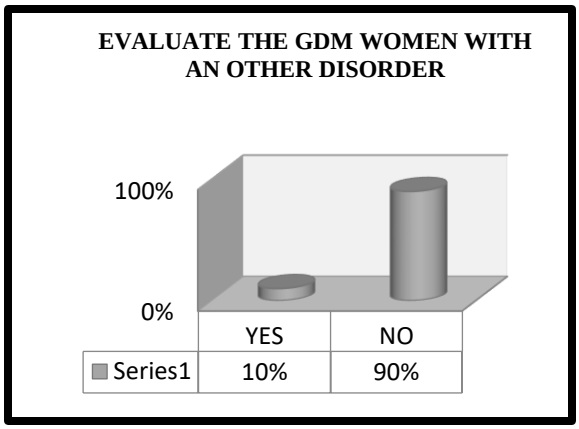

FIG. 4. **Graph representing the diagnostic GDM women with or without disorder.**

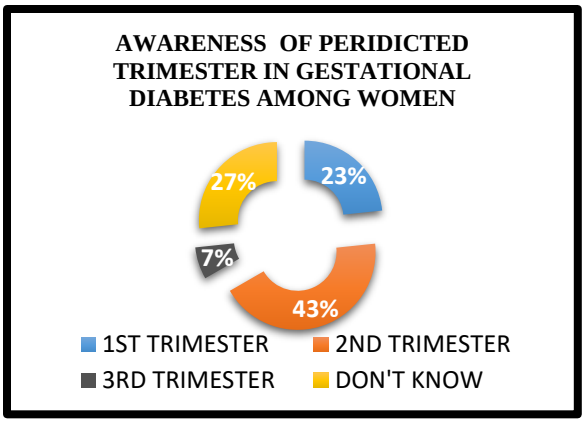

FIG. 5. **Graph representing the awareness of predicted period in GDM diagnosis.**

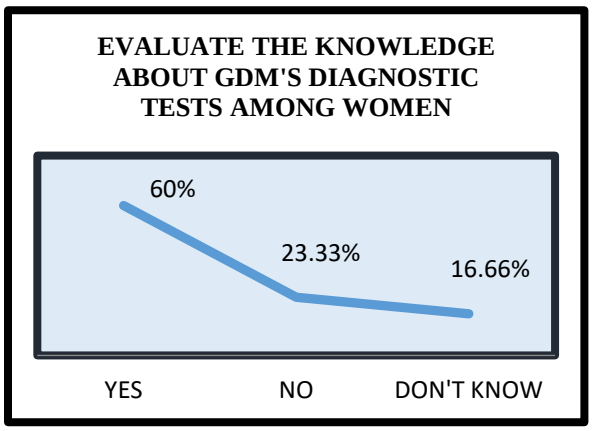

FIG. 6. **Graph representing the knowledge of GDM's diagnostic tests.**

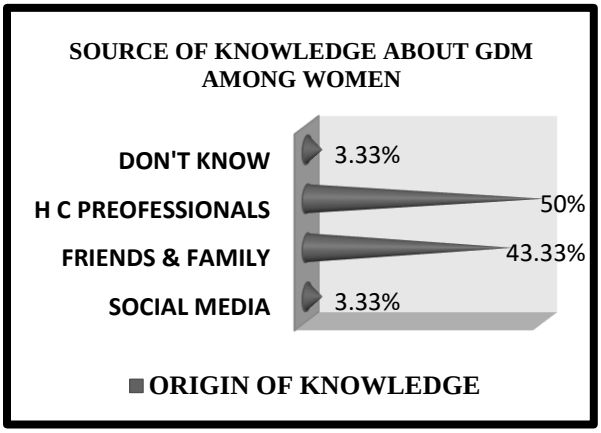

FIG. 7. **Graph representing the origin of knowledge about GDM.**

4. Discussion

GDM is one of the major complications among women with pre pregnancy, diabetes or post pregnancy, diabetes. It can easily diagnose in thick (overweigh) or in thin, hyperinsulinemic, insulin -resistant women. Approximately, 5% of all pregnancies

have suffered from gestational diabetes and also at risk for diabetic women, may suffer from type 2 diabetes in the future. It may easily increase the fetal & maternal morbidity & mortality. Maximum chances of respiratory distress, hypoglycemia, hypocalcemia, hyperbilirubinemia, polycythemia, and hyperviscosity may occur in neonates due to GDM. If preceding the complications unceasingly, might result in of major inborn malformations and miscarriage. Even cause macrosomia in newborn. Many of the research studies exposed the GDM related as risk factors, complications, management or diagnostic tests. Our study has been carried out to underline or evaluate the awareness of gestational diabetes among married women. We work on 120 sampled populations in a civilized area of Karachi for awareness. Awareness about GDM among women is quite acceptable that mean; 93% women were aware of the risk of gestational diabetes while 6.66% unaware from it. Few women are suffering from pre pregnancy diabetes. Many women perceive that 2nd trimester is the most portend period in GDM. Advantageous point is that maximum non-diagnostic women were known about the GDM disorder by their health care professionals. Their professionals were monitoring their patient's glucose level & also maintain it from 1st to last trimester, which is the biggest challenge & burden on them. Indirectly, they are trying to overcome the above mentions complication appear at or after the birth of neonates

5. Conclusion

This study aims to evaluate awareness about GDM among pregnant women. It was observed that most of the women have primitive knowledge about the existence of GDM, but they do not have satisfactory detailed awareness. Very few of them are diagnosed with GDM. The early diagnosis by healthcare professionals reduces the hazards of GDM in pregnant women. They have a special task to give care that not only enhances the biological possibility for a healthy child to be born, but also assets the woman with GDM to suppress the situation and, thus, boost her health, well-being, and motherhood. Improved awareness level is becoming a prime necessity for pregnant women worldwide as it would allow a better management of GDM in future.

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