AL-KUNOOZE SCIENTIFIC JOURNAL
ISSN: 2706-6231 E ,2706-6223 P
Vol.11 No.4 (2025)

The Predominant Risk Factors for the Development of Gestational Diabetes Mellitus among Reproductive Age Women from Thi-Qar

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Abstract

Gestational diabetes mellitus (GDM), a prevalent illness, describes maternal glucose intolerance that is first discovered during pregnancy. There are multiple risk factors linked to the development of GDM. **Aim of study:** to evaluate which risk factors are most common for the development of GDM in Thi-Qar's reproductive-age women, and to predict which risk factors have the worst outcomes for both the mother and fetus. **Methodology:** A cross-sectional observational study was conducted on 1504 reproductive-age married women attending an Endocrine Center. All patients' data were collected from direct interviewees and the use of digital records of the tertiary center, which used an internal network system and the Microsoft Access program. Demographic characteristics and Clinical history of GDM, history of macrosomia, and family history of diabetes were documented. **Results:** The mean age of participant was 33 ±8 years old, their mean weight was 76 ±15 kg, their BMI was 30.8±5.7 (Kg/m2), and their waist circumference was 94.5±12.5 centimeters. BMI, first-degree relatives with diabetes, chronic hypertension, macrosomia, polycystic ovary syndrome, and lipid disorder were significantly higher among women with GDM rather than those without (p-value = 0.004, 0.001, 0.001, 0.001, 0.001, 0.001, respectively). **Conclusion:** Family history of DM, obesity, macrosomia, PCOS, hypertension, lipid disorder, multiparity, and number of stillbirths are measured as dependent risk factors for the prediction of GDM and DM complications. Heart disease, kidney disease, congenital anomalies, and physical inactivity were insignificant associations with the incidence of GDM in this study. GDM is considered another risk factor for the prediction of chronic DM and later complications.

Keywords: Gestational, Diabetes Mellitus, Reproductive, Women, Predominant Risk**.**

Introduction

Maternal glucose intolerance that is initially identified during pregnancy is known as gestational diabetes mellitus (GDM), a common condition in pregnant women [1]. According to the 2017 International Diabetes Federation (IDF), GDM affects 14% of pregnant women globally, representing over 18 million births every year [2]. Two generations are at risk when a woman has a history of GDM since she is more likely to experience unfavorable maternal and neonatal outcomes, as well as future diabetes, primarily Type II DM, including her offspring [3]. Pregnancy-related diabetes could have an identical pathogenesis to T2DM as insulin-resistant tissue becomes more prevalent as the pregnancy goes on and more insulin is required [4].

Despite the fact that GDM is linked to problems for both the mother and the fetus during an index pregnancy, women who have GDM after giving birth are ten times more likely to develop T2DM [5]. It is critical to identify modifiable risk factors and assess their possible influence on this common disorder to prevent GDM. Many potentially modifiable prenatal variables and altered lifestyle choices have been associated with a decreased risk of GDM [6].

Diabetes dramatically increases the risk to both the mother and the fetus, which is mostly dependent on the degree of high blood sugar levels, but also connected to long-term issues and diabetes comorbidities [7]. Neonatal sequelae are common among women with gestational hyperglycemia, particularly spontaneous abortion, baby malformations, infant death, macrosomia (who has given birth to a child weighing more than 4 kg), neonatal hypoglycemia, neonatal respiratory distress syndrome, and hyperbilirubinemia. Diabetes during pregnancy also raises the risk of hypertension, obesity, and T2DM in children in the future [8].

The development of GDM has been linked to several risk factors investigated under the headings of sociodemographic, obstetric, and clinical danger variables. The most common risk factors associated with the onset of GDM are being older than 40, being obese, having a history of GDM or fetal macrosomia, having a family history of DM in first-degree relatives, having multiple births, or having taken medications like corticosteroids or antipsychotics [9]. To a lesser extent, prior abortion, parity, and stillbirth may be measured as additive risk factors for the new cases of GDM [10]. The objectives are to investigate the socio-demographic characteristics and the predominant risk factors for the expansion of GDM among reproductive-aged women in Thi-Qar and to predict which risk factors have the worst outcome for both the mother and fetus.

Methods and Materials

This is a cross-sectional observational study involving married women between the ages of 16 and 45 years who are attending Thi-Qar Specialized Diabetes Endocrine and Metabolism Center (TDEMC), a tertiary facility in Thi-Qar, Southern Iraq, and were received from all districts, sub-districts, and

the city center, the specialist institution in Thi-Qar governorate dealing with chronic illness DM (850 samples), Al-Nasr Model Center (300 samples only), and Al-Zahraa Health Center (354 samples). A regular daily sample was collected by simple randomization from all work time (8:30 a.m. to 2:00 p.m.) for 5 days a week, starting September 2024 until January 2025. Throughout this time, a sample of married women of reproductive age (16-45 years) was collected through direct interviews, depending on the study's exclusion or inclusion criteria.

The sample size was calculated according to this equation

$$\text{Sample size} = \frac{Z(1-\alpha/2)^2\ P\ (1-P)}{d^2}$$

Here, $Z_{1-a/2}$ is a standard normal variate at 5% type 1 error ($P<0.05$); it is 1.96, as this study considered the level of significance at 0.05. P = proportion of GDM in the population, which was (14.1%) according to the following evidence [11]. d = Absolute error or precision, and the researcher wants to calculate this sample size with the precision/absolute error of 5% and at a type 1 error of 5%. The smallest sample size necessary to do this study was 187, but the real number of participants in this study was 1504 for more satisfaction.

Only women had to meet the following criteria to be included in the study: all married women of reproductive age from 16 to 45 years who were pregnant with or without GDM and were eligible and willing to participate in the study. Any woman who did not meet these criteria was excluded accordingly, like women with known type 1 diabetes, known type 2 diabetes, drug-induced diabetes, and transient hyperglycemia before marriage, plus unmarried women, and who refused to interview on the questionnaire.

Participants were asked to complete questionnaires regarding demographic information, such as age, marital status that is classified as married, divorced, or widowed; residency (rural or urban); parity; and education level for people who were classified as illiterate, primary, intermediate, university, or post-institutional. Clinical history of GDM during pregnancy, history of macrosomia (who has given birth to a child weighing more than 4 kg), family history of diabetes (first-degree relatives, including parents, father, mother, sister, brother, daughter, son).

Women who have a history of hypertension, lipid disorders, kidney illness, heart disease, polycystic ovarian syndrome, or chronic diabetes. Further clinical data were recorded, such as the obstetric history, which included the number of live births, the number of deaths, the number of abortions, and any congenital abnormalities.

Anthropometric Measurements:

Weight, height, and waist circumference (WC) in centimeters were the three anthropometric measurements that were computed. The patient was asked to remove their shoes and, if feasible, leave their head

exposed while standing upright on level ground. The seca®217 mobile stadiometer was then used to measure the patient's height. The patient was dressed as thinly as possible, without shoes, with an empty stomach and bladder, and the weight was recorded using this Seca®763 electronic weigh station. After squaring it, the weight in kilograms divided by the height in meters yielded the BMI which classified as underweight (below 18.5 kg/m²), normal weight (between 18.5 and 24.9 kg/m²), overweight (between 25.0 and 29.9 kg/m²), Class-I obesity (between 30.0 and 34.9 kg/m²), class-II obesity (between 35.0 and 39.9 kg/m²), and class-III obesity (above 40 kg/m²) [12].

A flexible inch tape was used to measure the woman's waist circumference while she was standing, at the halfway point between the lower coastal margin and the iliac crest. According to a local study conducted in 2007 on a healthy adult from Basrah, central obesity has been identified when the WC is equal to or greater than 99 cm [13].

Biochemical Tests

According to the ADA defining criteria, each pregnant woman was diagnosed with GDM if her fasting blood glucose level was greater than 92 mg/dL (5.1 mmol/L), her one-hour glucose tolerance test result was 180 mg/dL (10.0 mmol/L), and her two-hour glucose tolerance result was 153 mg/dL (8.5 mmol/L) [14]. Glycated hemoglobin (HbA1c) levels of 6.5% or higher, as determined by a qualified method (Bio-Rad Variant II Turbo HbA1c Kit – 2.0 Quick Guide 270-2455EX), were used to confirm that certain pregnant women had new GDM. The duration of GDM was defined as the time interval (to the closest month) between the patient's diagnosis date and the visit date [15].

Every participant in the study had their fasting lipid profile (low-density lipoprotein cholesterol [LDL-C], high-density lipoprotein [HDL-C], total cholesterol [TC], and triglyceride [TG]) assessed. Renal function was assessed by measuring serum creatinine, and creatinine clearance (e.GFR) was calculated using the CKD-EPI Creatinine Equation for Glomerular Filtration Rate (GFR) estimates, and a value less than 60 ml/min/1.79 m² was considered as CKD [16].

Statistical Analysis:

The one-sample Kolmogorov–Smirnov check was performed to determine the normal distribution of the parametric variables, and the results were displayed as mean and standard deviation (SD). While analysis of variance (ANOVA) and independent Student t-tests were used to examine continuous variables, the chi-square test was used for non-parametric data. The data was analyzed using Statistical Packages for Social Sciences (SPSS Inc., Chicago, IL, USA) version 23.0. $P \leq 0.05$ was the criterion for statistical significance.

Results

Table (1): Baseline and sociodemographic characters of the enrolled women

Variables		Mean ±SD	Minimum	Maximum	Frequency (%)
Age (years)		33 ±8	16	45	1504
Weight (kg)		76 ±15	43	140	1504
BMI (kg/m2)		30.8 ±5.7	16.5	54.7	1504
Waist circumference (cm)		94.48±12.5	59	134	1504
FBS (mg/dl)		187±101	45	563	347
RBS (mg/dl)		128±82	50	650	1195
HBA1C (%)		9.1± 2.4	4.4	15.2	366
LDL (mg/dl)		163± 57	42	235	19
HDL (mg/dl)		48 ± 14	7	124	217
Cholesterol (mg/dl)		187± 45	74	350	431
Triglyceride (mg/dl)		171± 121	24	856	292
Creatinine (mg/dl)		0.67±0.12	0.4	1.59	397
e.GFR (ml/min)		109± 22	37	207	397
Home address	**Urban**	--- ---	--- ---	--- ---	1330(88.4%)
	Rural	--- ---	--- ---	--- ---	174 (11.6%)
Marital status	**Married**	--- ---	--- ---	--- ---	1491(99.1%)
	Divorced	--- ---	--- ---	--- ---	9 (0.6%)
	Widow	--- ---	--- ---	--- ---	4 (0.3%)
Pregnant	**No**	--- ---	--- ---	--- ---	1040(69.1%)
	Yes	--- ---	--- ---	--- ---	464 (30.9%)
Occupational status	**Housewife**	--- ---	--- ---	--- ---	1366(90.8%)
	Employed	--- ---	--- ---	--- ---	138 (9.2%)
Education attainment	**Illiterately**	--- ---	--- ---	--- ---	459(30.5%)
	Primary	--- ---	--- ---	--- ---	541(36.0%)
	Intermediate	--- ---	--- ---	--- ---	254(16.9%)
	Secondary	--- ---	--- ---	--- ---	63(4.2%)
	University	--- ---	--- ---	--- ---	187(12.4%)

Abbreviations: FBS; fasting blood sugar, RBS; random blood sugar, HbA1C; Glycated hemoglobin A1C, LDL; Low density lipoprotein, HDL; High density lipoprotein, e.GFR; Estimated glomerular filtration rate

One thousand five hundred and four women were enrolled in this study. The mean age of the whole participant group was 33 ±8 years old, the mean weight was 76 ±15 kg, the BMI was 30.8±5.7 (kg/m²), and the mean waist circumference was 94.5±12.5 centimeters. For education level, those women were distributed as illiterate (30.5%), primary school (36.0%), intermediate school (16.9%), secondary school (4.2%), and university (12.4%) (Table 1).

The mean glycemic parameters of the participants were RBS 128±82 mg/dl, FBS 187±101 mg/dl, and HbA1c 9.1± 9.1±2.4% (Table 3-1). The mean lipid profile of the participants was found to be total cholesterol (TC 187±45.8 mg/dL), LDL-C 163±57 mg/dL, HDL-C 48±14 mg/dL, and TG 171±121 mg/dL. Their renal function was assessed by creatinine 0.67±0.12 mg\dl, and creatinine clearance was measured by e.GFR 109±22 ml\min\1.73 m2 for the participants.

One thousand three hundred thirty (88.4%) women lived in urban districts, and 174 (11.6%) were from rural populations. According to marital status, 1491 (99.1%) women were married, nine (0.6%) were widowed, and four (0.3%) were divorced. Most women were housewives (1366, 90.8%), while others were employed (138, 9.2%). This study recorded 464 (30.9%) pregnant women and 1040 (69.1%) non-pregnant women (Table 1).

Clinical risk factors and complications of the enrolled women

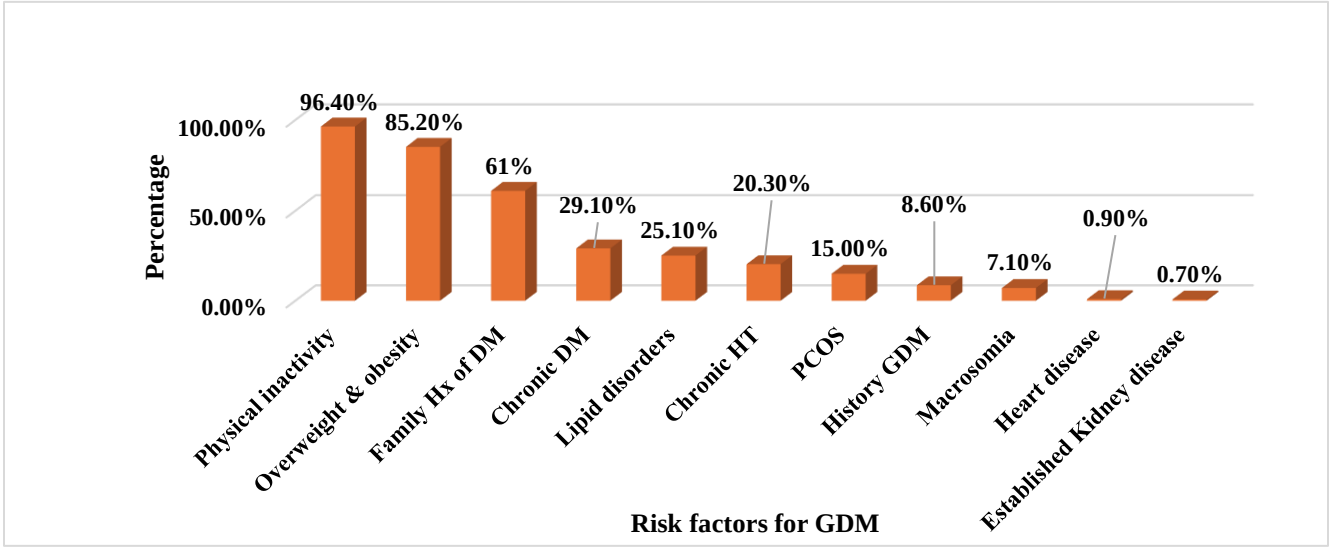

Figure (1)

Figure (1) shows that clinical risk factors of these reproductive-aged women, there were 1450 (96.4%) women who were physically inactive, 1282 (85.2%) women who were overweight or obese, 917 (61%) women who had a first-degree relative with DM, 438 (29.1%) women who had chronic diabetes mellitus, 377 (25.1%) women who had

abnormal lipid disorders, 305 (20.3%) women who had chronic hypertension, 226 (15.0%) women who were make a diagnosis with a history of the syndrome of polycystic ovary, 129 (8.6%) women with GDM, and 107 (7.1%) women who had macrosomia. There were a limited number of participants who had either heart disease, 14 (0.9%), or established kidney disease, 11 (0.7%).

Table (2): The Relationship between GDM and different risk factors

Variables		No GDM	GDM	Total	P value
Physical activity	No	1328(96%)	122(94.6%)	1450(96.4%)	**0.24**
	Yes	47(3.4%)	7(5.4%)	54(3.6%)	
BMI (kg/m2)	< 25	214(15.6%)	8(6.2%)	222(14.8%)	**0.004**
	≥25	1161(84.4%)	121(93.8%)	1282(85.2%)	
First degree (DM)	No	569(41.4%)	18(14.0%)	587(39.0%)	**0.001**
	Yes	806(58.6%)	111(86.0%)	917(61.0%)	
Lipid disorder	No	1082(78.7%)	45(34.9%)	1127(74.9%)	**0.001**
	Yes	293(21.3%)	84(65.1%)	377(25.1%)	
Chronic hypertension	No	1121(81.5%)	78(60.5%)	1199(79.7%)	**0.001**
	Yes	254(18.5%)	51(39.5%)	305(20.3%)	
PCOS	No	1187(86.3%)	91(70.5%)	1278(85.0%)	**0.001**
	Yes	188(13.7%)	38(29.5%)	226(15.0%)	
Macrosomia	No	1306(95.0%)	91(70.5%)	1397(92.9%)	**0.001**
	Yes	69(5.0%)	38(29.5%)	107(7.1%)	
Heart disease	No	1363(99.1%)	127(98.4%)	1490(99.1%)	0.44
	Yes	12(0.9%)	2(1.6%)	14(0.9%)	
Kidney disease	No	1365(99.3%)	128(99.2%)	1493(99.3%)	0.95
	Yes	10(0.7%)	1(0.8%)	11(0.7%)	

BMI; Body mass index, PCOS; Polycystic ovary syndrome.

Table (2) shows the relationship between GDM and different risk factors. Residency, BMI, first-degree relative with diabetes, chronic hypertension, macrosomia, polycystic ovary syndrome, and lipid disorder were significantly higher among women with GDM than those without (p-value = 0.004, 0.001, 0.001, 0.001, 0.001,

0.001, respectively). At the same time, physical inactivity, kidney disease, and heart disease were not significantly different among women with GDM than women without it (p-value = 0.24, 0.095, and 0.44, respectively).

Distribution of BMI classes among women

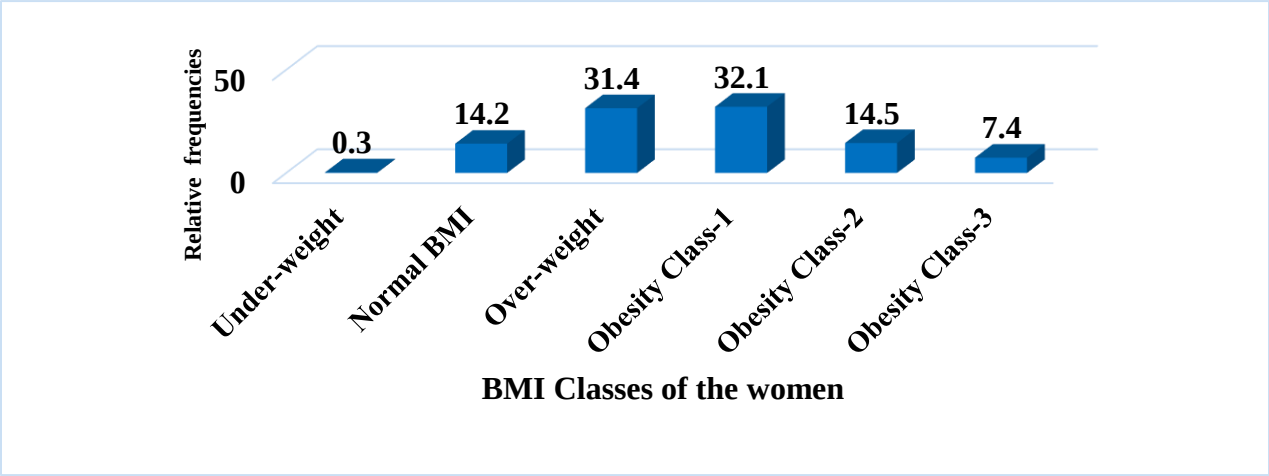

Figure (2)

Figure (2) showed that the Most women were either overweight or obese (85.2%), and they were distributed in descending order as Class-I obesity (32.1%), overweight (31.4%), class-II obesity (14.5%), normal weight (14.2%), class-III obesity (7.4%), and underweight (0.3%)

Relationship of GDM and Chronic DM

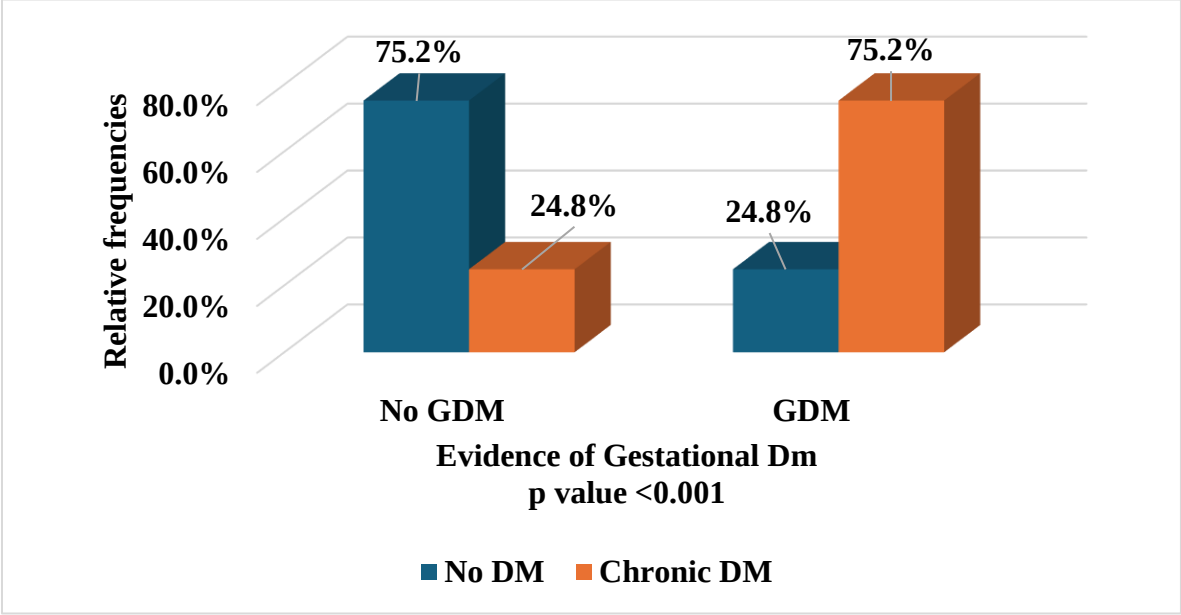

Figure (3)

This figure (3) shows that the relationship between GDM and chronic diabetes mellitus was significantly higher among women who had GDM than those without (P value < 0.001).

Relation of GDM and Different Types of DM

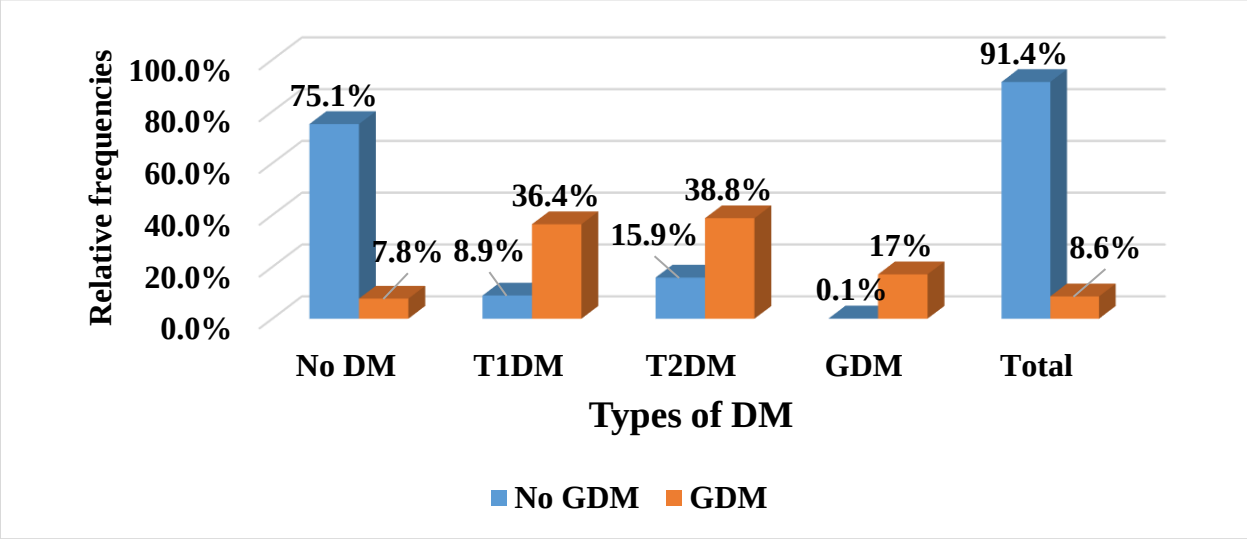

Figure (4)

This figure (4) shows that the relationship between GDM and different types of diabetes mellitus was significantly higher among women with GDM than those without (P value < 0.001).

Discussions

Globally, GDM is rising as much as T2DM, according to the last update of both ADA and IDF [8]. In the MENA region, one in every seven pregnant women has the chance of having dysglycemia (11). Searching for the risk factors of this medical issue is crucial, as it may help in preventing its occurrence in the future. In this cohort, 8.6% of the women had GDM, which is considered lower than what was expected by International Diabetes Federation (IDF) appraisals in the year 2017 (14%) and studies conducted in or later in 2010 [17], but it seems near to what was found in studies conducted before 2009 (10.6% and 10.3%) and a local study done in 2022 [18,19].

Regarding Age. According to this study, women with GDM were significantly older than those without GDM (P value 0.001), and it was consistent with different studies indicating that the prevalence of GDM rises with increasing maternal age [20,21]. Getting older in maternal age is a dominant risk factor for GDM because aging causes fat to redistribute and increase dysfunctional pre-adipocytes, which can release pro-inflammatory cytokines and chemokines that disrupt insulin pathogenesis [22].

Waist circumference

Women with GDM had a considerably higher prevalence of central obesity than those without (p-value = 0.001), and it was consistent with another study [23], which

indicated that general obesity, central obesity, and visceral adiposity were all related to an elevated risk of GDM. The risk of GDM is comparable across general and central obesity. Furthermore, visceral adiposity was a more significant risk factor for GDM than general or central obesity. In contrast, Basraon et al. found that WHR could not replace BMI as a prenatal risk factor for GDM [24].

BMI

Despite these women being young, we found that more than 85% of them were either overweight or obese, which was consistent with what was documented by a local study in 2022 [19]. This may be related to excessive ingestion of a high-carbohydrate diet with sedentary life behavior, and it was significantly associated with the occurrence of GDM among those women, which was similar to studies done in PHCs in Najaf City [22] and in Saudi Arabia in PHCs in Riyadh [20]. Furthermore, more than one-fifth of the women were in class II or III obesity, which may give a clue to the negative metabolic balance of these women between putting on and burning off calories. The high class of obesity may increase the burden of many obesity-related complications like metabolic syndrome, DM, hypertension, dyslipidemia, obstructive sleep apnea, and atherosclerotic cardiovascular disease (CVD). It was surprising for this data that only 14% of the women had a normal BMI despite their young age and reproductive period, making us expect unpleasant contours for those women in the future when they become older. In addition, most of those women were physically inactive, which may predispose them to their high BMI and co-exist as an additive danger feature for the occurrence of GDM in those populations (25). Obesity is also a well-known risk factor for GDM, since it is related to insulin resistance, ectopic fat deposition, chronic inflammation, and the release of pro-inflammatory cytokines and chemokines. Obese women were also shown to have greater amounts of adipokines such as chemerin and leptin, both of which increase inflammation and insulin resistance [22].

Occupational status and education. Most of women with GDM lived in urban areas compared to those in rural areas, and one-third of this cohort were at the primary level of education. These results are in agreement with studies conducted in Iraq and Iran [12]. Due to the environment of the rural lifestyle, which necessitates a high level of physical activity for work, those living in rural areas are generally less prone to developing GDM. Additionally, sedentary lives and an excess of fast food are examples of modernizing practices among the urban population [26].

Family history of DM A family history of DM was observed in less than two-thirds of the women (61%), and it was clearer among women with GDM (86%) as compared with those without GDM (59%). Family history of DM may be a strong risk factor for developing GDM, and this was also seen in a study done in Iran [27]. Our results regarding family history of GDM were supported by another study done in different parts of Iran; in Shoushtar, a seven-fold risk of GDM was reported in women with a history of T2DM in

the family [28]. Family history of the T2DM was substantially more common among women with GDM (58.1%) than among those without GDM (36%), and this could be considered an additional risk factor for prompting the new cases of GDM within this cohort, as shown by Monod [29].

Chronic T2DM was found among less than one-third of this cohort, and it was three times higher among women with GDM as compared to those without GDM. This agrees with a study done by Bangash [30]. And another study done by Sweeting [31]. Women with a history of GDM are ten times more likely to develop T2DM, primarily in the first five years after GDM, according to a recent major meta-analysis and systematic review. Those women with chronic DM were distributed as T2DM (39%), slightly higher than T1DM (36%), and to a lesser degree GDM (17%). This distribution allows us to revise and highlight the pathophysiological pattern of DM among reproductive-aged women. It could be related to genetics, autoimmunity, environmental factors, socioeconomics, or familial background and it may explain the vicious relationship between both chronic DM and family history of DM and GDM [32,33].

Dyslipidemia was found among one quarter of this cohort, which may predispose them to both an increasing incidence of GDM and its complications, where three-fold (65%) of the women with GDM were having dyslipidemia as compared to those without (20%). This agrees with two studies done in China and another study done by Mustaniemi. Higher triglyceride levels were the most strongly associated with GDM among conventional lipids, which is in line with earlier research. Women who developed GDM had lower HDL-cholesterol levels and higher LDL-cholesterol and total cholesterol levels than those who did not. These abnormal lipid parameters may reflect a feature of insulin resistance and metabolic syndrome among women with GDM [34,35].

In this study, there was a significant association between chronic hypertension and GDM, as chronic HT was represented in two-fold of women with GDM (40%) as compared to those without GDM (19%) (P value < 0.001). These results were consistent with a study done in Pakistan (43%), but they were higher than a study carried out in Iran (2.8%) [36].

In this study, PCOS was found among 15% of the participants as a risk factor for GDM, and women with GDM (29.5%) had a significantly greater rate of PCOS two-fold more than women without GDM (13.7%; p=0.001). These results supported the findings of a study done by Mills that demonstrated PCOS is a risk factor for GDM on its own, with risks that are two to three times greater. Additionally, a local investigation found that dysregulated insulin secretory function and glucose intolerance were significant risk factors for the development of T2DM in those with a history of PCOS [37,38].

Macrosomia is an attractive sign for health care providers to pay attention to predict hyperglycemia among reproductive-aged women. It found that macrosomia correlated significantly with the evidence of GDM as

compared with those without, which was consistent with many studies done in Najif, India, Tanzania, and KSA (20), but Eltoony et al. found no significant correlation between history of infants with macrosomia and GDM among Egyptian women. The reason for this could be that the infant's high weight during the index pregnancy may indicate inadequate management and/or poor nutrition for the mother, or it may indicate the severity of GDM, which may put women at risk for recurrent GDM [39-42].

Established heart and kidney diseases

Neither established heart nor kidney diseases were significantly documented in this cohort, which could be logical due to most of these women being at reproductive age, well-estrogenized, and considered at low risk for both atherosclerotic cardiovascular diseases and kidney dysfunctions. This matches the study done in Jeddah, Saudi Arabia, in 2023 [43-46]. But some studies found that GDM may be a risk for either atherosclerotic CVD due to lipid disruption, such as higher triglyceride levels and lower HDL cholesterol [47].

Physical activity

Most women in this cohort were physically inactive, reaching more than 96%, which could be due to their life habits as home-caring women or their having socio-economic barriers to exercising regularly. It was found that physical inactivity is the predominant and first-ranked among all other risk factors to predict GDM in these women. The current study did not discover any significant statistical variance between physical activity and GDM. This study agrees with the study done by Aune [48]. Although women with GDM are more likely to give birth to a macrosomic baby, have a cesarean section, or have a preterm birth, all these negative outcomes can be managed with exercise. In addition to controlling BMI, adequate physical activity also helps to reduce the risk factor for GDM [49].

Blood glucose parameters

From baseline glycemic assessment parameters, women with GDM had statistically significantly higher blood sugar levels than those without GDM, which was consistent with [26]. On further analysis, there was no statistically significant difference in HbA1c between the two groups (P=0.565), which could be contrasted with the Shandong, China study [50], and it may be related to the small HbA1c results of the participants, or some evidence suggests that anemia and kidney disease may affect HbA1c. This disagreed with the study done by Habibi [51]. The fundamental explanation for the fall in maternal blood glucose is that the fetus consumes a substantial quantity of sugar during development, and insulin accelerates the release of glucose into the bloodstream for metabolism, lowering blood sugar levels [52].

Regarding Renal function, the existing study displayed no statistically significant relationship between creatinine and GDM (P-value=0.550). This result was in agreement with a study and in contrast to the study done in Iraq [53,54].

The large sample size and wide range of risk factor assessments with high-quality risk factor assessment interviews among this pool

of reproductive-age women increase the strength of this data. This study focused on women without a prior history of type 1 and type 2 DM, as well as GDM, and its association with risk factors. There are a number of limitations to this study; the absence of two- or three-step glucose tolerance tests for diagnosing GDM among pregnant women is the gold standard for diagnosis. So, further studies are required to judge these issues in the future.

Conclusion

Family history of DM, obesity, macrosomia, PCOS, hypertension, lipid disorder, multiparty, and number of stillbirths are measured as dependent risk factors for the prediction of GDM and DM complications. Heart disease, kidney disease, congenital anomalies, and physical inactivity were insignificant associations with the incidence of GDM in this study. GDM is regarded an additional risk factor for the prediction of chronic diabetes and subsequent consequences.

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عوامل الخطر السائدة للإصابة بسكري الحمل لدى النساء في سن الإنجاب من محافظة ذي قار

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طبيب غدد صماء للبالغين، مركز ذي قار التخصصي للسكري والغدد الصماء والتمثيل الغذائي، مديرية صحة ذي قار [3]

الخلفية العلمية: داء السكري الحملي، وهو مرض شائع يُصيب الأم ويصيبها بعدم تحمل الجلوكوز، ويُكتشف لأول مرة أثناء الحمل. هناك عوامل خطر متعددة مرتبطة بتطور داء السكري الحملي. **اهداف الدراسة:** صُممت هذه الدراسة لتقييم عوامل الخطر الأكثر شيوعًا لتطور داء السكري الحملي لدى النساء في سن الإنجاب في ذي قار، وللتنبؤ بعوامل الخطر التي تُسبب أسوأ النتائج لكل من الأم والجنين. **المنهجية:** أُجريت دراسة رصدية مقطعية على 1504 امرأة متزوجة في سن الإنجاب، يراجعن مركزًا للغدد الصماء. جُمعت جميع بيانات المريضات من المقابلات المباشرة، وباستخدام السجلات الرقمية للمركز، الذي استخدم نظام شبكة داخليًا وبرنامج مايكروسوفت أكسس. وُثّقت الخصائص الديموغرافية والتاريخ السريري لداء السكري الحملي، وتاريخ ضخامة الجنين، والتاريخ العائلي لمرض السكري. **النتائج:** كان متوسط أعمار المشاركات 33 ± 8 سنوات، ومتوسط وزنهن 76 ± 15 كجم، ومؤشر كتلة الجسم 30.8 ± 5.7 (كجم/م²)، ومحيط الخصر 94.5 ± 12.5 سم. كان مؤشر كتلة الجسم، ووجود قريب من الدرجة الأولى مصاب بداء السكري، وارتفاع ضغط الدم المزمن، وضخامة الجنين، ومتلازمة تكيس المبايض، واضطراب الدهون، أعلى بشكل ملحوظ لدى النساء المصابات بداء السكري الحملي مقارنةً بغير المصابات به (القيمة الاحتمالية = 0.004، 0.001، 0.001، 0.001، 0.001، 0.001، على التوالي). **الاستنتاج:** يُقاس التاريخ العائلي لداء السكري، والسمنة، وضخامة الجنين، ومتلازمة تكيس المبايض، وارتفاع ضغط الدم، واضطراب الدهون، وتعدد الولادات، وعدد حالات الإملاص كعوامل خطر تابعة للتنبؤ بداء السكري الحملي ومضاعفاته. في حين أن أمراض القلب، وأمراض الكلى، والتشوهات الخلقية، وقلة النشاط البدني لم تكن لها ارتباطات تُذكر بحالات الإصابة بداء السكري الحملي في هذه الدراسة. ويُعتبر داء السكري الحملي عامل خطر آخر للتنبؤ بالإصابة بداء السكري المزمن ومضاعفاته اللاحقة.

الكلمات المفتاحية: الحمل، داء السكري، الإنجاب، النساء، الخطر السائد.