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Research Article

**RISK FACTORS OF GESTATION DIABETES MELLITUS &
IT'S OCCURRENCE****Dr Muhammad Ramzan, Dr Muhammad Sharif, Dr Muhammad Umair**
DHQ Hospital Muzaffargarh**Article Received:** February 2019**Accepted:** March 2019**Published:** April 2019**Abstract:**

Objective: The objective of this research work is to evaluate the rate of GDM (Gestational Diabetes Mellitus) and risk factors at the time of pregnancy.

Methods: The participants of this study were 650 females with pregnancy with unknown factors of for gestation diabetes mellitus and continued their follow ups in the pregnant females Outpatient Nishtar Hospital Multan from April 2017 to July 2018. Percentages, Chi square method, averages and standard deviations were in use for the expression of the collected information.

Results: Out of total 650 females with pregnancy, 6.90% (n: 45) females found with gestation diabetes mellitus in the period of this work. We found a correlation between gestation diabetes mellitus and increasing age of the patient, the history of the family and BMI (Body Mass Index), while there was no correlation present among gestation diabetes mellitus with rate of pregnancy, pregnancy number, amount of total children and live births.

Conclusion: Advanced patient's age, high BMI and past history of the family with diabetes mellitus are some of the risk factors of gestation diabetes mellitus as interrogated by this research work.

KEY WORDS: Pregnancy, Mellitus, Interrogated, Gestation Diabetes, Cortisone, Hypertension, Factors.

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INTRODUCTION:

GDM is the abnormality of glucose tolerance with any extremity happening for the very time or diagnosed at the time of pregnancy [1, 2]. The range of occurrence of the gestation diabetes mellitus in the world is from 1% to 14% [3-7]. Diabetogenic impact at the time of pregnancy plays an important part in formation of gestation diabetes mellitus where the PLH (Placental Lactogenic Hormone) of human being release from the placenta at the time of pregnancy causes the desensitization of the insulin which leads to the rise in the levels of blood glucose especially at the time of 2nd and 3rd trimesters of pregnancy [8]. It also rises the levels of the growth hormones as cortisone, estrogen & progesterone which plays an important part for the resistance to insulin [6, 7].

Various other features as age of the pregnant female, family past history, disposition of gene, fatness and hypertension are the associated risk factors of gestation diabetes mellitus [1, 9]. Gestation diabetes mellitus can cause various problems, if managed improperly, for both baby and mother at the time of pregnancy or after the delivery [10-12]. Gestation diabetes mellitus has an association with the other states as pre-eclampsia, macrosomia of fetal, hyperbilirubinemia, psychological retardation, and trauma of birth & mortality of neonate [2, 10-12]. So, early diagnosis and gestation diabetes mellitus treatment are very vital for the health of mother as well as fetal. The aim of this research work was to assess the occurrence of this issue and its relevant risk factors.

METHODS:

A sum of 650 females with pregnancy was the participants of this research work. The screening of these patients carried out with the help of random sampling method who visited the OPD of the Nishtar Hospital Multan. The duration of the research was

from April 2017 to July 2018. A form was in use for the collection of the information for the elaborated traits of the females suffering from diabetes. This form was the production of the expert organizers of this research work. Ten information were available on the form about demography, social status traits about the diabetes as age of the patient, qualification, job status, pregnancy number, number of children, planning between pregnancies, past background information in the family about diabetes, the status of the gestation diabetes mellitus in the last delivery & the outcome of the tolerance test.

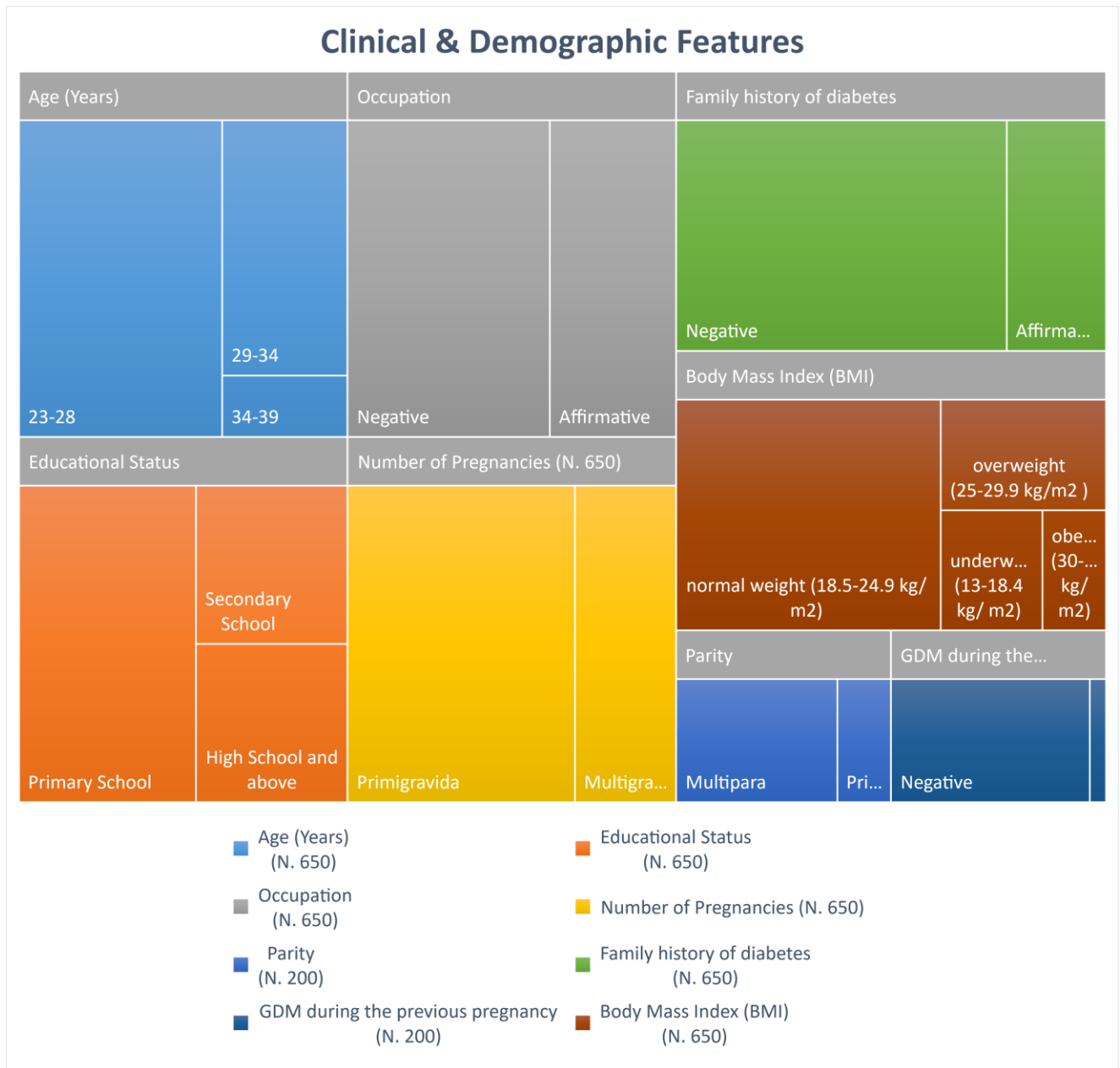
At the time of this study, fifty-gram OGTT (Oral Glucose Tolerance Test) carried out between 24 & 28 pregnancy weeks and 2nd hundred-gram OGTT performed to those patients found with a glucose amount of equal or greater than 135.0 mg/dl in accordance with the detection standard of ACOG (American Congress of Obstetricians & Gynecologists) [13]. The patients with 2 or more higher outcomes of tests found with the gestation diabetes mellitus. SPSS V.17 was in use for the analysis of the collected information. Chi square method was in use for the comparisons of information. The ethical committee of the hospital gave the approval for the conduction of the research work. Every patient gave the written willing to participate in the study.

RESULTS:

About one third (61.80%) patients found with age between 23-28 years and 53.80% patients found with only primary education. About 70.0% patients were bearing their first pregnancy. Most of the multigravida females were available as multiparous (75%). Most of the females found with no family history of diabetes (76.90%) as elaborated in Table-1.

Table-I: Demographic and Clinical Characteristics.

Characteristics	N	%	
Age (Years) (N. 650)	23-28	402.0	61.80
	29-34	200.0	30.80
	34-39	48.0	7.40
Educational Status (N. 650)	Primary School	350.0	53.80
	Secondary School	150.0	23.10
	High School and above	150.0	23.10
Occupation (N. 650)	Affirmative	250.0	38.50
	Negative	400.0	61.50
Number of Pregnancies (N. 650)	Prim gravida	450.0	69.20
	Multigravida	200.0	30.80
Parity (N. 200)	Primi para	50.0	25.00
	Multipara	150.0	75.00
Family history of diabetes (N. 650)	Affirmative	150.0	23.10
	Negative	500.0	76.90
GDM during the previous pregnancy (N. 200)	Affirmative	15.0	7.50
	Negative	185.0	92.50
Body Mass Index (BMI) (N. 650)	underweight (13-18.4 kg/ m ²)	80.0	12.30
	normal weight (18.5-24.9 kg/m ²)	400.0	61.50
	overweight (25-29.9 kg/m ²)	120.0	18.50
	obese (30-34.9 kg/m ²)	50.0	7.70

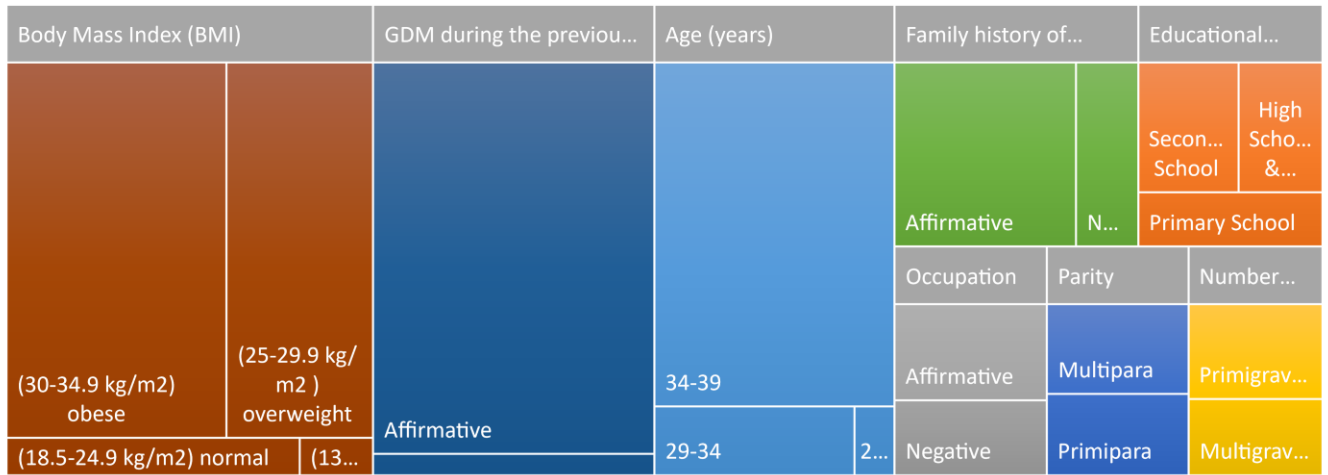


The discovery of diabetes confirmed in forty five females out of 650 pregnant females. The occurrence of diabetes was 6.90%. Different variables associated with the GDM were age of the patient, BMI (Body Mass Index) of the patient, past family background of diabetes & past diabetes in the last pregnancy (Table-2). The amount of the patients suffering from the gestation diabetes mellitus was 2.50%, 12.50%, & 75% in between 23 to 28, 29 to 34, and 34 to 39 years group of age correspondingly. We also found that there was no effect of job status, qualification of the patient, pregnancy number & number of children on the danger of gestation diabetes mellitus as mentioned in Table-2.

Table-II: Distribution of GDM Frequency by Demographic and Clinical Characteristics.

Characteristics		GDM (%)		Total (%)	Chi Square	p value
		Yes	No			
Age (years)	23-28	2.50	97.50	100	1.4550	0.3450*
	29-34	12.50	87.50			
	34-39	75.00	25.00			
Educational status	Primary School	10.50	89.50			
	Secondary School	13.60	96.40		8.0010	0.6780
	High School & above	11.40	88.60			
Occupation	Affirmative	15.60	84.40		9.9880	0.9780
	Negative	12.20	87.8 100.0			
Number of pregnancies	Prim gravida	13.50	86.50		7.6240	0.6450
	Multigravida	10.90	89.10			
Parity	Primi para	12.30	87.70	5.4560	0.5540	
	Multipara	13.50	86.50			
Family history of diabetes	Affirmative	35.00	65.00	3.4560	0.2220*	
	Negative	12.00	88.00			
GDM during the previous pregnancy	Affirmative	100.00	0.00	7.4560	0.0020*	
	Negative	5.50	94.50			
Body Mass Index (BMI)	(13-18.4 kg/ m ²) under weight	2.50	97.50			
	(18.5-24.9 kg/m ²) normal	10.00	90.00	1.7990	0.2340*	
	(25-29.9 kg/m ²) overweight	50.00	50.00			
	(30-34.9 kg/m ²) obese	75.00	25.00			

GDM Distribution and Demographic Features



- Age (years)
- Educational status
- Occupation
- Number of pregnancies
- Parity
- Family history of diabetes
- GDM during the previous pregnancy
- Body Mass Index (BMI)

DISCUSSION:

Gestation diabetes mellitus is the level of intolerance to glucose with a start at the time of pregnancy & it usually starts in the 2nd & 3rd pregnancy trimesters due to the release of PHL after the 14th week of pregnancy [2, 8]. The intolerance to glucose and fatness may perform a vital role in the formation of gestation diabetes mellitus [9, 14, 15]. Gestation diabetes mellitus have the ability to raise problems related to pregnancy as abortion & pre-eclampsia and some complications for fetal as macrosomia & hyperbilirubinemia. This also increases the amount of the deaths of neonatal and cesarean surgeries [2, 9, 10]. So, the screening of the gestation diabetes mellitus is very vital for the maternal as well as fetal health. Some professionals viewed that regular screening of gestation diabetes mellitus is not compulsory because of the non-availability of the authentic information that display a high rate of complications among the females suffering from gestation diabetes mellitus [1, 8, 13].

The screening of the gestation diabetes mellitus should be carry out for every female with pregnancy between 24-28 pregnancy week in accordance with the criteria of WHO [8]. According to ADA (American Diabetes Association), there should be a screening of GDM in the first trimester is important for the females with high risks and screenings in other trimesters are important for other females [1, 13]. The occurrence of the gestation diabetes mellitus is different in various research works. ADA reported an amount of 4.0% in 2004 while occurrence rates between 4.90% & 12.80% were in the reports of high risk people in United States of America [1]. Brody in 2003 stated that 1% to 6% females developed gestation diabetes mellitus which was much same to our results [6].

The diagnosed incidence of gestation diabetes mellitus in our people i.e.6.90%, which is greater than the past studies on population of Turkey with a range of 1% to 5%. This disparity of the results was due to the variations of the sample size and the age of patients I those studies. The data on the same subject matter showed that factors as of factors as age of the patients, fatness, and a previous past history of diabetes can raise the danger of gestation diabetes mellitus [9, 14-19]. The age of the patient, body mass index, diabetes history, previous diabetes during pregnancy appeared as the vital factors of risks in this research work. The research works of Turgut & Dunhbai stated the support for the part of high age in the formation of gestation diabetes mellitus [18, 19]. In past research work, some other factors of risk for gestation diabetes

mellitus included past background of the diabetes in the close relatives & past of the gestation diabetes mellitus in the last pregnancies [19]. In the same manner, the studies of Di Cianni & Kaya concluded the high age and body mass index as the main risk factors of gestation diabetes mellitus [20, 21]. The conclusion of our work is in agreement with the findings of these studies.

CONCLUSIONS:

The results showed that 6.90% females were suffering from GDM. There was a clear relation between the age of the patient, history of the family diabetes & past diabetes status in pregnancy. The conclusions shows the importance of the screening test for the females who visited during their pregnancy tenure to decrease the worst outcome of delivery. Females with the maximum associated factors as high age, family history and high BMI should visit for regular checkups. Future research works on large sample size are the requirement to generalize the findings of this research work.

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