

## Effect of Antenatal Anxiety on Future Pregnancy Plan Among Gestational Diabetic Women



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### 1-ABSTRACT

**Background:** Gestational Diabetes Mellitus (GDM) is one of the most common medical health problems that may occur during pregnancy and may lead to a range of short and long term maternal and fetal as well as neonatal complications. Up to 60.8% of women with GDM may have anxiety. **Aim of the study:** Assess the effect of antenatal anxiety on future pregnancy plan among gestational diabetic women. **Method:** A mixed research study design used on 151 pregnant women according to inclusion criteria. The study was conducted at Obstetrics and Gynecology Clinic at Kafr-Saqr Central Hospital. **Tool of data collection:** A Structured Interview Questionnaire consist of four parts include general characteristics, obstetrics history, Pregnancy-Related Anxiety -Revised-2 (PRAQ-R2) and opinion of pregnant women regarding acceptance to be pregnant in the future. **Results:** Shows that the studied women were fear of giving birth with Mean  $\pm$ SD (9.93  $\pm$ 3.47), worried about bearing a physically or mentally handicapped child with the highest Mean  $\pm$ SD (15.17  $\pm$ 4.31) and concerned about their own appearance with Mean  $\pm$ SD (9.05  $\pm$ 2.34). Also, total Mean  $\pm$ SD of anxiety level of studied gestational diabetic women were (34.15  $\pm$ 6.02). 81.5 of studied pregnant women who want to be pregnant again in the future were eating healthy diet, (75.9%) maintained a healthy weight. **Conclusion:** Total Mean  $\pm$ SD of anxiety level of studied gestational diabetic women were (34.15  $\pm$ 6.02) & more than one-third of studied women want to be pregnant in future and majority of them who want to be pregnant again in the future were eating healthy diet. **Recommendations:** Design simple brochures for women with history of gestational diabetes mellitus about anxiety and its effects on future plane through antenatal classes.

**Keywords:** *Antenatal Anxiety, Future Pregnancy, Gestational Diabetes Mellitus.*

### 2-Introduction:

Gestational diabetes mellitus (GDM) is an abnormal glucose intolerance diagnosed for the first time during pregnancy. It is considered one of the frequent complications during gestation (Ying et al., 2024). Also, it is a state of hyperglycemia due to insufficient insulin secretion and/or insulin resistance that occurs during pregnancy (Semnani-Azad et al., 2024).

The exact causes of GDM are still unclear but there are several risk factors that lead to GDM among pregnant women (Craig, Sims, Glasziou & Thomas, 2020), such as, obesity, physical inactivity, advanced maternal age, multiparity, family history of type 2 diabetes mellitus (T2DM), and certain ethnicities, including Asians, a previous macrocosmic child, GDM in the previous pregnancy, and polycystic ovarian syndrome (PCOS) (Alduayji & Selim, 2023).

Anxiety is a psychological disorder whose main characteristics are widespread and persistent anxiety and recurring panic (Abrar et al., 2020), up to 60.8% of women with GDM may have mild or more anxiety. The incidence of anxiety in women with GDM was 59.07%, and we have found

that for GDM women with abnormal pregnancy and cesarean section history, primi-gravida, lower education level, and less monthly income, they have higher risk for anxiety (Fu et al., 2021). 66.3% of pregnant women's anxiety comes from lack of understanding of their own diseases and related knowledge. The main anxiety problem is worry about fetal health (Wang et al., 2020). The high glucose status of GDM patients will cause a series of adverse effects on the fetus (Zhou et al., 2020).

Therefore, compared with normal pregnant women, GDM patients pay more attention to the health of the fetus, which causes great psychological pressure. Furthermore, pregnancy-related anxiety level of women with first pregnancy is higher than that of multiparas; the potential reasons may be the fact that the primi-paras have not experienced pregnancy or childbirth, and the uncertainty of illness effects on the health of the fetus (Fu et al., 2021).

## 2.1 Significance of the Study

Gestational diabetes mellitus (GDM) is a major public health **problem**, affecting about one in every six pregnancies globally (**International Diabetes Federation, 2020**). GDM is associated with adverse short-and long-term health outcomes for the woman and her offspring. The increased incidence of gestational diabetes and its complications has been developing serious complication for maternal and fetal worldwide particularly in developing countries. It is predicted that the number of diabetic women is projected to double by 2030, which will also affect pregnant women (**American Diabetic Association, 2019; Khadivzadeh et al., 2016**).

The regional standardized prevalence of GDM were (7.1%) in North America and Caribbean, (7.8%) in Europe, (10.4%) in South America and Central America, (14.2%) in Africa, (14.7%) in Western Pacific, (20.8%) in South-East Asia and (27.6%) in Middle East and North Africa. The standardized prevalence of GDM in low-, middle- and high-income countries were (12.7%, 9.2% and 14.2%), respectively (**Wang et al., 2022**). regarding the prevalence of GDM in the Arab world, it represents as (20%) in the united Arab emirate (UAE), in Saudi Arabia (12.5%), in Bahrain 13.5% and medium and high level were observed in Iran (4.7 - 8.9%). In Egypt, the prevalence of GDM among pregnant women is (2 - 14 %) of all pregnancies (**EL-Nagar et al., 2019**).

There is a need to more intensive and long-term lifestyle counseling, possibly supported by e-health and social media materials, might be required to empower pregnant women with experience of GDM to adapt pregnancy behaviors and maintain healthy lifestyle behaviors that decrease the risk of GDM recurrence and the consequential adverse maternal and infant health outcomes (**Ali et al, 2021**). Due to limited local data on anxiety, especially during gestational diabetes and we need to know magnitude of the problem in the local community. So, this study was conducted.

## 2.2 Aim of the Study

The present study aimed to assess effect of antenatal anxiety on future pregnancy plan among gestational diabetic women.

## 2.3 Research Questions

What is the effect of antenatal anxiety on future pregnancy plan among gestational diabetic women?

## 3- Method:

### 3.1 Design

A mixed research study design (descriptive and qualitative) used. Descriptive qualitative research design is a type of research design that aims to obtain information to systematically describe a phenomenon, situation, or population.

### 3.2 Setting

This was conducted at Obstetrics and Gynecology Clinic at Kafr-Saqr Central Hospital that provides general health services during different period of women life like pregnant women during antenatal period also, provide services for gynecological patients and family planning. It consists of three floors: The first floor consists of the reception department, radiology department, laboratories department, clinics department (dermatology, nose and ear, children, ophthalmology, family planning, obstetrics and gynecology, dental, orthopedics) and the hospital director's office. The second floor consists of the intensive care department, the dialysis department, and the chief nursing office. The third floor consists of the sterilization department, the nursery department, the internal department, and the operations department. Obstetrics and Gynecology Clinic opens daily from Saturday to Wednesday from (9:00 am to 2:00 pm), the hospitals receive about 15 pregnant women per day.

### 3.3 Sample Type

Purposive study used.

### 3.4 Study Subjects

The study sample included 151 pregnant women who were attending to Obstetrics and Gynecology Clinic at Kafr-Saqr Central Hospital according to the following criteria.

### 3.5 Inclusion Criteria

- History of previous GDM
- Multi Para women
- Childbearing period
- Second and third trimester

### 3.6 Exclusion Criteria

- Woman with mental or psychological problem
- Woman with type I and type II diabetes mellitus

### 3.7 Sample Size Calculation

Based on data from literature (**Ali et al., 2021**), to calculate the sample size with precision/absolute error of 5% and type 1 error of 5%, sample size is calculated according to the following formula,

$$N = \frac{(Z_{1-\alpha/2})^2 \cdot P(1-P)}{d^2}$$

Where,  $Z_{1-\alpha/2}$  at 5% type 1 error ( $p < 0.05$ ) is 1.96, P is the expected proportion in population based on previous studies and d is the absolute error or precision. Therefore, sample size

$$N = \frac{(1.96)^2 \cdot (0.501)(1-0.501)}{(0.08)^2} = 150.1.$$

Based on the formula, the total sample size required for the study is 151.

### 3.8 Data Collection Tool

One tool was used for data collection:

Structured Interviewing Questionnaire. This tool was designed by the researcher after reviewing the national and international relevant literature (Ali et al., 2021). It consisted of three parts:

**Part (1) General Characteristics of gestational diabetic women:** such as age, residence, level of education, occupation, income & BMI.

**Part (2) Obstetrics History of gestational diabetic women:** such as gravidity, previous abortions, number of abortions, gestational age, planned pregnancy, previous pregnancy complications, types of complication, use of previous contraceptive method.

**Part (3) Pregnancy-Related Anxiety —Revised-2 (PRAQ-R2):** The PRAQ-R2 was adopted by (Huizink et al., 2016) to collect concern, worries and fear during gestational diabetes management. It has three domains, **first domain** is fear of giving birth which have 3 questions like (anxious about the delivery) ranging from 3 to 15. **Second domain** is worries about bearing a physically or mentally handicapped child which have 4 questions like (sometimes I think that my child will be in poor health or will be prone to diseases) ranging from 4 to 20. **The third domain** is concern about own appearance which have 3 questions like (worried about my unattractive appearance) ranging from 3-15.

### Scoring System

This tool has 10 questions, each question have 5 alternative answers (absolutely not relevant, hardly ever relevant, sometimes relevant, reasonably relevant and very relevant) which have scores from 1 to 5 respectively. The total score of pregnancy related anxiety is the sum of the scores of the individual items, the total score (ranging from 10 to 50 points) and the sum of item scores that constitute each of the three subscales can be calculated. Higher scores are assumed to indicate increased Pregnancy-Related Anxiety (PrA) intensity.

**Part (4):** opinion of pregnant women regarding acceptance to be pregnant in the future and action take for Gestational diabetic women want to be pregnant in future pregnancy such as preconception care, etc.....

### Validity of the study tool:

The tools were reviewed by three juries of woman's healthy and midwifery experts from the faculty of nursing (professor/ Hanan Elsayed, assist professor/ Aml Youssef and assist professor/ Eman Fadel ) in Mansoura University. These experts assessed the tools for clarity, relevance, application, comprehensive, and understanding. Validity according to their comment's modification was considered as certain sentences were simplified to be easily understood by the women such as physical activity domains.

### Field work

The actual field work of the study was conducted for 6 months period from beginning of January 2023 to end of June 2023. The study was carried out through two stages; Preparatory stage included three phases; (administrative phase, reviewing literature and developing tools phase and pilot phase) and Implementing stage included three phases (data collection, data analysis and ethical considerations phases).

### I Preparatory stage

- 1. Administrative phase:** Obtained all approval form to conduct the study from approval of head of department, Research Ethics Committee and director of hospital after explaining the aim and nature of the study.
- 2. Reviewing literature and developing study tools phases:** The researcher reviewed the national and international literature on gestational diabetes women experience and future behaviors. The review collected was a guide for developing the tools for data collection and the tools were translated into Arabic.
- 3. Pilot Study:** The pilot study was conducted prior to data collection on 10% (15 gestational diabetic women) to evaluate the clarity and applicability of these tools. Based on the findings of the pilot study, necessary modifications done, and the pilot study excluded from the study sample.

### II Implementing Stage

#### 1. Data collection phase

- Data were collected from Obstetrics and Gynecology clinic at Kafr-Saqr Central Hospital. The researcher attended the

previously mentioned setting three days per week (Sunday, Tuesday and Thursday) from 9am to 2pm until the calculated sample size was obtained.

- The researcher introduced herself to the head of the Obstetrics and Gynecology clinic at Kafr-Saqr Central Hospital and took written permission to conduct the study after clarification of the aim of the study.
- Then the researcher reviewed registered book of gestational diabetic women who were attending Obstetrics and Gynecology clinic at Kafr-Saqr Central Hospital to select participants according to their inclusion criteria.
- The researcher introduced herself to gestational diabetic women, explanation of the aim and method of the study were done to obtain their acceptance, cooperation and relief fear and start rapport with cases as well as their informal consent and the researcher assured confidentiality of the collected data.
- The researcher interviewed each gestational diabetic woman to collect data on general characteristics, obstetric history, and pregnancy-related anxiety by using a structured interview questionnaire and taking 15 minutes to complete the questionnaire.
- Also, the researcher assessed previous pregnancy behaviors during their experience with gestational diabetes mellitus, previous experience of gestational diabetes mellitus affect current pregnancy care and pregnant women opinion about acceptance to be pregnant in future, pass their experience with gestational diabetes mellitus again and action take for Gestational diabetic women want to get pregnant in future pregnancy by using structured interviewing questionnaire and take 15 minutes to complete questionnaire.
- At the end of data collection, the total number of gestational diabetic women from Obstetrics and Gynecology clinic at Kafr-Saqr Central Hospital were 151 women, with daily rate from 3-4 case per day.
- The researcher stayed about 30-40 minutes with every pregnant woman to complete the questionnaire.
- The collected data was coded then stored.
- The results were then assessed and analyzed.

#### Statistical Analysis

All statistical analyses were performed using SPSS for Windows version 20.0 (SPSS,

Chicago, IL). Continuous data were normally distributed and were expressed in mean  $\pm$  standard deviation (SD). Categorical data were expressed in numbers and percentages. One-way analysis of variance (ANOVA) test was used for comparison among more than two variables with continuous data. The chi-square test (or Fisher's exact test when applicable) was used for the comparison of variables with categorical data. A correlation coefficient test was used to test for correlations between two variables with continuous data. The reliability (internal consistency) test for the questionnaires used in the study was calculated. Statistical significance was set at  $p < 0.05$

#### 4- Results

**Table 1.** shows that (76.2%) of studied gestational diabetic women, their age ranged from 25-35 years old with Mean  $\pm$ SD (30.1  $\pm$ 4.7). Regarding residences (60.9%) were from rural. (58.3%) had a university education, and (43.0%) were house wife. Regarding income, (57.9%) had enough income. Regarding BMI, (49.9%) of studied gestational diabetic women was healthy.

**Table (2).** shows that (61.6%) of studied gestational diabetic women were 2-3 gravida, (64.2%) had no previous abortions. Also, (57.6%) were more than 30 weeks of gestational age Mean  $\pm$ SD (31.5  $\pm$ 6.4). Additionally, (39.7%) were planned pregnancy. and (80.1%) had previous pregnancy complications. Also, there were (74.2%) of studied gestational diabetic women were use of previous contraceptive methods.

**Table (3).** shows that 76.2% of studied women were very relevant anxious about the delivery. Fear that the child will be born incomplete or die during or immediately after birth of studied gestational diabetic women was very relevant representing (44.4%), (37.1%) of studied gestational diabetic women were sometimes afraid that the child is mentally handicapped or suffers from brain damage. Also, (43.0%) of studied women were sometimes worried about excessive weight gain.

**Table (4).** shows that studied gestational diabetic women were fear of giving birth with Mean  $\pm$ SD (9.93  $\pm$ 3.47), Worried about bearing a physically or mentally handicapped child with the highest Mean  $\pm$ SD (15.17  $\pm$ 4.31), and were concerned about their appearance with Mean  $\pm$ SD (9.05  $\pm$ 2.34). Also, the mean  $\pm$ SD of anxiety level of studied gestational diabetic women was (34.15  $\pm$ 6.02).

**Figure (1).** Clarifies that the majority of studied pregnant women who want to get pregnant

again in the future were eating healthy diet. Also, (75.9%) maintain a healthy weight

again in the future were eating healthy diet. Also, 75.9% maintain a healthy weight.

**Figure (2).** Clarifies that the majority of studied pregnant women who want to get pregnant

**Table 1.** Number and Distribution of the General Characteristics of Studied Gestational Diabetic Women (n=151)

<b>Table 1 Number and Distribution of the General Characteristics of Studied Gestational Diabetic Women (n=151)</b>		
	N=151	%
<b>Age</b>		
> 25	15	9.9
25-35	115	<b>76.2</b>
< 35	21	13.9
<b>Mean ±SD</b>	<b>30.1 ±4.7</b>	
<b>Residence</b>		
Rural	92	60.9
Urban	59	39.1
<b>Educational Level</b>		
Unable to read and write	6	4.0
Basic education	13	8.5
Secondary education	33	21.9
University education	88	<b>58.3</b>
Postgraduate education	11	7.3
<b>Occupation</b>		
House wife	65	43.0
Manual work	19	12.6
Trades/business	19	12.6
Employee	48	31.8
<b>Income</b>		
Insufficient (<4000)	29	19.2
Sufficient (4000-6000)	87	<b>57.6</b>
Sufficient and save (>6000)	35	23.2
<b>BMI</b>		
Underweight(<18.5)	10	6.6
Healthy(18.5 – 24.9)	75	<b>49.7</b>
Overweight (25 – 29.9)	31	20.5
Obese (30 and 39.9)	23	15.3
Extremely obese(>40)	12	7.9

**Table 2.** Number and Distribution of the Obstetric Data of Studied Gestational Diabetic Women (n= 151)

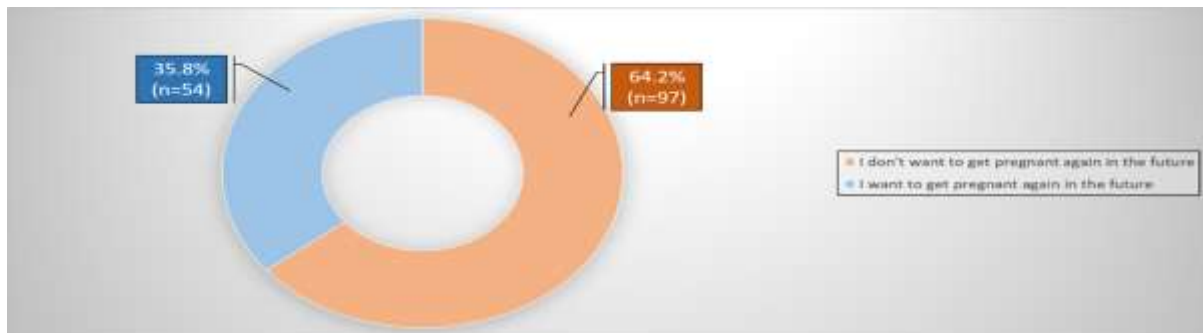
Number and Distribution of the Obstetric Data of Studied Gestational Diabetic Women (n= 151)		
	n=151	%
<b>Gravidity</b>		
2 – 3 gravida	93	<b>61.6</b>
More than 3	58	38.4
<b>Previous Abortion</b>		
No	97	<b>64.2</b>
Yes	54	35.8
<b>Number of Abortions (n=54)</b>		
1-2	46	<b>85.2</b>
3-4	8	14.8
<b>Gestational Age (week)</b>		
21-29	64	42.4
More than 30	87	<b>57.6</b>
Mean $\pm$ SD	<b>31.5 <math>\pm</math>6.4</b>	
<b>Planned Pregnancy</b>		
No	91	<b>60.3</b>
Yes	60	39.7
<b>Previous Pregnancy Complications</b>		
No	30	19.9
Yes	121	<b>80.1</b>
<b>Types of Complications (n=121)</b>		
Gestational Hypertension	73	<b>60.3</b>
Others	48	39.7
<b>Use of Previous Contraceptive Method</b>		
No	39	25.8
Yes	112	<b>74.2</b>

**Table 3.** Number and Distribution of Studied Gestational Diabetic Women According to Pregnancy-Related Anxiety (n=151)

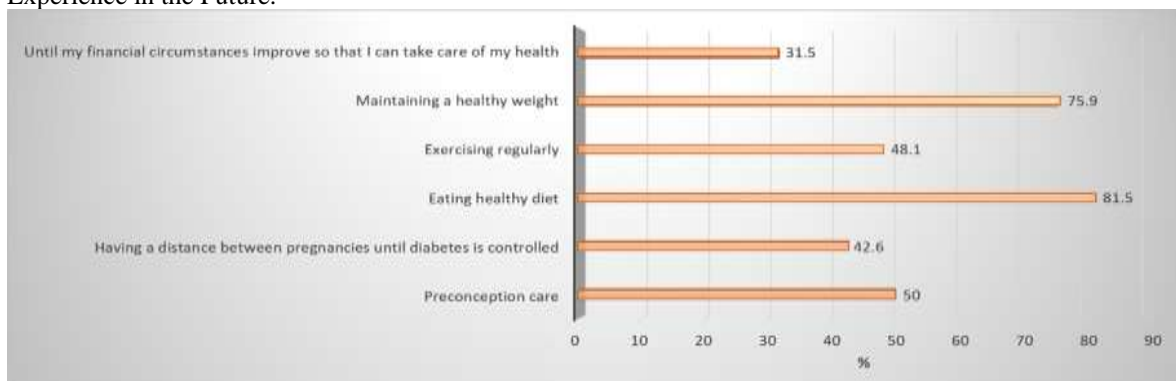
Number and distribution of studied gestational diabetic women according to Pregnancy-Related Anxiety (n=151)					
	Absolutely not relevant	Hardly ever relevant	Sometimes relevant	Reasonably relevant	Very relevant
	N (%)	N (%)	N (%)	N (%)	N (%)
<b>Fear of giving birth</b>					
Anxious about the delivery	0(0.0)	0(0.0)	9(6.0)	27(17.9)	<b>115(76.2)</b>
Worried about the pain of uterine contraction and pain during delivery	67(44.4)	12(7.9)	22(14.6)	12(7.9)	38(25.2)
Worried about not being able to control during labor and fear from screaming	<b>67(44.4)</b>	13(8.6)	20(13.2)	13(8.6)	38(25.2)
<b>Worries about bearing a physically or mentally handicapped child</b>					
Sometimes I think that my child will be in poor health or will be prone to diseases	1(0.7)	15(9.9)	52(34.4)	17(11.3)	66(43.7)
Afraid that the child is mentally handicapped or suffer from brain damage	10(6.6)	18(11.9)	<b>56(37.1)</b>	13(8.6)	54(35.8)
Afraid that my baby will have physical problems or worry that something will not be okay with the child	0(0.0)	15(9.9)	53(35.1)	12(7.9)	71(47.0)
Fear that the child will be born incomplete, or die during or immediately after birth	3(2.0)	16(10.6)	53(35.1)	12(7.9)	<b>67(44.4)</b>
<b>Concern about own appearance</b>					
Worried about my unattractive appearance	22(14.6)	13(8.6)	57(37.7)	43(28.5)	16(10.6)
Worried about the fact that I won't get back in shape after giving birth	31(20.5)	40(26.5)	69(45.7)	4(2.6)	7(4.6)
Worried about more excessive weight gain	6(4.0)	10(6.6)	<b>65(43.0)</b>	44(29.1)	26(17.2)

**Table 4.** Mean and Standard Deviation of Studied Gestational Diabetic Women regarding Pregnancy-Related Anxiety and total level (n=151)

Table 4. Mean and Standard Deviation of Studied Gestational Diabetic Women regarding Pregnancy-Related Anxiety and total level (n=151)					Mean $\pm$ SD
Fear of giving birth					9.93 $\pm$ 3.47
Worries about bearing a physically or mentally handicapped child					15.17 $\pm$ 4.31
Concern about own appearance					9.05 $\pm$ 2.34
<b>Total Anxiety Level</b>					<b>34.15 <math>\pm</math>6.02</b>



**Figure (1).** Opinion of Studied Gestational Diabetic Women About Acceptance to be Pregnant and Pass This Experience in the Future.



**Figure (2).** Action Taken by Studied Gestational Diabetic Women Who Want to be Pregnant in Future Pregnancy (n=54).

## 5- Discussion

The current study aimed to assess the effect of antenatal anxiety on future pregnancy on future plan among gestational diabetic women, this aim was achieved through the present study findings which revealed that more than one-third of studied gestational diabetic women want to be pregnant in the future.

Regarding gravidity, the current study found that less than two third of studied gestational diabetic women was 2-3 gravida. this study finding agree with a study done by

**baharvand, anbari and hamidi (2022)** studied perceived social support in pregnant women with gestational diabetes attending hospitals in western Iran compared to healthy controls and its relationship with perceived anxiety and revealed that less than two thirds of the participants were 2-3 gravida. This may be due to more than three-quarters of studied gestational diabetic women were between 25-35 years old, and the age range of 19 to 45 years covers a significant portion of a woman's reproductive years.

While the present study results were contraindicated with **Mukona et al. (2019)** studied Knowledge of Gestational Diabetes Mellitus and Self Care Practices in Pregnancy and reported that less than half of gestational diabetic women were 2-3 gravida.

Concerning previous abortions, the current study findings revealed that less than two-thirds of studied gestational diabetic women had no previous abortions. This study results were consistent with the study done by **Marouf& Ismail (2023)** on Eating Habits and Food Consumption among Pregnant Women with and without Gestational Diabetes Mellitus which reported that less than two-thirds had no previous abortion. Also, this finding was concerning with a study reported by **Shama et al. (2020)** studied on the clinical association between gestational diabetes mellitus and quality of life among women which displayed that two-thirds of studied women had no previous abortion. This may be due to gestational diabetes mellitus had no effect on abortion.

Regarding gestational age, the current study findings revealed that more than half of studied gestational diabetic women were more than 30 weeks of gestational age. This study results were in agreement with a study done by **Bien, Pieczykolan, Korzynska-Pietas** and **Grzesik-Gasior (2023)** on Body Esteem and Self-Efficacy of Pregnant Women with Gestational Diabetes Mellitus and reported that studied gestational diabetic women were in rang 25–39. In my opinion, this may be due to gestational diabetes mellitus typically occurring in the second and third trimesters of pregnancy.

In addition, the current study findings revealed that more than one-third of studied gestational diabetic women were planned pregnancy. This finding were concerning with the study done by **Mirabelli et al., (2023)** studied Maternal Preconception Body Mass Index Overtakes Age as a risk factor for gestational diabetes mellitus and stated that more than one-third of pregnant women with gestational diabetes mellitus were in planned pregnancy. This may be due to more than half of studied gestational diabetic women were university-education aware of gestational diabetes complications.

This result was inconsistent with the study performed by **Yesilcnar, Kinci, Unver, and Sivashoglu (2023)** on Pregnancy-Related Anxiety and Prenatal Attachment in Pregnant Women with

Preeclampsia and/or Gestational Diabetes Mellitus which reported that three quarters of pregnant women with gestational diabetes mellitus had planned their pregnancy.

The study findings showed that the majority of studied gestational diabetic women had previous pregnancy complications. This result was consistent with the study conducted by **Ali et al., (2021)** studied cross-sectional analysis on the effect of gestational diabetes mellitus history on future pregnancy behaviors and reported that two-thirds of pregnant women with previous GDM had previous pregnancy complications. This due to gestational diabetes mellitus consequences.

These findings disagreed with the findings by **Ansarzadeh, Salehi, Mahmoodi, and Mohammadbeigi (2020)** studied a cross-sectional study on Factors affecting the quality of life in women with gestational diabetes mellitus and reported that more than two-thirds had no previous pregnancy complications. This may be due to the occurrence and severity of complications associated with gestational diabetes can vary across different populations and countries due to cultural differences.

Regarding the use of previous contraceptive methods, the present study findings reported that less than three-quarters of studied gestational diabetic women use of previous contraceptive methods. This study findings are consistent with a study by **Ali et al. (2021)** and revealed that less than three-quarters of studied gestational diabetic women used contraceptives. This may be due to most studied gestational diabetic women between 2-3 gravida. While the current study findings were in disagreement with **Boadu et al., (2022)** studied cross-sectional study on the prevalence and Risk Factors Associated with Gestational Diabetes Mellitus among Pregnant Women revealed that more than one-third reported using contraception.

Concerning the fear of giving birth, the current study findings revealed that less than a three quarter of studied gestational diabetic women were very anxious about the delivery. This study results were consistent with the study done by **Ali et al. (2021)** reported that more than two-thirds were worried about upcoming births. From the researcher's perspective, they may worry about complications such as high blood sugar levels, preterm labor, cesarean section, or the baby experiencing difficulties during birth. These concerns can lead to increased anxiety



about the well-being of both the mother and the baby.

Owing to worries about bearing a physically or mentally handicapped child, more than a third of studied gestational diabetic women were sometimes afraid that the child is mentally handicapped or suffers from brain damage. This is in harmony with a descriptive research design study done by **Hamed Mohamed & El nemer, (2018)** studied pregnancy related to anxiety among chronically ill women. And that more than half of them were severely worried about bearing a handicapped child. In my opinion, the increased risk of gestational diabetes can contribute to anxiety about the health outcomes child, especially more than half of the studied gestational diabetic women were highly educated.

Regarding the concern about their appearance, more than a third of studied gestational diabetic women were sometimes worried about their unattractive appearance. This is in line with a qualitative study by **Eades, France, and Evans (2018)**, about postnatal experiences, knowledge, and perceptions of women with gestational diabetes, which reported that more than a third of studied gestational diabetic women were worried about their appearance. In my opinion, this may be related to the diagnosis and management of gestational diabetic women, combined with the physiological changes during pregnancy, which can contribute to feelings of self-consciousness or concerns about their appearance.

**Owing to the future plan for future pregnancy**, the present study showed that more than one-third of the studied gestational diabetic women want to get pregnant again in the future. This was consistent with the study by **Mirabelli et al. (2023)** studied Maternal Preconception Body Mass Index Overtakes Age as a Risk Factor for Gestational Diabetes Mellitus and told that more than one-third of pregnant women with gestational diabetes mellitus were planned pregnancy. This may be due to gestational diabetic women have previous experience and delivered healthy babies. They have successfully managed their condition during pregnancy. Also, the nature of females want to have children.

**Regarding actions taken for Gestational diabetic women** who want to be pregnant in the future, the majority of studied pregnant women who want to be pregnant again in the future were eating a healthy diet. This agreed with a qualitative study by **Sun et al. (2023)** revealed those pregnant women who had a plan for future pregnancy said "I

had to eat better than before, the fruit that I had as a dessert after meals... I can't eat it anymore... I'm upset, but I have to try. No, I mean, I definitely want to have a change in eating habits. Above all, it is for the baby's health". This may be due to women who have experienced pregnancy and are planning for another pregnancy may have gained knowledge about the importance of a healthy diet during pregnancy.

## 6- Conclusion

This study concluded that the total Mean  $\pm$ SD of anxiety level of studied gestational diabetic women was (34.15  $\pm$ 6.02), less than a three quarter of studied gestational diabetic women were very relevant anxious about the delivery & more than a third of studied gestational diabetic women were sometimes relevant worried about more excessive weight gain. Also, more than one-third of studied gestational diabetic women want to be pregnant in the future and the majority of studied pregnant women who want to be pregnant again in the future were eating healthy diet.

## 7- Recommendations

Pregnant women should be educated about anxiety and its effects future pregnancy plans as a part of routine antenatal care for diabetic pregnant women

## Further study

Apply another study on a large sample size of another sitting regarding gestational diabetic experiences and anxiety among pregnant women.

## Acknowledgment

The researcher might want to thank all members for their participation.

## Conflict of Interests

The authors state that there is no conflict of interests regarding this study.

## 8- References

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