



African Journal of Biological Sciences



Research Paper

Open Access

The Knowledge of Pregnant Women Toward Gestational Diabetes Mellitus in Palestine – A Cross Sectional Study

Adam Mohammad Marawa'a

Faculty of Nursing, Arab American University, Palestine.

Corresponding author (*): Adam Mohammad Marawa'a

Email: a.marawaa1@student.aaup.edu

Article Info

Volume 6, Issue 8, April 2024

Received: 15 Feb 2024

Accepted: 12 March 2024

Published: 08 April 2024

Abstract

Introduction: Gestational diabetes mellitus (GDM) is a significant health concern during pregnancy, marked by hormonal changes leading to increased insulin resistance. This condition poses risks to both the expectant mother and the unborn child. **Objective:** The primary aim of this study was to assess the awareness among pregnant women about GDM and its risk factors. This evaluation was intended to contribute to reducing the prevalence and adverse impacts of GDM. The study also sought to provide foundational data to aid decision-makers in organizing initiatives to enhance pregnant women's understanding of GDM and its associated risks. **Methods:** A cross-sectional descriptive approach was utilized to evaluate the knowledge of pregnant women regarding GDM and its influencing factors. The research was conducted at the Palestinian Medical Complex and Salfit Hospital, encompassing 200 participants in total—71 from the former and 129 from the latter. To test the study hypothesis, statistical methods such as the one-way analysis of variance (ANOVA) and the independent sample T-test were employed. **Results:** The findings indicated that 51.5% of the participants possessed fair knowledge about GDM, 30.5% had good knowledge, and 18% had poor knowledge. Employment status emerged as a significant factor affecting GDM knowledge, while other elements like age, educational level, and gestational age did not show a notable impact. It was observed that 51.5% of respondents had an understanding of gestational diabetes, 48.5% were aware of the Oral Glucose Tolerance Test (OGTT), and 62.5% recognized the risks and complications associated with GDM. A higher level of education correlated with better knowledge. **Conclusion:** The study underscores a moderate level of awareness about GDM among pregnant women. It highlights the need for targeted educational interventions, particularly among certain demographics, to enhance understanding and management of GDM. The findings can guide health policymakers in developing effective strategies for education and prevention.

Key words: Pregnant Women; Pregnancy; Knowledge; GDM; Palestine

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Introduction

Gestational diabetes mellitus (GDM) is a common problem experienced by pregnant women, characterized by changes in hormones that result in raised insulin resistance. Pregnancy-induced

hypertension, cardioscopy, labor induction, premature rupture of the membranes, antepartum hemorrhage, preeclampsia, and postpartum hemorrhage are just a few of the signs and consequences that may arise from this (Lin et al., 2016). Additionally, Premature rupture of membranes (PROM), antepartum hemorrhage (APH), postpartum hemorrhage (PPH), labor induction, pregnancy-induced hypertension (PIH), and cardioscopy (CS) are among the conditions that might arise from GDM's detrimental effects on the developing fetus. Additionally, it increases the risk of a baby being admitted to the neonatal intensive care unit (NICU), developing macrosomia, growth retardation, congenital birth defects, and high birth weight (Howell, 2018). Furthermore, Growth retardation, congenital abnormalities, macrosomia, and premature birth are among possible outcomes of gestational diabetes mellitus. Furthermore, uncontrolled blood sugar during pregnancy may have long-term consequences, including type 2 diabetes (T2DM), retinopathy, and other health problems (Fitria et al., 2019).

The International Diabetes Federation (IDF) pointed out that approximately 15.8% of pregnancies worldwide engaged hyperglycemia, with roughly 83.6% of these cases being associated with GDM (Masood et al., 2021). Notably, 86.8% of hyperglycemia cases during pregnancy took place in nations with low and moderate incomes, where access to gestational care may be limited (Soares de Souza et al., 2022).

Pregnant women diagnosed with GDM are at an increased chance of faced with macrosomia, pre-eclampsia, hypertensive disorders (HTN) during pregnancy, cesarean sections (CS), and shoulder dystocia (Panaitescu & Peltecu, 2016). Additionally, GDM leads to increased prenatal and annual healthcare expenses, with expenses for delivery and newborn care also rising significantly (Danyliv et al., 2015). When considering the long-term effects, as well as maternal overweight, GDM, and macrosomia, they collectively impose a substantial financial burden on healthcare systems, with annual costs reaching \$1.8 billion in Asia, Australia, and Europe (Lenoir-Wijnkoop et al., 2015).

Notably, passive smoking during pregnancy can elevate the risk of GDM. A study in China found that exposure to passive smoking resulted in a nearly 1.4-fold increase in the risk of GDM, even after accounting for age, parity, BMI, ethnicity, education, and occupation (Na et al., 2022). A survey in India revealed limited awareness among rural women about GDM risk factors and potential outcomes for both mothers and unborn children (Bhavadharini et al., 2017).

Pregnant women's knowledge of gestational diabetes mellitus (GDM) is influenced by factors such as history, knowledge, living with medical professionals, multiple pregnancies, education, employment, and third trimester (Alharthi et al., 2018). Moreover, women in their third trimester and those with a family history of GDM tend to possess better knowledge about GDM (Thomas et al., 2020).

Maternal lipid metabolism undergoes changes during normal pregnancy, including alterations in de novo lipogenesis variables and elevated triglyceride levels, reflecting changes in energy consumption. These changes can impact maternal health management during pregnancy (Behboudi-Gandevani et al., 2019).

Studies conducted in South India and Belagavi, India, indicate that women are aware of the risks and consequences of GDM and understand the importance of maintaining a healthy lifestyle and a balanced diet for effective GDM management (Dhyani et al., 2018). In the West Bank regions of Palestine, a study investigated the quality of life of expectant mothers with GDM and found that working women had higher quality of life scores, with significant differences observed between education and job levels. However, no significant differences were identified based on the residence area (Khalil, 2023).

Improved understanding of GDM promotes self-care, early identification, and treatment, reducing complications. Simple lifestyle changes like physical activity and dietary control can help prevent complications (Kolivand et al., 2018). A study in Iran identifies four key themes for Iranian pregnant women with GDM: lifestyle, mental health, family support, and awareness, emphasizing the importance of comprehensive self-care programs (Shriraam et al., 2013).

Overall, the study's aim is to assess the knowledge of pregnant women regarding GDM and its risk factors in order to reduce the incidence of GDM and its associated complications.

Gestational diabetes can lead to complications for both mother and unborn child, including cesarean section, preeclampsia, postpartum hemorrhage, preterm birth, macrosomia, growth retardation, congenital anomalies, and long-term diabetes, retinopathy, and other issues (Fitria et al., 2019), Pregnant Palestinian women's awareness of GDM varies, and more research is required to assess this knowledge.

Regardless of how much pregnant Palestinian women knew about GDM and its risk factors, we were unable to uncover statistical findings based on our investigation using the Ministry of Health's website. Treatment for both the short- and long-term impacts of GDM can be costly (Herman et al., 1999). The average annual cost of therapy for type 2 diabetes in the United States is \$3500, while the cost of care for prenatal problems may reach up to US\$9000 during the first year of life.

The research questions include: What is the current level of knowledge regarding GDM and its associated risk factors among pregnant women? Additionally, the study examines if these women's professional fields and their knowledge of GDM are significantly correlated, and it also asks whether these women's backgrounds in different fields have an impact on how well-informed they are about GDM. Additionally, the study investigates the relationship between pregnant women's educational attainment and their knowledge of GDM, intending to ascertain if a greater educational attainment level is associated with a better comprehension of GDM.

The study of the present work aims to assess pregnant women's knowledge of GDM and its risk factors to reduce the incidence of GDM and its complications. It will also offer baseline data to higher authorities to plan an initiative to raise pregnant women's awareness of GDM and its risk factors. This paper is divided into three objectives. First, to assess how much pregnant women know about gestational diabetes mellitus (GDM), This involves determining how well-informed and aware they are of the situation. Second, by looking at how different demographic and personal aspects may affect participants' awareness of GDM, the study aims to investigate the relationship between participant characteristics and their knowledge of the illness. Finally, the study aims to ascertain the relationship between pregnant women's knowledge of gestational diabetes and any history of chronic illness, exploring the potential influence of past medical encounters on their understanding and interpretation of the condition.

Materials and Methods

Study Design

It was decided to investigate pregnant women's knowledge of GDM and the factors influencing their knowledge using a descriptive cross-sectional study design since this is the most suitable form of methodology for measuring knowledge and potential factors that affect it. The study was conducted in the Salfit Hospital in Salfit City and the obstetrics and gynecology clinics at the Palestinian Medical Complex (PMC) in Ramallah between October 2022 and December 2022. The clinics were chosen due to the majority of expectant mothers who monitor the fetus's growth and development throughout their pregnancy in these clinics.

Population

All participants who visited the obstetrics and gynecology clinics at PMC and Salfit Hospital during the data collection period are included in the population. Excluded expectant mothers who declined to sign the permission form and women who visited the clinics but were not pregnant.

Sampling and Sample Size

The sample for this study was obtained using the convenience sampling technique; it consists of 200 participants in total, 71 of whom were drawn from a clinic at PMC Hospital and 129 from a clinic at Salfit Hospital

Data Collection Tool

The researcher used a questionnaire modeled by Shriraam et al. (Shriraam et al., 2013), which contained three sections:

1. Demographic data, such as age, level of education, etc.
2. Chronic illness History, such as the history of DM, HTN, etc.
3. Knowledge about GDM, which includes risk factors, screening, treatment, and complications.

There were three possible answers: no, yes, and I don't know. Every right answer received a score of one, and each woman received a score out of a possible 14. Whereas zero to five represented inadequate understanding, six to ten represented reasonable knowledge, and 11–14 represented high knowledge of GDM.

Data Collection Procedure

Outlining the study's aims to participants is a crucial first step in the research process. It involves providing a thorough briefing on how to complete surveys after obtaining informed consent, ensuring participants understand the research purpose and their role. Emphasizing the importance of honest and accurate responses is vital, along with assurances of confidentiality and anonymity. Researchers must ensure participants understand why data is being gathered and the significance of the research's reliability and validity. This understanding is often confirmed through participants' signatures and providing them with detailed guidance on using the online survey platform. Researchers are typically available to address any participant queries. Once surveys are completed, they are collected and reviewed to ensure all questions are answered comprehensively. Maintaining the integrity and reliability of collected data is paramount. Researchers often cross-check participant data with information from alternate resources to verify accuracy, further solidifying the reliability of the gathered data.

Statistical analysis

The reliability coefficient for the knowledge of pregnant women toward the GDM scale in Table 1 indicates the internal consistency of the item. A Cronbach's alpha value of 0.826 for the knowledge of pregnant women toward GDM suggests a satisfactory level of internal consistency, meaning that the items in the scale measure a similar construct and are reliable for assessing the knowledge of pregnant women toward GDM in Palestine.

Table 1: The Reliability Statistics.

Cronbach's Alpha	N of Items
0.826	14

Software for analysis, SPSS version 21, was used. A software program called SPSS was used to perform statistical analysis, work with data, and create tables and graphs using descriptive statistical analysis, which included creating frequency tables and bar charts to visually represent the results. To summarize the data, means and standard deviations were employed to investigate the association between participants knowledge of GDM and demographic factors using a statistical significance threshold of $p < 0.05$. To assess the study hypothesis, further procedures included the one-way analysis of variance (ANOVA) and the independent sample t-test.

Ethical Considerations

Concerns concerning confidentiality were addressed throughout the study. We acquired implied agreement to the completion and return of the questionnaires, which stress free participation and the possibility to withdraw from the research at any time without penalty, and we used no names on the survey data collection materials. The information was only used for research purposes. To preserve anonymity, many procedures were taken in data collection, storage, and display.

Results and Discussion

The Demographic Data

In table 2 The demographic data of the respondents is depicted above; 64.5% of the women were from Salfit City. 41.5% of the women were between the ages of 26 and 30, 35% were between the ages of 31 and 40, and 23.5% were between the ages of 17 and 25. Fifty-five percent of the participants had a bachelor's degree.

Table 2. The study sample distribution according to their demographic information.

		Frequency	Percent %
Name of hospital	Palestinian Medical Complex	71	35.5%
	Salfit Hospital	129	64.5%
Age	17-25 years	47	23.5%
	26-30 years	83	41.5%
	31-40 years	70	35%
Gestational Weeks	1-12	57	28.5%
	13-27	75	37.5%
	28-40	68	34%
Level of education	Secondary school	73	36.5%
	Bachelor	110	55%
	Master or PHD degree	17	8.5%
Work field	Medical field	51	25.5%
	House wife	72	36%
	Other field	77	38.5%
Living with someone who work in medical field	Yes	40	20%
	No	160	80%

Regarding their employment, 36% of the participants were housewives, 38.5% were non-medical workers, and 25.5% said they were employed in the medical industry. In addition, 80% of respondents said they did not live with a medical professional, but 20% said they did live with someone in the medical industry. Regarding the gestational week of the respondents at the time of the questionnaire's completion, 34% reported being between the 28th and 40th weeks of pregnancy, 28.5% indicated they were participants between the first and 12th weeks, and 37.5% stated they were between the 13th and 27th weeks.

Participants History of Chronic Diseases

In Table 3 shows that 62.5% of participants do not live with a diabetic, 33.5% do not have GDM, 82% do not have diabetes, 95% do not have hyperlipidemia, 12.5% have HTN, and 12% have thyroid disease. Among participants, 66.5% know someone with GDM, and 67.5% have hypertension.

Table 3. Participants history of chronic diseases.

		Frequency	Percent %
Are you living with someone who has diabetes	Yes	75	37.5%
	No	125	62.5%
Know someone who had GDM	Yes	133	66.5%
	No	67	33.5%
Personal history of diabetes	Yes	36	18%
	No	164	82%
Personal history hyperlipidemia	Yes	19	9.5%
	No	181	90.5%
Personal history hypertension	Yes	25	12.5%
	No	177	87.5%
Personal history of thyroid disease	Yes	24	12%
	No	176	88%

A bar chart in Figure 1 shows participants' history of chronic diseases, with taller red lines indicating no history of hyperlipidemia, HTN, thyroid disease, or diabetes. A bigger blue bar indicates more awareness of someone with GDM, while fewer know someone with twins with GDM.

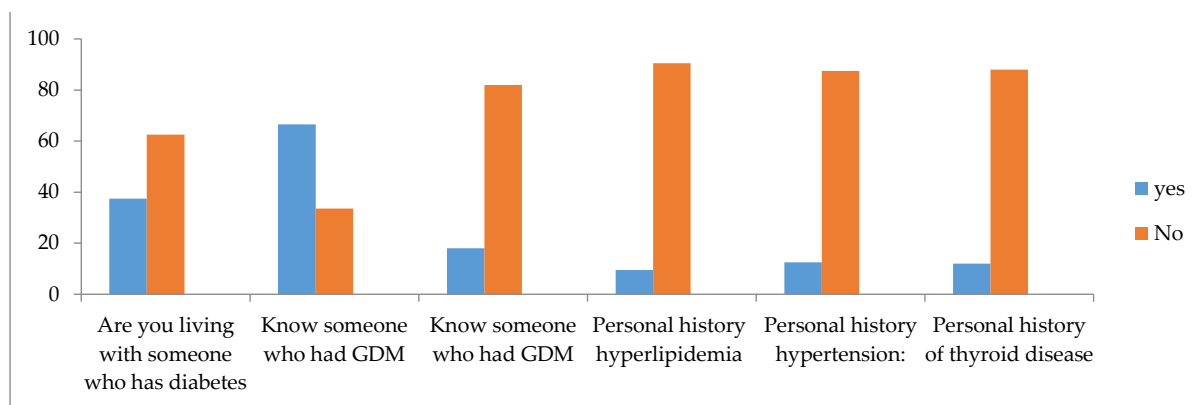


Figure 1. Participants history of chronic diseases.

Knowledge of Participants about GDM

Respondents used percentages and frequencies to answer the four questions on the study questionnaire about knowledge of GDM, its diagnosis, treatment, and complications.

Knowledge about the Risk Factors of GDM

Overall, 53.9% of participants demonstrated a high level of knowledge regarding the risk factors for GDM (Table 4). Of these, 73% of participants answered "yes" when asked if a family history of GDM increases the risk of developing GDM in the future. Information indicating that obesity in women increases the risk of developing GDM during pregnancy was ranked second by 70% of participants. Sixty-six percent of the participants who took part in the survey were extremely educated about the third piece of information, which states that "excessive weight gain during pregnancy increases the risk of future GDM." Additionally, sixty-four percent of the participants said they were aware that "a prior personal history of GDM increases the risk of future GDM."

Table 4. Participants knowledge about the risk factors of GDM

		Frequency	Percent %
Increase the number of pregnancies increases the risk of developing GDM	Yes	118	59%
	No	47	23.5%
	Don't know	35	17.5%

Prior personal history of GDM increases the risk of future GDM	Yes	129	64.5%
	No	42	21%
	Don't know	29	14.5%
Obesity in women increases the risk of developing gestational diabetes during pregnancy	Yes	140	70%
	No	34	17%
	Don't know	26	13%
Excessive weight gain in pregnancy increases the risk of future GDM	Yes	132	66%
	No	40	20%
	Don't know	28	14%
The family history of GDM increases the risk of future GDM	Yes	146	73%
	No	29	14.5%
	Don't know	25	12.5%
Being pregnant at a later age increases the risk of developing gestational diabetes	Yes	116	58%
	No	42	21%
	Don't know	42	21%
Having HTN during pregnancy increases the risk of gestational diabetes	Yes	90	45%
	No	67	33.5%
	Don't know	43	21.5%

Knowledge about the Methods of GDM Diagnosis

According to the table 5 and figure 2, only 45.25 percent of respondents were aware of the GDM screening procedures. Of those, 48.5 percent said they were aware that OGTT is the most reliable test for screening for GDM, while 18% disagreed and 33.5% were unsure. Furthermore, 42% of the participants said they were aware that the OGTT takes 24 to 28 weeks to complete.

Table 5. Participants knowledge about the methods of GDM diagnosis.

		Frequency	Percent %
OGTT is the gold stander test to screen for GDM	Yes	97	48.5%
	No	36	18%
	Don't know	67	33.5%
The optimal time to do OGTT is 24-28 weeks	Yes	84	42%
	No	47	23.5%
	Don't know	63	34.5%

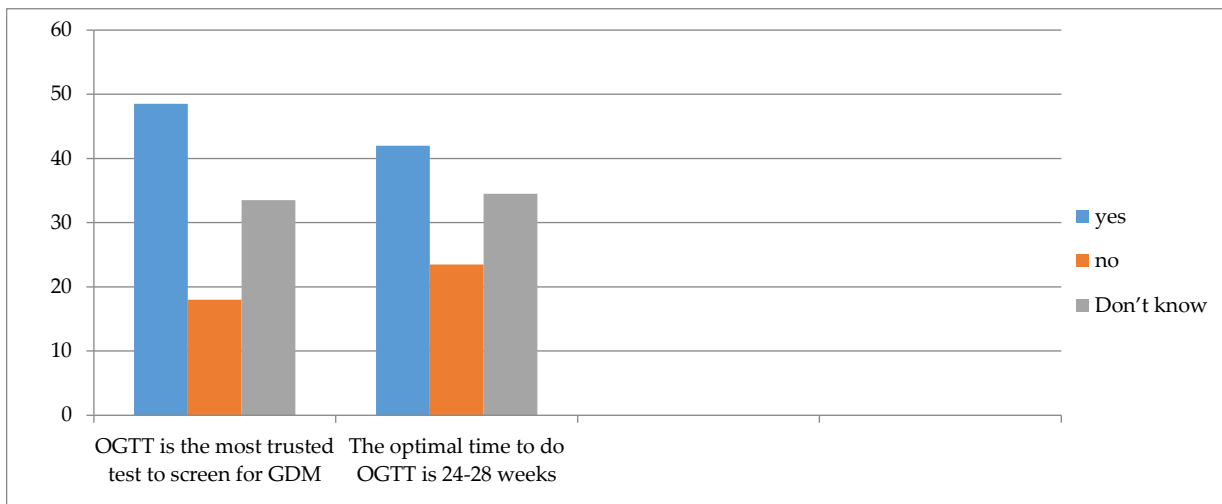


Figure 2: knowledge about methods of GDM diagnosis.

Knowledge about the Treatment of GDM

According to the table 6, The majority (82%) agrees that dietary and lifestyle modifications are important for managing GDM, with 10% disagreeing and 8% not sure. On the other hand, attitudes about the use of insulin vary more: 59% believe it is suitable for managing GDM, 18.5% disagree, and 22.5% are unsure. These findings show that while there is broad agreement that dietary and lifestyle changes are essential for managing GDM, there are diverse opinions about the function of insulin, which highlights a treatment gap in this area.

Table 6: Participants knowledge about the treatment of GDM.

		Frequency	Percent %
Lifestyle and diet modifications are part of the GDM management plan	Yes	164	82%
	No	20	10%
	Don't know	16	8%
Insulin is one of the appropriate GDM management plan	Yes	118	59%
	No	37	18.5%
	Don't know	45	22.5%

Knowledge about GDM Complications and Consequences

The results in table 7 reveals that Most people (56%) think that GDM usually goes away after delivery; 24.5% don't agree, and 19.5% aren't sure. 76% of respondents agree that untreated GDM may increase newborn problems; however, 15.5% disagree and 8.5% are unsure of the relationship. Furthermore, more than half (55.5%) believe that having GDM raises the chance of developing type 2 diabetes in the future, compared to 23% who disagree and 21.5% who are unclear. The research highlights the need for greater awareness or clarity on these problems by indicating both a consensus and a large degree of doubt or disagreement over the consequences of GDM.

Table 7. Participant's knowledge about GDM complications and consequences.

		Frequency	Percent %
GDM usually disappears after delivery	Yes	112	56%
	No	49	24.5%
	Don't know	39	19.5%

Untreated GDM increases the risk of neonatal complications	Yes	152	76%
	No	31	15.5%
	Don't know	17	8.5%
GDM increases the risk of future type 2 diabetes	Yes	111	55.5%
	No	46	23%
	Don't know	43	21.5%

The overall knowledge of participants about GDM

According to the above table 8, 30.5% of participants had good awareness of GDM, while 51.5% of participants had only fair knowledge of the condition. Furthermore, just 18% of people knew very little about it.

Table 8: The overall knowledge of participants about GDM.

Knowledge level	No.	Percent %
Poor knowledge	36	18%
Fair knowledge	103	51.5%
Good knowledge	61	30.5%

The factors that effect on the knowledge of participants on GDM

According to hypothesis (1), there are no age-related statistically significant differences in participants knowledge of GDM ($p = 0.05$).

The Differences in The Knowledge of participants on GDM due to Age

Given that the p-value is 0.165, which is greater than the expected value, there are no statistically significant changes in participant's knowledge of GDM based on age.

Hypothesis (2) states: (Due to gestational weeks, there are no statistically significant variations in participant's awareness of GDM ($p = 0.05$)).

Table 9. The differences in the knowledge of participants on GDM due to age.

Knowledge	Mean Square	Frequency	P-value
Between Groups	21.1	1.81	0.165
Within Groups	11.6		

The Differences in the Knowledge of participants on GDM due to Gestational Weeks

Given that the p-value is higher than the expected value (0.335), the table 10 indicates that there are no statistically significant changes in the knowledge of participants about GDM according to gestational week.

Hypothesis (3): which states: (Due to educational attainment, there are no statistically significant changes in participants awareness of GDM at the level of $p = 0.05$).

Table 10. The differences in the knowledge of participants on GDM due to gestational weeks.

Knowledge	Mean Square	Frequency	P-value
Between Groups	12.9	1.11	.335
Within Groups	11.7		

The Differences in the Knowledge of participants on GDM due to Level of Education

Given that the p-value is greater than the expected value of 0.545, the table 11 indicates that there are no statistically significant differences in the knowledge of participants about GDM based on level of education.

Hypothesis (4): which states: (Participants knowledge of GDM is not statistically different at the level of $p = 0.05$ because of working elements.).

Table 11. the differences in the knowledge of participants on GDM due to level of education.

Knowledge	Mean Square	Frequency	P-value
Between Groups	7.18	0.608	.545
Within Groups	11.8		

The Differences in the Knowledge of participants on GDM due to Working Aspects

The Least Significant Difference Test was performed, and the results indicated differences in favor of participants working in the medical field. The table 12 indicates that there are statistically significant differences in the knowledge of participants about GDM due to working aspects, since the p-value is 0.03, lower than the presumed value.

Hypothesis (5): which states: (Due to a history of chronic illness, participants awareness of GDM is not significantly different at the level of $p = 0.05$.).

Table 12. The differences in the knowledge of participants on GDM due to working aspects.

Knowledge	Mean Square	Frequency	P-value
Between Groups	68.4	6.1	0.003
Within Groups	11.1		

The differences in the knowledge of participants on GDM due to chronic illness

According to the table 13, participants' knowledge scores on gestational diabetes mellitus (GDM) are greater among those who have a medical background or a history of diabetes. Living with a diabetic received a higher score (8.4) than did those without the disease. Individuals who have a personal history of diabetes scored 8.4 out of 8.5. These variations are negligible and not statistically significant.

Table 13. the differences in the knowledge of participants on GDM due to chronic illness

Knowledge	Answer	N	Mean	Std. Deviation	P-value
Living with someone who works in the medical field	Yes	40	8.6	3.108	0.34
	No	160	8.4	3.514	
living with someone who has diabetes	Yes	75	8.4	3.110	0.306
	No	125	8.5	3.620	
Know someone who had GDM	Yes	133	8.56	3.175	0.117
	No	67	8.34	3.910	
Personal history of diabetes	Yes	36	8.4	2.901	0.118
	No	164	8.5	3.543	

Discussion

According Based on the study's findings, it was observed that 103 respondents, constituting 51.5% of the total, exhibited a fair understanding of GDM. This is consistent with earlier investigations carried out by Alharthi et al. (Alharthi et al., 2018) and Hussain et al. (Hussain et al., 2015). However, these results contradicted the findings from Prabhu J et al. (Lee et al., 2018), who reported that 51.5% of their participants possessed a significant understanding of GDM. Despite the fact that 63.5% of the participants held bachelor's degrees or higher, the study highlighted the persisting lack of knowledge and awareness among them, possibly due to the limited availability of explicit educational programs on GDM.

Furthermore, the study revealed that a family history of GDM increases the risk of future GDM, and a prior personal history of GDM also elevates this risk. These findings were consistent with those of A. S. Alharthi et al. (Fitria et al., 2019) but differed from the study by V. Shriram et al. (Hussain et al., 2015). The current research indicated that over half of the participants were aware of the risk factors associated with GDM in pregnant women, aligning with the findings of A. S. Alharthi et al. (Alharthi et al., 2018), Zahid Hussain et al. (Bhowmik et al., 2018), and Bhowmik et al. (Shriram et al., 2013). However, only 48.5% of the participants were aware that the OGTT is the gold standard for GDM screening, and 42% knew that it should be conducted between 24 and 28 weeks of pregnancy.

The research also emphasized that the participants demonstrated comprehension of GDM treatment methods and acknowledged the importance of dietary and lifestyle modifications in the management of GDM. These findings align with results from previous studies conducted by Prabhu J. et al. (Prabhu J et al., 2021) and V. Shriram et al. (Shriram et al., 2013).

In the research, 62.5% of the respondents believed that participants possessed a good understanding of the repercussions and complications of having GDM, aligning with the findings of Ogu et al. (Ogu et al., 2017). In contrast to the study by Prabhu J et al. (Prabhu J et al., 2021), which reported inadequate awareness about neonatal difficulties, this study revealed that a high level of knowledge about untreated GDM increased the likelihood of complications for the newborn.

Contrary to the results mentioned, a study by V. Shriram et al. (Hussain et al., 2015) suggested that there were no statistically significant changes in participants' awareness of GDM with respect to age.

The analysis indicated that participants in their 13th to 40th weeks of pregnancy exhibited a statistically significant advantage in understanding GDM concerning gestational weeks. Consistent with studies by V. Shriram et al. (Shriram et al., 2013) and A. S. Alharthi et al. (Alharthi et al., 2018), there were also statistically significant differences in participants' knowledge about GDM based on their level of education, with those holding bachelor's and higher degrees showing a preference.

Moreover, the study's results suggested statistically significant differences in participants' awareness of GDM based on their occupation, with those working in the medical sector having a greater understanding.

Finally, the study revealed differences in participants' knowledge concerning living with a medical professional and knowing someone who had GDM, as participants who answered "yes" tended to have higher mean scores compared to those who replied "no." However, no statistically significant differences were found in relation to living with someone who has diabetes. These findings were in line with the results of Alharthi et al. (Alharthi et al., 2018).

Conclusion

The majority of participants (51.5%) had a reasonable general understanding of GDM, whereas only 18.5% had a poor understanding of the condition. Of the participants, 30.5% had a high knowledge of GDM. The majority of participants know very little about the techniques used to diagnose GDM. Furthermore, the findings show that working factors had an impact on GDM understanding. On the other hand, awareness of GDM is unaffected by age, gestational weeks, educational attainment, or history of chronic illness.

Cooperation between multiple organizations—such as the Ministry of Health, private practices, nursing, and medicine—is essential to educating pregnant mothers about gestational diabetes mellitus (GDM).

Recommendation

Based on the study outcomes, we recommend the following:

- a) Teaching expectant mothers about the drawbacks and implications of gestational diabetes mellitus.
- b) To educate all pregnant women and those intending to get pregnant about GDM, the ministry of health, the departments of nursing, medicine, and physicians at universities and in private practice should work together to design and deliver educational flyers.

- c) carrying out a field study to support other women who may be at risk of GDM by examining the prevalence and risk factors of GDM among Palestinian women.

Funding: This research has no external funding.

Institutional Review Board Statement: Upon receiving comprehensive information about the study and signing the informed consent included in the research collaboration documents, participants were instructed to fill out the questionnaire. This research adhered to the principles outlined in the Declaration of Helsinki and received approval from the Ethics Committee of the Arab American University IRP committee.

Informed Consent Statement: All participants in the study provided informed consent.

Data Availability Statement: The corresponding author can provide access to all the data upon a reasonable request.

Public Involvement Statement: No public involvement in any aspect of this research.

Guidelines and Standards Statement: This manuscript was drafted against the Strengthening the Reporting of Observational Studies in Epidemiology guidelines for cross-sectional research.

Conflicts of Interest: The author has not disclosed any conflicts of interest.

Acknowledgment

The author is indebted to the Arab American University, a college of nursing, for its support in the process of conducting the study.

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