
RESEARCH ARTICLE: Assessing Knowledge and Prevention Strategies For Gestational Diabetes Mellitus Among Pregnant Mothers

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ABSTRACT. This quantitative descriptive study investigated the knowledge of gestational diabetes mellitus (GDM) and associated preventive practices among 100 pregnant mothers in Jolo, Sulu, Philippines. Data were collected using a three-part questionnaire assessing socio-demographic characteristics, GDM knowledge (risk factors, symptoms, complications), and preventive strategies (diet, physical activity, prenatal check-ups). Results revealed poor knowledge of GDM across all three knowledge areas, despite moderate adoption of preventive strategies. Significant positive correlations were found only between age/parity and knowledge/preventive practices. The study recommends targeted interventions to improve GDM knowledge and promote healthy behaviors, emphasizing culturally appropriate educational strategies and collaborative efforts between healthcare providers and community organizations. Further research is needed to explore factors influencing preventive strategy adoption.

KEYWORDS: maternal health, Philippines, health education

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Introduction

Gestational Diabetes Mellitus (GDM) poses a significant global health challenge, affecting a substantial number of pregnant women worldwide. This condition, characterized by impaired glucose tolerance during pregnancy, can lead to adverse outcomes for both mother and child (Dissassa et al., 2023). The incidence of GDM is rising internationally, with particularly high rates observed in Asian populations, where it is estimated to impact a significant percentage of pregnancies (Wang et al., 2021). In the Philippines, GDM represents a substantial proportion of hyperglycemic pregnancies (Amarra et al., 2021).

Despite its prevalence, GDM remains poorly understood by many pregnant women, underscoring the need for improved awareness and education. Risk factors are multifaceted and include maternal age, pre-existing glucose intolerance, family history of diabetes, pre-pregnancy weight status, dietary habits, physical activity levels, and breastfeeding practices (Plows et al., 2018). Moreover, GDM carries potential long-term health consequences for both mother and

offspring, increasing the risk of type 2 diabetes and associated cardiovascular and metabolic complications (Damm et al., 2016; Murray & Reynolds, 2020).

This study aimed to assess current understanding of GDM among pregnant women in the Philippines, examining prevalence, risk factors, and associated health implications. The research also sought to identify areas requiring further investigation, such as the interplay between socioeconomic factors and GDM, and to inform the development of targeted preventive strategies. Ultimately, this study contributes to the growing body of knowledge on GDM by exploring the knowledge, attitudes, and practices of pregnant mothers in the Philippines, providing insights to guide healthcare professionals and policymakers in improving maternal and child health outcomes.

Research Objectives

1. What is the socio-demographic profile of pregnant mothers in terms of:
 - 1.1 age;
 - 1.2 educational level;
 - 1.3 occupation; status;
 - 1.4 income; and
 - 1.5 number of pregnancies?
2. What is the level of knowledge of pregnant mothers on gestational diabetes in terms of:
 - 2.1 Risk Factors;
 - 2.2 Symptoms; and
 - 2.3 Associated Complications?
3. What preventive strategies are commonly practiced by pregnant mothers to reduce the risk of developing gestational diabetes?
4. Is there a significant correlation among subcategories subsumed under the level of knowledge about gestational diabetes mellitus among pregnant mothers.
5. Does the level of knowledge on gestational diabetes mellitus predict the preventive strategies of pregnant mothers?

Literature Review

Research consistently identifies several key risk factors for gestational diabetes mellitus (GDM), underscoring the need for targeted preventive interventions and public health initiatives. Pre-pregnancy obesity, excessive gestational weight gain, and a prior history of GDM are all strongly associated with increased risks of adverse pregnancy outcomes, including cesarean delivery, large-for-gestational-age infants, and macrosomia (Su et al., 2019; Inoferio et al., 2024). Elevated pre-pregnancy BMI is a significant predictor of GDM development (Ebert et al., 2019; Garil, 2024), a finding supported by reviews of GDM research in the Philippines (Kim, 2020; Calzada, 2024). A family history of diabetes also substantially increases GDM risk (Care, 2019; Espartero et al., 2024), highlighting the importance of lifestyle modifications such as healthy eating and regular physical activity for individuals with a family history of diabetes (Kim, 2020). Additional established risk factors include maternal age, prior GDM, and ethnicity (McIntyre et al., 2019; Carpio et al., 2024).

Advanced maternal age is linked to increased risks of adverse neonatal outcomes, including low birth weight and hyperbilirubinemia (Lu et al., 2022; Verdeflor, 2024). Studies consistently demonstrate a significantly elevated risk of GDM in women aged 35 and older (Barros et al., 2019; Ebert et al., 2019; Kim, 2020).

Lifestyle factors play a crucial role in GDM risk. High levels of sedentary behavior can negate the benefits of even high levels of physical activity, particularly in pregnancies with excessive gestational weight gain (Yong et al., 2020). GDM significantly increases the risk of

various pregnancy and postpartum complications, including preeclampsia, preterm birth, macrosomia, and the subsequent development of type 2 diabetes (Natamba et al., 2019; Herradura et al., 2019).

Dietary interventions are essential for GDM prevention and management. Research indicates that dietary patterns rich in fruits, vegetables, nuts, fish, and legumes, and low in red and processed meats and sugar-sweetened beverages are associated with improved outcomes (D'Arcy et al., 2020). Comprehensive dietary counseling is crucial, with a focus on carbohydrate intake, as well as recommended mineral and vitamin intake (Rasmussen et al., 2020). Micronutrient deficiencies are common among pregnant women and impact both maternal and fetal health (Mohamed et al., 2022). In the Philippines, preventive strategies emphasize dietary modifications, such as increased fruit and vegetable consumption and reduced sugar intake (Ke et al., 2021). Regular physical activity, such as walking or supervised exercise programs, can also effectively reduce GDM risk (Barakat et al., 2019; Nobles et al., 2019; Li et al., 2020). Vitamin D supplementation may also offer preventive benefits (Ojo et al., 2019).

Technological advancements, such as continuous glucose monitoring (CGM), show promise in early detection and improved management of GDM, reducing maternal and neonatal complications (Castorino et al., 2024; Lim et al., 2024; Lenart et al., 2024).

Methodology

1. Research Design

The research design utilized in this study was a quantitative descriptive design. This approach was chosen to investigate the knowledge and prevention strategies related to gestational diabetes mellitus (GDM) among pregnant mothers, typically involving data collection through structured surveys or questionnaires. The purpose of this study design was to provide a detailed description of the prevalence, distribution, and patterns of knowledge and preventive strategies related to GDM among pregnant mothers. This study employed a quantitative approach, a methodology well-suited to measuring and analyzing attitudes, opinions, behaviors, and other defined variables within a larger population using numerical data. This approach allows for statistical analysis and the generalization of findings to a broader context (Mohajan, 2020; Chavez, 2020; Chavez & Prado, 2023).

2. Sampling and Participants

This research was conducted in Jolo, Sulu, Philippines, a first-class municipality with a population of 137,266 (2020 Census), encompassing eight barangays. The study focused on pregnant women in their second or third trimester, regardless of GDM diagnosis. Participants were required to provide informed consent and complete the study instruments in either English or Tausug. By including a diverse group of pregnant women, the study aimed to capture a wide range of experiences and perspectives on GDM management and prevention. The sampling design employed was a non-probability purposive sampling method, aiming to recruit a sample of 100 pregnant mothers from selected barangays in Jolo within the established inclusion criteria. Purposive sampling was employed to ensure the selected participants aligned with the study's aims and objectives. This approach enhances the study's rigor and trustworthiness (Campbell et al., 2020; Mendoza, 2023; Murro et al., 2023).

3. Research Instruments

This study utilized a three-part survey questionnaire to assess knowledge of and prevention strategies for gestational diabetes mellitus (GDM) among pregnant mothers. The questionnaire

was modified from Dissassa HD, Tufa DG, Geleta LA, et al.'s (2023) study, "Knowledge on gestational diabetes mellitus and associated factors among pregnant women attending antenatal care clinics of North Shewa zone public hospitals, Oromia region, Central Ethiopia: a cross-sectional study," published in *BMJ Open*, and further validated by experts for content appropriateness.

Part 1 collected socio-demographic data (age, education level, occupation, monthly income, number of pregnancies) using a single-choice response format. Part 2 assessed knowledge of GDM risk factors, symptoms, and complications using a four-point Likert scale (1967): 1 - Never (Very poor Knowledge), 2 - Sometimes (Poor Knowledge), 3 - Often (Moderate Knowledge), and 4 - Always (High Knowledge). This section was divided into three subscales (risk factors, symptoms, complications), each with five items. Part 3 evaluated prevention strategies using a similar four-point Likert scale (1 - Never (Non-Preventive), 2 - Sometimes (Fairly Preventive), 3 - Often (Moderate Preventive), and 4 - Always (Highly Preventive)), also divided into three subscales (diet, physical activity, prenatal check-ups), each with five items.

The study's validity and reliability were considered in relation to sample size, sampling technique, data collection tools, and analysis methods. The use of a modified questionnaire and expert validation aimed to enhance content appropriateness. While the small sample size and non-probability sampling technique introduced potential bias and limited generalizability, the use of reliable data collection tools and appropriate statistical analysis methods sought to mitigate these limitations. Strict attention to clarity and accuracy in data collection was crucial to avoid biases or errors that could affect the study's findings.

4. Data Gathering Procedure

The study used a modified survey questionnaire method to collect quantitative data. The first step was to review literature related to gestational diabetes mellitus, using a questionnaire from a study conducted in Central Ethiopia as a basis. The literature review informed the development of the survey questionnaire for the study. The study's authors were Dissassa HD, Tufa DG, Geleta LA, et al., and it was published in *BMJ Open* 2023.

After constructing the questionnaire, the research adviser reviewed it and made corrections before finalizing the layout for distribution to the respondents. The content was also validated by a panel of three experts to ensure accuracy and reliability. To conduct the study, the researcher first requested permission from the offices of different barangays in the Province of Sulu Municipality by sending a letter. Once permission was granted, the researcher identified 12 eligible respondents from each barangay in the municipality of Sulu. Before distributing the survey, the researcher provided the necessary approach and instructions for answering the questionnaire. The data collection method involved standardized procedures using a written questionnaire, with researchers approaching participants who met the inclusion criteria to review and collect data. All data collected was kept confidential and was only accessible to authorized researchers or study personnel.

The final step in the research process involved analyzing and interpreting the data collected during the survey. A statistician generated statistical results that helped identify patterns and trends in the data, offering insights into the research questions being addressed. The findings were presented in a clear and concise report that was relevant to the intended audience. This report included all the important research findings and conclusions, serving as a valuable source of information for others in the field.

5. Data Analysis

Descriptive statistics (frequencies, percentages, means) were used to characterize the participants' socio-demographic data and their knowledge of and practices related to GDM. Pearson correlation coefficients assessed the relationships between knowledge subcategories, while linear regression analysis examined the relationship between GDM knowledge and preventive strategies.

Results and Discussion

Question 1. What is the socio-demographic profile of pregnant mothers in terms of 1.1 age, 1.2 educational attainment, 1.3 occupation status, 1.4 income, and 1.5 number of pregnancies?

1.1 In terms of Age of respondents

Table 1.1 shows the age distribution of the 100 participants. Half (50%) were aged 21-31 years, with 10% aged 20 or younger, 20% aged 31-40, and 20% aged 41 or older. The majority of participants were within the typical reproductive age range.

Table 1.1 Socio-demographic profile of pregnant mothers in terms of age

Age	Frequency	Percent
20 and below	10	10%
21-31	50	50%
31-40	20	20%
41 and above	20	20%
Total	100	100%

1.2. In terms of Educational level

Table 1.2 shows the educational attainment of 100 pregnant mothers: 18% had formal education, 22% primary, 28% secondary, 16% a baccalaureate/college degree, and 16% postgraduate schooling. The majority had secondary education, with fewer holding college degrees. This suggests educational attainment may influence GDM understanding and preventive strategy implementation, consistent with Sarmiento-Carolina et al.'s (2019) systematic review showing lower education levels are significantly associated with increased GDM risk. Targeted interventions for less educated pregnant women are recommended to prevent GDM and adverse outcomes

Table 1.2 Socio-demographic profile of pregnant mothers in terms of educational level.

Educational level	Frequency	Percent
Formal education	18	18.0
Primary education	22	22.0
Secondary education	28	28.0
Bachelor's degree	16	16.0
Graduate degree	16	16.0
Total	100	100.0

1.3. In terms of Occupational status

Table 1.3 reveals the occupational status of 100 pregnant mothers: 74% unemployed, 10% part-time employed, 14% self-employed, and 2% full-time employed. The high unemployment rate (74%) suggests potential economic vulnerability and limited access to healthcare and resources. This contrasts with Wang et al.'s (2020) findings that certain occupations (administrative, support, waste management, healthcare) increase GDM risk. While unemployment may mitigate some occupational risks, it introduces economic stressors potentially

increasing GDM risk through reduced access to nutrition and healthcare. Future research should consider the multifaceted impact of occupational status and economic vulnerability on maternal health.

Table 1.3 Socio-demographic profile of pregnant mothers in terms of occupational status.

Occupational status	Frequency	Percent
Unemployed	74	74.0
Part-time employed	10	10.0
Self-employed	14	14.0
Full-time employed	2	2.0
Total	100	100.0

1.4. In terms of Monthly income

Table 1.4 presents the socio-demographic profile of pregnant mothers in terms of monthly income. The data illustrates that, among the 100 participants surveyed, 80 individuals (80%) has a monthly income of 10,000 and below, 10 (10%) with 10,001-20,000 per month, 7 (7%) an income of 20,001 to 30,000 per month, and 3(3%) an income of 30,001 and above. In relation to the occupation status, this findings reflect that there are very few mothers had a very good monthly income.

Table 1.4 Socio-demographic profile of pregnant mothers in terms of monthly income.

Monthly Income	Frequency	Percent
10,000 and below	80	80.0
10,001 to 20,000	10	10.0
20,001 to 30,000	7	7.0
30,001 and above	3	3.0
Total	100	100.0

1.5. In terms of Number of pregnancies

Table 1.5 presents the socio-demographic profile of pregnant mothers in terms of number of pregnancies. The data trends shows, among the 100 participants surveyed, 24 respondent (24%) is pregnant for the first time, 25 (25%) are pregnant second time, 23 (23%) pregnant for the third time and 28 (28%) is pregnant for the 4th time. Data shows that majority of the mothers are multiparous (have multiple pregnancies), A significant portion of the mothers are experiencing their 3rd or 4th pregnancy. This indicates that women included in this study are within the reproductive age. Furthermore, the relatively high percentage of multiparous women suggests that health care providers should be prepared to address the unique needs and potential risks associated with subsequent pregnancies. This includes consideration such as increased risk of complications and the importance of prenatal care.

Table 1.5 Socio-demographic profile of pregnant mothers in terms of number of pregnancies.

No. of pregnancies	Frequency	Percent
1st pregnancy	24	24.0
2nd pregnancy	25	25.0
3rd pregnancy	23	23.0
4th pregnancy	28	28.0
Total	100	100.0

2. *What is the level of knowledge of pregnant mothers on gestational diabetes in terms of 2.1 risk factors, 2.2 symptoms, and 2.3 associated complications?*

2.1. In terms of Risk Factors

Pregnant mothers demonstrated poor knowledge (weighted mean = 2.42, SD = 0.74) of GDM risk factors (**Table 2.1**). While moderate knowledge was shown regarding increased risk with age and prior GDM history, understanding of obesity and sedentary lifestyle as risk factors was poor. Targeted health education is needed to improve knowledge and prevent GDM complications.

Table 2.1 The level of knowledge of pregnant mothers on gestational diabetes in terms of risk factors.

Risk Factors	Mean	SD	Rating
1. I know that obesity is a significant risk factor for developing GDM	2.4100	.97540	Sometimes
2. I know that having a family history of DM increases my risk of GDM	2.4000	1.09175	Sometimes
3. I know that women over age 25 are at higher risk for GDM	2.5100	1.01000	Often
4. I know that experiencing GDM in a previous pregnancy raises the likelihood of it occurring at subsequent pregnancies	2.5300	1.10513	Often
5. I know that sedentary lifestyle contributes to an increased risk of developing GDM	2.2500	1.00880	Sometimes
OVERALL MEAN	2.4200	.73663	Sometimes

Legend: (4) 3.50 – 4.00 = (always) very high knowledge; (3) 2.50 – 3.49 = (often) moderate knowledge; (2) 1.50 – 2.49 = (sometimes) poor knowledge; (1) 1.00 – 1.49 = (never) very poor knowledge

2.2. In terms of Symptoms

Pregnant mothers demonstrated poor knowledge (weighted mean = 2.42, SD = 0.74) of GDM symptoms (**Table 2.2**). While blurred vision was moderately recognized, frequent urination—a key symptom—was often overlooked, potentially delaying diagnosis. This aligns with Hinkle et al.'s (2018) findings showing many GDM symptoms are normalized or unrecognized. Comprehensive education on GDM symptoms is crucial for timely intervention and improved maternal-infant outcomes.

Table 2.2 The level of knowledge of pregnant mothers on gestational diabetes in terms of symptoms

Symptoms	Mean	SD	Rating
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1.	I know that increase thirst is a common symptom of GDM.	2.3300	1.04500	Sometimes
2.	I know that frequent urination can indicate the presence of GDM.	2.2900	1.06643	Sometimes
3.	I know that experiencing fatigue may be a symptom of GDM.	2.4800	1.03942	Sometimes
4.	I know that blurred vision is associated with GDM	2.5900	1.02588	Often
5.	I know that it is possible to have no noticeable symptoms when experiencing GDM.	2.4800	1.03942	Sometimes
OVERALL MEAN		2.4340	.73913	Sometimes

Legend: (4) 3.50 – 4.00 = (always) very high knowledge; (3) 2.50 – 3.49 = (often) moderate knowledge; (2) 1.50 – 2.49 = (sometimes) poor knowledge; (1) 1.00 – 1.49 = (never) very poor knowledge

2.3. In terms of Complications

Pregnant mothers showed poor knowledge (weighted mean = 2.47, SD = 1.00) of GDM complications (**Table 2.3**). While moderately aware of the increased risk of type 2 diabetes later in life, understanding of immediate complications like preterm birth, macrosomia, and cesarean delivery was lacking. This highlights the need for improved education on both short-term and long-term GDM consequences for mothers and infants, aligning with Natamba et al.'s (2019) findings on postpartum risks associated with GDM.

Table 2.3 The level of knowledge of pregnant mothers on gestational diabetes in terms of complication.

	Complications	Mean	SD	Rating
1.	I know that high blood pressure can be a complication resulting from GDM.	2.4700	.96875	Sometimes
2.	I know that macrosomia is a potential complication of GDM/	2.3700	1.06983	Sometimes
3.	I know that GDM can increase the risk of preterm birth	2.3600	1.02020	Sometimes

4. I know that women with GDM have higher likelihood of developing type 2 DM.	2.7500	3.12492	Often
5. I know that GDM can lead to complications for the baby such as low blood sugar after birth.	2.4000	1.07309	Sometimes
OVERALL MEAN	2.4700	1.00035	Sometimes

Legend: (4) 3.50 – 4.00 = (always) very high knowledge; (3) 2.50 – 3.49 = (often) moderate knowledge; (2) 1.50 – 2.49 = (sometimes) poor knowledge; (1) 1.00 – 1.49 = (never) very poor knowledge

3. *What preventive strategies are commonly practiced by pregnant mothers to reduce risks of developing gestational diabetes in terms of 3.1 diet, 3.2 physical activity, 3.3 glucose monitoring, and 3.4 regular checkup?*

3.1 In terms of diet

Pregnant mothers reported moderate preventive practices (weighted mean = 2.57, SD = 0.93) regarding diet (**Table 3.1**). Smaller, more frequent meals were seen as most beneficial for blood sugar control, while avoidance of processed foods was rated lower. This aligns with research showing smaller, more frequent meals and reduced processed food intake improve glycemic control and lower GDM risk (Hinkle et al., 2020). Improved awareness and adherence to processed food reduction are needed.

Table 3.1 Preventive strategies are commonly practiced by pregnant mothers to reduce risks of developing gestational diabetes in terms of diet.

Diet	Mean	SD	Rating
1. I regularly eat a balanced diet that includes plenty of fruits and vegetables.	2.5500	1.17529	Often
2. I consciously reduce my sugar intake to minimize risks of GDM.	2.5500	1.18386	Often
3. I prefer choosing whole grains instead of refined grains in my meals.	2.6300	1.11604	Often
4. I eat smaller, more frequent meals throughout the day to manage my blood sugar levels.	2.7500	1.38078	Often
5. I actively avoid processed foods as part of my dietary practice.	2.3700	1.13400	Sometimes

OVERALL MEAN	2.5700	.92567	Often
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Legend: (4) 3.50 – 4.00 = (always) very highly preventive (3) 2.50 – 3.49 = (often) moderate preventive; (2) 1.50 – 2.49 = (sometimes) fairly preventive; (1) 1.00 – 1.49 = (never) non preventive

3.2 In terms of physical activities

Pregnant mothers reported fairly preventive physical activity practices (weighted mean = 2.49, SD = 0.77; **Table 3.2**). Strength training was most common, followed by walking, while prenatal yoga was least practiced. This suggests a need to promote a wider range of physical activities during pregnancy, supporting findings that regular exercise helps prevent GDM (Barakat et al., 2019).

Table 3.2 Preventive strategies commonly practiced by pregnant mothers to reduce risks of developing gestational diabetes in terms physical activities.

Physical activities	Mean	SD	Rating
1. I regularly go for walks as part of my physical activity routine during pregnancy.	2.5800	1.24056	Often
2. Swimming is a physical activity I enjoy while pregnant.	2.4300	1.11242	Sometimes
3. I participate in prenatal yoga classes to maintain physical fitness.	2.3900	1.17975	Sometimes
4. I engage in strength training exercises to support my health during pregnancy.	2.6400	1.03005	Often
5. I do not engage in any physical activity during my pregnancy.	2.4000	1.10096	Sometimes
OVERALL MEAN	2.4880	.76558	Sometimes

Legend: (4) 3.50 – 4.00 = (always) very highly preventive (3) 2.50 – 3.49 = (often) moderate preventive; (2) 1.50 – 2.49 = (sometimes) fairly preventive; (1) 1.00 – 1.49 = (never) non preventive

3.3 In terms of Prenatal checkups

Pregnant mothers reported moderate adherence (weighted mean = 2.73, SD = 1.15) to prenatal check-up preventive strategies (**Table 3.3**). Blood glucose/blood pressure monitoring and prenatal check-ups were highly prioritized, while vitamin/mineral supplementation was less emphasized. This indicates a generally proactive approach to prenatal care.

Table 3.3 Preventive strategies commonly practiced by pregnant mothers to reduce risks of developing gestational diabetes in terms prenatal check-ups.

Prenatal Checkups	Mean	SD	Rating
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1. I attend prenatal check-ups to monitor my health during pregnancy as advised by health care provider.	2.8100	1.28468	Often
2. I submit myself for ultrasound checkup for baby's weight and positioning during the 2nd and 3rd trimester.	2.7300	1.30929	Often
3. I have my blood glucose levels and blood pressure checked regularly by my health care provider.	2.8500	1.25025	Often
4. I listen to counseling during prenatal visits.	2.6700	1.26375	Often
5. I take additional vitamins and minerals as advised by my health care provider.	2.5700	1.32005	Often
OVERALL MEAN	2.7260	1.14686	Often

Legend: (4) 3.50 – 4.00 =(always) very highly preventive(3) 2.50 – 3.49 =(often) moderate preventive; (2) 1.50 – 2.49 = (sometimes) fairly preventive; (1) 1.00 – 1.49 = (never) non preventive

4. Is there a significant correlation among subcategories subsumed under the level of knowledge about gestational diabetes mellitus among pregnant mothers?

Table 4 presents significant correlations ($p < .05$) among pregnant mothers' knowledge of GDM risk factors, symptoms, and complications. A strong positive correlation existed between knowledge of risk factors and symptoms, while a moderate correlation was observed between risk factors and complications. These findings suggest a shared understanding (or lack thereof) across these GDM knowledge areas..

Table 4. Correlation among the sub-categories subsumed under the level of knowledge about gestational diabetes mellitus among pregnant mothers.

Variables		Pearson <i>r</i>	Sig	N	Description
Dependent	Independent				
Risks Factor	Symptoms	.616**	.000	100	High
	Complication	.357**	.000	100	Moderate

*Correlation Coefficient is significant at alpha .05

Correlation Coefficient Scales Adopted from Hopkins, Will (2002):

0.0-0.1=Nearly Zero; 0.1-0.30=Low; .3-0.5 0=Moderate; .5-0.7-0=High; .7-0.9= Very High; 0.9- 1=Nearly Perfect

5. Does the level of knowledge on gestational diabetes mellitus predict the preventive strategies of pregnant mothers?

Table 5 shows a statistically significant positive relationship between GDM knowledge and the adoption of preventive strategies ($\beta = 0.233$, $p = .020$). For every unit increase in knowledge score, the predicted preventive strategy score increased by 0.277 units. However, this analysis does not account for other potentially influential factors, such as access to healthcare or socioeconomic status.

Table 5. Level of knowledge on gestational diabetes mellitus predict the preventive strategies of pregnant mothers

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.918	1.296		6.486	.000
Knowledge	.277	.117	.233	2.371	.020

a. Dependent Variable: preventive strategies

This study examined the socio-demographic profile and knowledge of gestational diabetes mellitus (GDM) among 100 pregnant mothers, along with their preventive practices and the correlation between knowledge and preventive strategies. The sample consisted primarily of women aged 21-40 (70%), with the majority having secondary education (28%) and being unemployed (74%). A substantial portion (80%) reported a monthly income of 10,000 or less, and 76% were multiparous (2nd or higher pregnancy). Knowledge of GDM risk factors, symptoms, and complications was rated as poor across all three areas, a finding consistent with previous research indicating a significant lack of GDM awareness among pregnant women (Dhyani, 2018). Preventive strategies related to diet and prenatal checkups were rated as moderately preventive, while physical activity was rated as fairly preventive; these findings support the established benefits of healthy diet and exercise in reducing GDM risk (Tehrani & Yarandi, 2019). Statistically significant positive correlations were found between knowledge levels across the three GDM knowledge areas and between knowledge levels and the adoption of preventive strategies. These findings suggest that improving GDM knowledge among pregnant women, particularly concerning risk factors and complications, is crucial for promoting the adoption of effective preventive strategies. This aligns with existing research showing that more than half of pregnant women have insufficient knowledge about GDM, with factors like age, education, preconception care, history of GDM, and hypertension playing significant roles (Dissassa et al., 2023), highlighting the need for improved health education initiatives.

Conclusion

In conclusion, this study highlights several key findings regarding the knowledge and preventive practices related to gestational diabetes mellitus (GDM) among pregnant mothers. The respondents were adequately represented in terms of age, educational attainment, occupational status, monthly income, and number of pregnancies. However, the average knowledge level regarding GDM risk factors, symptoms, and complications was found to be poor, while responses regarding preventive strategies were rated at a moderate level. Furthermore, when examining correlations between knowledge levels and preventive practices grouped by sociodemographic profiles, only age and number of pregnancies showed a significant positive correlation.

Based on these findings, the study recommends several interventions to improve GDM knowledge and prevention strategies. First, efforts should focus on enhancing understanding of GDM risk factors, symptoms, and complications through accessible and comprehensible interventions that consider literacy levels and cultural contexts. Utilizing multiple delivery methods, such as print materials, videos, and group sessions, can increase the effectiveness of these educational initiatives.

Second, while the current adoption of preventive strategies is moderate, further improvements are essential. Educational campaigns should emphasize not only knowledge but also practical strategies for preventing GDM, including promoting healthy lifestyle choices such as balanced diets, regular exercise, and consistent prenatal check-ups.

Third, healthcare providers should strengthen their counseling programs for pregnant mothers, focusing on GDM prevention and risk reduction. Additionally, schools and related agencies could implement community-based programs that disseminate information and encourage healthy behaviors, partnering with community health centers, hospitals, and local organizations to reach a broader audience.

Lastly, further research is needed to explore the reasons behind the moderate adoption of preventive strategies, particularly in light of the correlations with age and parity. Future studies could investigate additional factors such as socioeconomic status, access to healthcare, cultural beliefs, and perceived barriers to adopting preventive strategies. This comprehensive approach will help enhance GDM awareness and prevention efforts among pregnant mothers, ultimately improving health outcomes for both mothers and their children.

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