International Journal of Studies in Education [Special Edition] – [2025], Vol. 21, Issue 2:190-201
ISSN: 2636-632O [ONLINE] - 2636-6339 [PRINT]

GESTATIONAL DIABETES MELLITUS KNOWLEDGE AND COMPLICATIONS AMONG PREGNANT WOMEN ATTENDING PRIMARY HEALTH CARE FACILITIES IN NSUKKA LGA, ENUGU STATE, NIGERIA

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Abstract
The study examined GDM knowledge and complications on maternal and fetal health among pregnant women attending antenatal at primary health care facilities in Nsukka Local Government Area, Enugu State. Four research questions and two research hypotheses guided the study. A descriptive cross- sectional design was used for the study. The population consisted 5800 pregnant women that registered for antenatal in the primary health care facilities Nsukka Local Government Area, Enugu State. Multi-stage sampling procedure was used to draw a sample 400 pregnant mothers. Instrument for data collection was questionnaire designed by the researchers. The instrument was validated by three experts from Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The reliability was established using Spearman Brown Correlation Coefficient and a reliability index of .73 and .75 was obtained for knowledge and complications questionnaire respectively. Out of 400 copies of questionnaires administered, 357 were properly completed, and were used for data analysis. Research questions were analyzed using frequency and percentages while the hypotheses were tested using Chi-square at 0.05 level of significance. The result of the study showed that pregnant women possessed moderate (41.0%) knowledge of GDM and low (35.0%) knowledge of complications of GDM. Result also indicated that pregnant women with tertiary education and employed had high GDM knowledge than their counterparts. Result of the study also showed that there was significant difference in the GDM knowledge and complications based on level of education and employment status ($p = < .05$) but there was no significant difference in the GDM knowledge and complications based on age among pregnant women ($p = >.05$). It was recommended that health educators in collaboration with Ministry of Health should embark on sensitization campaign to enlighten women on gestational diabetes mellitus.

Keywords: Knowledge, diabetes mellitus, complications, pregnant women.

Introduction
Gestational diabetes mellitus (GDM) is high blood sugar in pregnancy with adverse effect on the mother and baby. Abnormal glucose tolerance that has an onset or its first diagnosed during pregnancy is known as gestational diabetes mellitus (Sweeting et al. 2022). Gestational diabetes mellitus is defined as diabetes diagnosed in the second or third trimester of pregnancy that was not clearly overt diabetes prior to gestation (American Diabetes Association, 2020). Operationally, GDM is defined as high blood glucose level diagnosed at 2^{nd} or 3^{rd} trimester of pregnancy which was not present prior to gestation. This is caused by the inability of tissues to absorb glucose from the bloodstream during pregnancy due to insufficient insulin or additional pregnancy hormones. The additional pregnancy hormones produced by the placenta have an anti-insulin effect impairing the absorption of insulin during pregnancy. World Health Organization (WHO, 2013) outlined glucose threshold rates for the diagnosis of GDM, those being > 5.1 mmol/L plasma glucose concentrations by fasting, > 10mmol/L an hour after consuming food, and > 8.5mmol/L after two hours. The prevalence of GDM in Nigeria was 0.5%-38% and the

pooled prevalence was 11.0% (Taoreed et al. 2021). It is estimated that by 2045, DM will affect approximately 451 million individuals aged 18 years and older worldwide, with type 2 diabetes (T2DM) and its associated conditions being the primary components of this epidemic (Khan et al., 2022, Lio et al. 2021 & Wei et al. 2019). Moreover, hyperglycemia during pregnancy is a global health issue affecting a significant number of women and is connected to a range of adverse pregnancy results (Mcintyre et al. 2022). Regardless of all the current diagnostic and therapeutic options for hyperglycaemia management as well as improved obstetric surveillance, DM in pregnancy remains a high-risk condition for both mother and child (Zito et al. 2020). Gestational diabetes mellitus is a serious metabolic health problem diagnosed during pregnancy and may continue after delivery. Thus, there is need to determine the knowledge of GDM among pregnant women for early diagnosis and prompt management.

Knowledge of GDM refers to the information that women have about the disease. In the context of this study, knowledge of GDM entails the ability of pregnant women to identify risk factors and signs and symptoms of the disease. Risk factors for GDM include advanced maternal age, family history of type 2 diabetes mellitus, previous personal history of GDM, maternal overweight/obesity, (BMI > 30kg/m2), previous (first) pregnancy without GDM that was complicated by hypertensive disorder, perinatal mortality and fetal macrosomia (Gao et al. 2019, Yoles et al. 2021). Siuluta et al. (2024) identified signs and symptoms of GDM to include high blood sugar (16.1%), frequent urination (24.01%), excessive thirst (20.06%) and excessive hunger (19.29%) among the participants. The above signs and symptoms including blurred vision and slow healing of wounds were determined in this study. The knowledge of GDM among pregnant women would enable them to book for antennal care for early medical interventions and proper counselling. Different studies have been documented on GDM knowledge among pregnant women. Dhyani et al. (2018) reported that (51.5%) had good knowledge while (Bada et al. (2024) and Siuluta et al. (2024) indicated that only (21.3% and 29.0%) respectively were knowledgeable about gestational diabetes mellitus. Inadequate or poor knowledge of GDM no doubt can result to complications with adverse effect on the fetus and mother.

Complications of GDM are serious health problems threatening the life of the fetus and mother. GDM are associated with adverse pregnancy outcome such as risks of maternal pre-eclampsia/eclampsia, maternal cardiovascular disease, maternal type 2 diabetes mellitus, fetal macrosomia, preterm delivery, caesarian section, birth trauma, infant respiratory distress syndrome, cardiac malformation in the neonate and admission of neonate to intensive care unit (Plows et al. 2018, Ye et al. 2022). Operationally, complications of GDM refer to new health problems developed during pregnancy resulting from GDM. These complications if not properly managed affect or even cause the death of the fetus or mother, or both. Previous researchers have conducted studies on complications of GDM. Bada et al. (2024), Quenby et al. (2024), Quaresima et al. (2021), Vilas and Sonal (2019) reported on different complications of GDM on the fetus/baby and mother. The GDM knowledge and the complications may be associated with certain socio-demographic variables. Socio-demographic variables in this study refer to personal characteristics of the pregnant women that are likely to be associated with knowledge of GDM and its complications. Studies have documented associations between knowledge of GDM and socio-demographic variables of age, level of education, occupation and employment status (Siuluta et al. 2024, Prabhu et al. 2021). The socio-demographic variables of age, level of education and employment status were determined in this study. The socio-demographics variables may negatively influence the GDM knowledge and its complications causing serious health challenges to the baby and mother.

The health problems have adverse impacts on fetus, baby and mother during pregnancy and may continue afterwards. Despite the high prevalence of GDM globally, some studies conducted in different countries indicated low or poor knowledge of GDM (Bada et al. 2024, Siuluta et al. 2024). Adequate GDM knowledge and its complications would help to reduce the perinatal mortality rates among women with GDM and to mitigate the effects on the mother through proper management. The GDM knowledge and its complications can be acquired during antenatal care or through health education programme targeting pregnant women. To the knowledge of the researchers, no study has been conducted on GDM among pregnant women in the study area. Thus, the need to determine the knowledge of GDM among women attending antenatal care in the primary healthcare facilities in Nsukka Local Government Area (LGA), Enugu State, Nigeria.

Purpose of the Study

The main purpose of the study was to determine the GDM knowledge, complications and associated socio-demographic variables among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State. Four research questions and two hypotheses guided the study.

Research Questions

The following research questions guided the study;

1. What is the GDM knowledge among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State?
2. What is the knowledge of complications of GDM among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State?
3. What is the GDM knowledge among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State based on level of education, age and employment status?
4. What is the knowledge of complications of GDM among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State based on level of education, age and employment status?

Hypotheses

Two hypotheses were postulated and tested at .05 level of significance.

1. There is no significant difference in the GDM knowledge among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State.
2. There is no significant difference in the knowledge of complications of GDM among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State

Methods

This study adopted a descriptive cross-sectional survey research design. The study was conducted in Nsukka Local Government Area (LGA Enugu State. There are 18 towns in Nsukka LGAs and each has many primary health care facilities. The population comprised of all 5800 omen that registered for antenatal care in the primary health care facilities in Nsukka LGA, Enugu State between March 2024-October 2024 (Primary Health Care Management Board, Nsukka). The sample size for the study was 400 pregnant women that registered for antenatal in the primary health care facilities in the State. The is in tandem with the suggestion of Cohen et al. (2018) that if the population of the study is 5000 and above at 95 percent confidence level and 5 percent confidence interval, the sample size should be 357 and above. Multi-stage sampling procedure was used to select communities and primary healthcare facilities in the communities. Stage one involved the use of simple random

sampling to select ten communities out of the 18 communities in Nsukka LGA. Stage two is purposive sampling to select ten functional health care facilities from the ten communities selected out from the 18 communities. The researchers purposively selected ten functional primary healthcare facilities in each community. Consequently, a total of ten primary healthcare facilities were selected. Convenience sampling was used to select at least 40 antenatal women from each of the primary healthcare facility. Each of the health facility was visited many times until the sample size was attained. This gave a total of 400 antenatal women used for the study. Instrument for data collection was questionnaire designed by the researchers. The instrument was designed after extensive literature review. The instrument consisted of 24 items on the status GDM among the women. Fourteen items that elicited information on GDM knowledge among the participants and ten items elicited information on the complications The instrument had a response options of "Yes or N0" and respondents were requested to place a tick (√) against the option as it applies to them. The face validity of the instrument was established by three experts from Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The Reliability of the instrument was established using Spearman Brown correlation coefficient. A reliable index of .73 was obtained for GDM knowledge and .75 was obtained for the complications of GDM and the instrument was considered reliable for the study. Four hundred (400) copies of the questionnaire were administered to the respondents by the researcher with the help of one research assistant who is a staff at each health care facility and were briefed on modalities of data collection. Four hundred copies of questionnaire were administered by the researchers and research assistants at each day of antenatal. The research questions were analyzed using frequencies and percentages. In determining the GDM knowledge percentage scores <20% were interpreted as very low knowledge; 20-39% low knowledge; 40-59% average/moderate knowledge; 60-79% high knowledge while >80% was considered very high knowledge.

Results

Research Question 1: What is the status of GDM knowledge among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State?

Table 1: Status of Gestational Diabetes Mellitus Knowledge among Pregnant Mothers (n=357).

S/N	Gestational diabetes mellitus knowledge indicators.	Correct responses f(%)	Incorrect responses f(%)
1.	Have you ever heard of gestational diabetes mellitus	136(38.1)	221(61.9)
2.	Gestational diabetes mellitus can only be diagnosed in pregnancy.	112(31.4)	245(68.6)
3.	Do you have any knowledge about gestational diabetes mellitus.	118(33.1)	239(66.9)
	Risk factors of gestational diabetes mellitus		
4.	Family history of diabetes mellitus.	211(59.1)	146(40.9)
5.	Obesity (BMI>30kg)	87(24.4)	270(75.6)
6.	Diagnosis of GBM in the previous pregnancies.	207(58.0)	150(42.0)
7.	Higher maternal age at pregnancy.	89(24.9)	268(75.1)

8.	Lack of exercise.	81(22.7)	276(77.3)
9.	Unhealthy diet.	125(35.0)	232(65.0)
	Signs and symptoms of gestational diabetes mellitus.		
10.	High blood sugar.	212(59.4)	145(40.6)
11.	Frequent urination.	209(58.5)	148(41.5)
12.	Excessive thirst.	133(37.3)	224(62.7)
13.	Excessive hunger.	129(36.1)	228(63.9)
14.	Blurred vision (inability to see well).	200(56.0)	157(44.0)
	Overall%	**41.0**	**59.0**

The result in Table 1 indicates that the participants had moderate knowledge of family history (59.1%) and diagnosis of GDM in the previous pregnancies (58.0%) as the risk factors of GDM, while they possessed low knowledge of obesity (24.4%), higher maternal age at pregnancy (24.9%), lack of physical activity (22.7%) and unhealthy diet (35.0%) as risk factors of GDM. The results of the study also show that pregnant women possessed moderate knowledge of high blood sugar (59.4%), frequent urination (58.5%) and blurred vision (56.0%) on signs and symptoms of GDM, while they had low knowledge of excessive thirst (37.3%), excessive hunger (36.1%) as signs and symptoms of GDM. Pregnant women had low knowledge on ever heard of GDM (38.1%) and previous knowledge of GDM (33.1%). Overall, pregnant women had moderate knowledge (41.0%) of GDM.

Research Question 2: What is the knowledge of complications of GDM among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State?

Table 2: Knowledge of Complications of GDM among Pregnant Women.

S/N	Complications of GDM on the fetus/baby.	Correct responses f(%)	Incorrect responses f(%)
1.	Abortions (miscarriages).	100(28.0)	257(72.0)
2.	Congenital anomalies (heart defect, neural tube defect).	49(13.7)	308(86.3)
3.	Premature birth.	71(19.9)	286(80.1)
4.	Giving birth to big baby (macrosomia) weighing more than 4.5kg).	203(56.9)	154(43.1)
5.	Neonatal problems (jaundice of the newborn).	50(14.0)	307(86.0)
6.	Birth trauma (dislocation of the shoulder)	201(56.3)	156(43.7)
	Complications on the mother		
7.	Pre-eclampsia (hypertension in pregnancy).	109(30.5)	248(69.5)
8.	Antepartum haemorrhage (bleeding in pregnancy)	81(22.7)	276(77.3)
9.	Difficult labour because of big baby.	205(57.4)	152(42.6)
10.	Caesarean section (operation) for delivery.	199(55.7)	158(44.3)
	Overall %	**35.5**	**64.5**

<20% = very low knowledge; 20-39% low knowledge; 40-59% moderate knowledge; 60-79% high knowledge, >80% very high knowledge. Result in Table 2 shows that pregnant women had moderate knowledge of giving birth to big baby (56.9%) and birth trauma

(56.3%) as the complications of GDM on the fetus/baby, but possessed very low knowledge of congenital anomalies (13.7%) neonatal problems (14.0%), premature birth (19.8%) as complications of GDM on the fetus/baby. The result also shows that pregnant women possessed moderate knowledge of difficult labour (57.4%) and caesarean section for delivery (55.7%) as complications of GDM on the mother, but had low knowledge of pre-eclampsia (30.5%) and bleeding in pregnancy (22.7%) as complications of gestational diabetes on the mother. Overall, pregnant women had low sknowledge (35.5%) of complications of gestational diabetes mellitus.

Research Question 3: What is the level of GDM knowledge among pregnant women based on level of education, age and employment status?

Table 3: Level of GDM knowledge among pregnant women based on level of education, age and employment status.

Variables.	Low knowledge (%)	Moderate knowledge f(%)	High knowledge f(%)	Total f(%)
Level of education				
Primary	29(41.4)	26(37.1)	17(21.4)	70(100)
Secondary	47(35.6)	53(40.1)	32(24.2)	132(100)
Tertiary	32(20.6)	48(30.9)	75(48.3)	155(100)
Age(years)				
15-20	5(41.6)	4(33.3)	3(25.0)	12(100)
21-26	47(37.0)	41(32.2)	39(30.7)	127(100)
27-32	37(26.0)	46(32.3)	59(41.5)	142(100)
33 and above	22(28.9)	29(38.1)	25(32.8)	76(100)
Employment status				
Employed	28(27.7)	31(30.6)	42(41.5)	101(100)
Unemployed	52(38.8)	49(36.5)	33(24.6)	134(100)
Self-employed	33(27.0)	39(31.9)	50(40.9)	122(100)

Results in Table 3 shows that high proportion of pregnant women with tertiary level of education had high knowledge 75(48.3%) while high proportion of those with primary education had low knowledge 29(41.4%) of GDM. The result also indicates that greater proportion of pregnant women aged 27-32 had high knowledge 59(41.5%) while greater proportion of those aged 15-20 had low knowledge 29(41.6%) of GDM. In addition, the result shows that high proportion of pregnant women who are employed 42(41.5%) and self-employed 50(40.9%) had high knowledge while high proportion of those who were unemployed 52(38.8%) had low knowledge of GDM.

Research Question 4: What is the level of knowledge of complications of GDM among pregnant women based on level of education, age and employment status?

Table 4: Level of knowledge of complications of GDM among pregnant women based on level of education, age and employment status.

Variables	Low knowledge f(%)	Moderate knowledge f(%)	High knowledge f(%)	Total f(%)
Level of education				
Primary	23(32.8)	27(38.5)	20(28.5)	70(100)

Secondary	39(29.5)	44(33.3)	49(37.1)	132(100)
Tertiary	43(27.7)	48(30.9)	64(41.2)	155(100)
Age(years)				
15-20	5(41.6)	3(25.0)	4(33.3)	12(100)
21-26	28(22.0)	47(37.0)	52(40.9)	127(100)
27-32	35(24.6)	56(39.4)	51(35.9)	142(100)
33 and above	16(21.0)	35(46.0)	25(32.8)	76(100)
Employment status				
Employed	31(30.6)	37(36.6)	33(32.6)	101(100)
Unemployed	47(35.0)	42(31.3)	45(33.5)	134(100)
Self-employed	37(30.3)	45(36.8)	40(32.7)	122(100)

Result in Table 4 shows that pregnant women with tertiary education had high knowledge 64(41.2%) while high proportion of pregnant women with primary education had low knowledge 23(32.8%) of complications of GDM. Also, high proportion of participants aged 33 years and above had moderate knowledge (46.0%) while those high proportion aged 15-20 had low knowledge of complications of GDM. The result also shows that greater percentage of pregnant women who were employed (36.6%) and self-employed (36.8%) had moderate knowledge while greater percentage of the unemployed had low knowledge (35.0%) of complications of GDM.

Hypothesis 0ne

There is no significant difference in the GDM knowledge among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State.

Table 5: Summary of Chi-square Analysis of No Significant Difference in the GDM Knowledge among Pregnant Women based on level of education, age and occupation

Variables	Correct O(E)	Incorrect O(E)	x^2	Df	p-value	Decision
Level of education	57(50.4)	13(17.6)				
Primary						
Secondary	107(99.5)	25(34.5)	14.126	3	.003	Significant
Tertiary	100(115,1)	55(39.9)				
Age(years)						
15-20	79(11.1)	56(3.9)				
21-26	93(93.5)	34(32.5)	2.639	3	.451	Not significant
27-32	110(105.4)	32(36.6)				
33 and above	53(54.9)	23(19.1)				
Employment status						
Employed	63(75.0)	38(26.0)				
Unemployed	101(99.5)	33(34.5)	12.180	3	.002	Significant
Self-employed	101(90.6)	21(31.4)				

Result in Table 5 shows a significant difference in the GDM knowledge among pregnant women based on education (x^2 = 14.126, p = .003) and employment status (x^2 = 12.180, p = .002) since the p-value are less than .05 level of significance while there is no significant

difference in the GDM knowledge among pregnant mothers based on age (x^2 = 2.639, p = .450) since p-value is greater than .05 level of significance.

Hypothesis Two

There is no significant difference in the knowledge of complications of GDM among pregnant women attending primary health care facilities in Nsukka LGA, Enugu State

Table 6: Summary of Chi-square Analysis of No Significant Difference in the Complications of GDM among Pregnant Women based on level of education, age and employment status

Variables	Correct O(E)	Incorrect O(E)	x^2	Df	p-value	Decision
Level of education						
Primary	55(50.2)	15(17.8)				
Secondary	105(99.1)	27(35.9)	14.128	3	.003	Significant
Tertiary	105(117.0)	50(40.0)				
Employment status						
Employed	62(74.9)	39(26.1)				
Unemployed	103(99.7)	31(33.3)	12.192	3	.004	Significant
Self-employed	101(90.6)	21(31.4)				
Age(years)						
15-20	5(10.9)	7(4.1)				
21-26	96(93.7)	31(33.3)	2.648	3	.453	Not significant
27-32	112(105.8)	30(35.2)				
33 and above	54(55.0)	22(19.0)				

Result in Table 6 shows a significant difference in the knowledge of complications GDM among Pregnant women based on education (x^2 = 14.128, p = .003) and employment status (x^2 = 12.192, p = .004) since the p-value are less than .05 level of significance while there is no significant difference in the knowledge of complications of GDM among pregnant women based on age (x^2 = 2.648, p = .453) since p-value is greater than .05 level of significance.

Discussion

Result in Table 1 showed that pregnant women possessed moderate (41.0%) knowledge of gestational diabetes mellitus. This might be attributed to the knowledge gained about diabetes mellitus in their previous antenatal and postnatal care. This corroborates with the findings of Dhyani et al. (2018) which reported good knowledge (51.5%) but at variance with the findings of Bada et al. (2024) and Siuluta et al. (2024) who indicated that only (21.3.0%) and (29.0%) had good knowledge of gestational diabetes mellitus. Result in Table 1 also showed that pregnant women who have ever heard of GDM was (38.0%). This result is at variance with the study of Bada et al. (2024) which reported ever heard of GDM (75.5%) but similar to the study of Ogu et al. (2020) which reported (39.3%). The difference in the studies was that Bada's study was conducted among GDM patients who are conversant with the condition. The result in Table 1 also showed that pregnant women reported family history of GDM (59.1%), obesity (24%), lack of exercise (22.7%) and higher maternal age (24.9%) as the risk factors of GDM. The may be from the knowledge gained during antenatal care services. This finding contradicts with the study of Siuluta et al. (2024) that identified older

age (4.8%), family history (18.64%), poor diet (11.86%) and lack of exercise (7.34%) but in tandem with the findings of Vilas & Sonal, (2019) which reported family history (32.73%) and obesity (32.0%) as the risk factors of GDM among the respondents. Result in Table 1 further indicated that pregnant women identified high blood sugar level (59.1%), frequent urination (58.5%), excessive thirst (37.2%) and blurred vision (56.0%). The justification for this might be that GDM presents the same signs and symptoms with diabetes mellitus, and the women may have heard about the clinical manifestations of diabetes. The result disagrees with the study of Siuluta et al. (2024) which reported high blood sugar (16.10%), frequent urination (24.01%), excessive thirst (20.06%) and excessive hunger (19.29%) among the participants.

Result in Table 2 indicated pregnant women had low knowledge (35.5%) of complications of GDM. This might be that only mothers suffering from GDM experience and encounter the complications. The result agrees with the findings of Shafaiya and Rohini (2021) which reported (30%) knowledge of complications of GDM. The result also showed that women possessed moderate knowledge of giving birth to big baby (59.6%) and birth trauma (56.3%) as major complications of GDM on the fetus/baby. This can be attributed to the extraordinary big babies born by GDM mothers and obvious birth trauma of the newborn. This result is in contrast with the findings of Bada et al. (2024) which identified big baby (1.6%) but consistent with the findings of Quaresima et al. (2021) which reported big baby (66.2%) and birth trauma (63.1%) as complications of GDM on the fetus /baby. Result of the study in Table 2 also showed that pregnant women had moderate knowledge of difficult delivery (57.4%) and caesarean section for delivery (55.7%) as the major complications of GDM on the mother. The justification for this result might be that difficult labour and eventual caesaren section are common among GDM mothers due to big baby. The result contradicts with the findings of Siuluta et al. (2024) which reported difficult labour (19.49%) and caesarean section (19.49%) as complications of GDM on the mother.

Result of study Table 3 indicated that pregnant women with tertiary education (48.3%), women aged 27-32 (41.5%), employed (41.5%) and self-employed (40.9%) had high knowledge of GDM compared with their counterparts. Also, result in Table 5 showed that there was a significant difference in the GDM knowledge among the pregnant women based on level of education and employment status ($p < .05$) while there is no significant difference based on age ($p > .05$). This is because education empowers women to assess information from many sources about GDM and income based on employment status avail women with resources to attend health care facilities where they can be enlightened on GDM by health care professionals. The result disagrees with the findings of Siuluta et al. (2024) and Kahimakazi et al. (2023) that reported that level of education, employment status and age are not significantly associated ($p > .05$) with knowledge of GDM among the respondents but agrees with the findings of Shfaiyaz and Rohini (2021) and Prabhu et al. (2021) which reported that education and occupation was significantly associated ($p = < .05$) with knowledge of GDM among women. Result of study in Table 4 showed that pregnant women with tertiary education (41.6%), 33 years and above (40.0%), employed (36.6%) and self-employed (36.8%) had moderate knowledge of complications of GDM compared with their counterparts. The result in Table 6 also indicated that level of education and employment status was significantly associated with knowledge of complications of GDM among the pregnant women. The result is concordant with the study of Ruiz et al. (2024) and Gauri et al. (2022) which reported that complications of GDM are significantly associated with level of education and income level but at variance with the study of Kahimakazi et al (2023) which reported that age, education and employment status are not significantly associated with

knowledge of GDM complications. The similarities and differences may be linked to area of study and socio-economic status of the participants.

Conclusion

Although GDM had adverse effects on the pregnancy outcome, the study found that GDM knowledge was moderate while knowledge of complications was low among the pregnant women. The GDM knowledge and complications are associated with the women level of education and employment status.

Recommendations

GDM increased the risk of adverse pregnancy outcome with negative impacts on the mother and baby. The effects on the baby may be continued into childhood and even adulthood. Public health educators should embark on sensitization campaign to enlighten women on GDM. Government should encourage female education and empower women economically to improve GDM knowledge and complications. Also, health care professionals should educate women on concept, risk factors, sign and symptoms, complications and prevention of gestational diabetes mellitus.

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